

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

**Form S-4
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

Amtech Systems, Inc.

(Exact Name of Registrant as Specified in its Charter)

Arizona
(State or other jurisdiction of
incorporation or organization)

3559
(Primary Standard Industrial
Classification Code Number)

86-0411215
(I.R.S. Employer
Identification Number)

**131 South Clark Drive
Tempe, Arizona 85281
(480) 967-5146**

(Address, including Zip Code, and Telephone Number, including Area Code, of Registrant's Principal Executive Offices)

Bradley C. Anderson
Executive Vice President and Chief Financial Officer
Amtech Systems, Inc. 131 South Clark Drive
Tempe, Arizona 85281
(480) 967-5146

(Name, Address, including Zip Code, and Telephone Number, including Area Code, of Agent for Service)

With copies to:

Christopher D. Johnson, Esq.
Squire Patton Boggs (US) LLP
1 East Washington, Suite 2700
Phoenix, Arizona 85004
(602) 528-4046

Paul J. van der Wansem
Chairman, President and Chief
Executive Officer
BTU International, Inc.
23 Esquire Road
North Billerica, MA 01862
(978) 667-4111

Timothy C. Maguire, Esq.
Pierce Atwood LLP
100 Summer Street, #2250
Boston, MA 02110
(617) 488-8140

Approximate date of commencement of the proposed sale of the securities to the public:

As soon as practicable after this Registration Statement becomes effective and upon completion of the merger described in the enclosed document.

If the securities being registered on this Form are being offered in connection with the formation of a holding company and there is compliance with General Instruction G, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act of 1933, as amended, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

Smaller reporting company

If applicable, place an X in the box to designate the appropriate rule provision relied upon in conducting this transaction:

Exchange Act Rule 13e-4(i) (Cross-Border Issuer Tender Offer)

Exchange Act Rule 14d-1(d) (Cross-Border Third-Party Tender Offer)

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered	Proposed maximum offering price per unit	Proposed maximum aggregate offering price	Amount of registration fee
Common stock, par value \$.01 per share	3,647,301(1)	N/A	\$ 35,742,110(2)	\$ 4,153.23(3)

(1) Represents the maximum number of shares of common stock, par value \$.01 per share, of the registrant ("Amtech common stock") estimated to be issuable upon completion of the merger described herein (the "merger") in exchange for shares of common stock, par value \$.01 per share, of BTU International, Inc. ("BTU common stock") that are currently outstanding or underlying outstanding options and restricted stock units, and the exchange for each such share of BTU common stock for 0.3291 shares of Amtech common stock, which is the exchange ratio under the merger agreement. Pursuant to Rule 416, this Registration Statement also covers additional securities that may be issued as a result of stock splits, stock dividends or similar transactions.

(2) Pursuant to Rules 457(c), 457(f)(1) and 457(f)(3) promulgated under the Securities Act and solely for the purpose of calculating the registration fee, the proposed aggregate maximum offering price is the product of (x) \$3.22505 (the average of the high and low prices of BTU common stock as reported on the NASDAQ Stock Market on November 19, 2014, and (y) 11,082,653, the estimated maximum number of shares of BTU common stock that may be exchanged for the merger consideration.

(3) Computed in accordance with Rule 457(f) under the Securities Act to be \$4,153.23, which is equal to 0.0001162 multiplied by the proposed maximum aggregate offering price of \$35,742,110.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act, or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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Information contained herein is subject to completion or amendment. A registration statement relating to these securities has been filed with the Securities and Exchange Commission. These securities may not be sold nor may offers to buy be accepted prior to the time the registration statement becomes effective. This document shall not constitute an offer to sell or the solicitation of any offer to buy nor shall there be any sale of these securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction.

PRELIMINARY—SUBJECT TO COMPLETION—DATED NOVEMBER 24, 2014

Proxy Statement

Prospectus



MERGER PROPOSED—YOUR VOTE IS VERY IMPORTANT

Dear Stockholder:

On October 21, 2014, BTU International, Inc., or BTU, and Amtech Systems, Inc., or Amtech, entered into an Agreement and Plan of Merger (which we refer to as the “merger agreement”). Under the merger agreement, BTU Merger Sub, Inc., or Merger Sub, will merge with and into BTU with BTU surviving as a wholly owned subsidiary of Amtech (which we refer to as the “merger”).

In the merger, each share of BTU common stock (except for specified shares of BTU common stock held by BTU or Amtech) will be converted into the right to receive 0.3291 shares of Amtech common stock (which we refer to as the “exchange ratio”). Although the number of shares of Amtech common stock that BTU stockholders will receive is fixed, the market value of the merger consideration will fluctuate with the market price of Amtech common stock and will not be known at the time BTU stockholders vote on the merger. Based on the closing price of Amtech’s common stock on the NASDAQ STOCK MARKET, or NASDAQ, on October 21, 2014, the last trading day before public announcement of the merger, the 0.3291 exchange ratio represented approximately \$3.33 in value for each share of BTU common stock. **We urge you to obtain current market quotations for Amtech (trading symbol “ASYS”) and BTU (trading symbol “BTUP”).**

Based on the current number of shares of BTU common stock outstanding and certain stock awards reserved for issuance under employee benefit plans, Amtech expects to issue up to a maximum of 3,647,301 shares of Amtech common stock to BTU stockholders in the aggregate upon completion of the merger. However, any increase or decrease in the number of shares of BTU common stock outstanding prior to the completion of the merger could cause the actual number of shares issued upon completion of the merger to change.

Amtech will hold a special meeting of its stockholders and BTU will hold a special meeting of its stockholders in connection with the merger. Amtech stockholders will be asked to vote to adopt the merger agreement and approve related matters as described in the attached proxy statement/prospectus. BTU stockholders will be asked to vote to adopt the merger agreement and approve related matters as described in the attached proxy statement/prospectus. Adoption of the merger agreement requires the affirmative vote of the holders of a majority of the outstanding shares of Amtech common stock entitled to vote and the affirmative vote of the holders of two-thirds of the outstanding shares of BTU common stock entitled to vote.

The special meeting of Amtech stockholders will be held on [], 2014 at [insert location], at [] A.M. local time. The special meeting of BTU stockholders will be held on [], 2014 at [insert location], at [] A.M. local time.

Amtech’s board of directors unanimously recommends that Amtech stockholders vote “FOR” the adoption of the merger agreement and “FOR” the other matters to be considered at the Amtech special meeting.

BTU’s board of directors unanimously recommends that BTU stockholders vote “FOR” the adoption of the merger agreement and “FOR” the other matters to be considered at the BTU special meeting.

This joint proxy statement/prospectus describes the special meeting of Amtech, the special meeting of BTU, the merger, the documents related to the merger and other related matters. **Please carefully read this entire joint proxy statement/prospectus, including “Risk Factors,” beginning on page 29, for a discussion of the risks relating to the proposed merger.** You also can obtain information about Amtech and BTU from documents that each has filed with the Securities and Exchange Commission.

Jong S. Whang
Executive Chairman
Amtech Systems, Inc.

Paul J. van der Wansem
Chairman, President and Chief Executive Officer
BTU International, Inc.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the securities to be issued in the merger or passed upon the adequacy or accuracy of this joint proxy statement/prospectus. Any representation to the contrary is a criminal offense.

The date of the accompanying joint proxy statement/prospectus is [], and it is first being mailed or otherwise delivered to the stockholders of Amtech and BTU on or about [].



NOTICE OF SPECIAL MEETING OF STOCKHOLDERS

To the Stockholders of BTU International, Inc.:

BTU International, Inc. will hold a special meeting of stockholders at [] A.M. local time, on [], 2014, at [insert location] to consider and vote upon the following matters:

- a proposal to adopt the Agreement and Plan of Merger, dated as of October 21, 2014, by and between Amtech Systems, Inc., BTU Merger Sub, Inc. and BTU International, Inc., pursuant to which Merger Sub will merge with and into BTU with BTU surviving as a wholly owned subsidiary of Amtech, as more fully described in the attached joint proxy statement/prospectus (which we refer to as the “BTU merger proposal”);
- a proposal to adjourn the BTU special meeting, if necessary or appropriate, to solicit additional proxies in favor of the BTU merger proposal (which we refer to as the “BTU adjournment proposal”);
- a proposal to approve, on an advisory (non-binding) basis, the compensation that certain executive officers of BTU may receive in connection with the merger pursuant to existing agreements or arrangements with BTU (which we refer to as the “BTU merger-related compensation proposal”); and
- to transact such other business as may properly come before the meeting or any adjournment thereof.

We have fixed the close of business on [], 2014 as the record date for the special meeting. Only BTU common stockholders of record at that time are entitled to notice of, and to vote at, the BTU special meeting, or any adjournment or postponement of the BTU special meeting. Approval of the BTU merger proposal requires the affirmative vote of holders of at least two-thirds of the outstanding shares of BTU common stock entitled to vote. The BTU adjournment proposal will be approved if a majority of the votes cast at the BTU special meeting are voted in favor of the adjournment proposal. The BTU merger-related compensation proposal will be approved if a majority of the votes cast at the BTU special meeting are voted in favor of the BTU merger-related compensation proposal; however, such vote is advisory (non-binding) only.

BTU’s board of directors has unanimously approved the merger agreement, has determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable and in the best interests of BTU and its stockholders, and unanimously recommends that BTU stockholders vote “FOR” the BTU merger proposal, “FOR” the BTU adjournment proposal, and “FOR” the BTU merger-related compensation proposal.

Your vote is very important. We cannot complete the merger unless BTU’s common stockholders adopt the merger agreement.

We urge you to sign, date, and send in the enclosed proxy at your earliest convenience, or to vote via the toll-free telephone number or via the Internet as instructed on the proxy card, whether or not you expect to be present at the meeting. Sending in your proxy or voting by telephone or on the Internet will not prevent you from voting your shares personally at the meeting, since you may revoke your proxy at any time before it is voted.

Regardless of whether you plan to attend the BTU special meeting, please vote as soon as possible. If you hold stock in your name as a stockholder of record of BTU, please complete, sign, date and return the accompanying proxy card in the enclosed postage-paid return envelope. If you hold your stock in “street name” through a bank or broker, please follow the instructions on the voting instruction card furnished by the record holder.

The enclosed joint proxy statement/prospectus provides a detailed description of the special meeting, the merger, the documents related to the merger and other related matters. We urge you to read the joint proxy statement/prospectus, including any documents incorporated in the joint proxy statement/prospectus by reference, and its annexes carefully and in their entirety.

BY ORDER OF THE BOARD OF DIRECTORS,

Paul J. van der Wansem
Chairman, President and Chief Executive Officer

[], 2014



NOTICE OF SPECIAL MEETING OF STOCKHOLDERS

To the Stockholders of Amtech Systems, Inc.:

Amtech Systems, Inc. will hold a special meeting of stockholders at [] A.M. local time, on [], 2014, at [insert location] to consider and vote upon the following matters:

- a proposal to adopt the Agreement and Plan of Merger, dated as of October 21, 2014, by and among Amtech Systems, Inc., BTU Merger Sub, Inc., and BTU International, Inc., pursuant to which Merger Sub will merge with and into BTU with BTU surviving as a wholly owned subsidiary of Amtech (which we refer to as the “Amtech merger proposal”), as more fully described in the attached joint proxy statement/prospectus;
- a proposal to adjourn the Amtech special meeting, if necessary or appropriate, to solicit additional proxies in favor of the Amtech merger proposal (which we refer to as the “Amtech adjournment proposal”); and
- to transact such other business as may properly come before the meeting or any adjournment thereof.

We have fixed the close of business on [] as the record date for the special meeting. Only Amtech common stockholders of record at that time are entitled to notice of, and to vote at, the Amtech special meeting, or any adjournment or postponement of the Amtech special meeting. Approval of the Amtech merger proposal requires the affirmative vote of holders of a majority of the outstanding shares of Amtech common stock entitled to vote. The Amtech adjournment proposal will be approved if a majority of the votes cast at the Amtech special meeting are voted in favor of the adjournment proposal.

IMPORTANT

Amtech’s board of directors has unanimously approved the merger agreement and has determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable and in the best interests of Amtech and its stockholders, and unanimously recommends that Amtech stockholders vote “FOR” the Amtech merger proposal, “FOR” the Amtech adjournment proposal, and “FOR” the other matters to be considered at the special meeting.

Your vote is very important. We cannot complete the merger unless Amtech’s stockholders adopt the merger agreement.

We urge you to sign, date, and send in the enclosed proxy at your earliest convenience, or to vote via the toll-free telephone number or via the Internet as instructed on the proxy card, whether or not you expect to be present at the meeting. Sending in your proxy or voting by telephone or on the Internet will not prevent you from voting your shares personally at the meeting, since you may revoke your proxy at any time before it is voted.

Regardless of whether you plan to attend the Amtech special meeting, please vote as soon as possible. If you hold stock in your name as a stockholder of record of Amtech, please complete, sign, date and return the accompanying proxy card in the enclosed postage-paid return envelope. If you hold your stock in “street name” through a bank or broker, please follow the instructions on the voting instruction card furnished by the record holder.

The enclosed joint proxy statement/prospectus provides a detailed description of the special meeting, the merger, the documents related to the merger and other matters to be considered at the Amtech special meeting. We urge you to read the joint proxy statement/prospectus, including any documents incorporated in the joint proxy statement/prospectus by reference, and its annexes carefully and in their entirety.

BY ORDER OF THE BOARD OF DIRECTORS,

Jong S. Whang
Executive Chairman

[], 2014

REFERENCES TO ADDITIONAL INFORMATION

This joint proxy statement/prospectus incorporates important business and financial information about Amtech from documents filed with the Securities and Exchange Commission, or the SEC, that are not included in or delivered with this joint proxy statement/prospectus. You can obtain any of the documents filed with or furnished to the SEC by Amtech at no cost from the SEC's website at <http://www.sec.gov>. You may also request copies of these documents, including documents incorporated by reference in this joint proxy statement/prospectus, at no cost by contacting Amtech at the following address:

Amtech Systems, Inc.
131 South Clark Drive
Tempe, Arizona 85281
Attention: Investor Relations
Telephone: (480) 967-5146

You will not be charged for any of these documents that you request. To obtain timely delivery of these documents, you must request them no later than five business days before the date of your meeting. This means that Amtech stockholders requesting documents must do so by [], 2014, in order to receive them before the Amtech special meeting.

This joint proxy statement/prospectus references important business and financial information about BTU from documents filed with the Securities and Exchange Commission, or the SEC, that are not included in or delivered with this joint proxy statement/prospectus. You can obtain any of the documents filed with or furnished to the SEC by BTU at no cost from the SEC's website at <http://www.sec.gov>. You may also request copies of these documents at no cost by contacting BTU at the following address:

BTU International, Inc.
23 Esquire Road
North Billerica, MA 01862
Attention: Investor Relations
Telephone: (978) 667-4111

You will not be charged for any of these documents that you request. To obtain timely delivery of these documents, you must request them no later than five business days before the date of your meeting. This means that BTU stockholders requesting documents must do so by [], 2014, in order to receive them before the BTU special meeting.

You should rely only on the information contained in, or incorporated by reference by Amtech into, this document. No one has been authorized to provide you with information that is different from that contained in, or incorporated by reference by Amtech into, this document. This document is dated [], 2014, and you should assume that the information in this document is accurate only as of such date. You should assume that the information incorporated by reference by Amtech into this document is accurate as of the date of such document. Neither the mailing of this document to BTU stockholders or Amtech stockholders nor the issuance by Amtech of shares of Amtech common stock in connection with the merger will create any implication to the contrary.

This document does not constitute an offer to sell, or a solicitation of an offer to buy, any securities, or the solicitation of a proxy, in any jurisdiction to or from any person to whom it is unlawful to make any such offer or solicitation in such jurisdiction. Except where the context otherwise indicates, information contained in this document regarding BTU has been provided by BTU and information contained in this document regarding Amtech has been provided by Amtech.

See "Where You Can Find More Information" beginning on page 163 for more details.

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QUESTIONS AND ANSWERS

The following are some questions that you may have about the merger and the BTU special meeting or the Amtech special meeting and brief answers to those questions. We urge you to read carefully the remainder of this joint proxy statement/prospectus because the information in this section does not provide all of the information that might be important to you with respect to the merger and the BTU special meeting or the Amtech special meeting. Additional important information is also contained in the documents incorporated by reference into this joint proxy statement/prospectus. See “Where You Can Find More Information” beginning on page 163.

Unless the context otherwise requires, references in this joint proxy statement/prospectus to “Amtech” refer to Amtech Systems, Inc., an Arizona corporation, and its affiliates, and references to “BTU” refer to BTU International, Inc., a Delaware corporation, and its affiliates.

Q: What is the merger?

A: Amtech and BTU have entered into an Agreement and Plan of Merger, dated as of October 21, 2014 (which we refer to as the “merger agreement”).

Under the merger agreement, Merger Sub will be merged with and into BTU, with BTU surviving as a wholly owned subsidiary of Amtech. A copy of the merger agreement is included in this joint proxy statement/prospectus as Annex A.

The merger cannot be completed unless, among other things, both Amtech stockholders and BTU stockholders approve their respective proposals to adopt the merger agreement.

Q: Why am I receiving this joint proxy statement/prospectus?

A: We are delivering this document to you because it is a joint proxy statement being used by both the Amtech and BTU boards of directors to solicit proxies of their respective stockholders in connection with approval of the merger and related matters.

In order to approve the merger and related matters, Amtech has called a special meeting of its stockholders (which we refer to as the “Amtech special meeting”). This document serves as proxy statement for the Amtech special meeting and describes the proposals to be presented at the Amtech special meeting.

In order to approve the merger and related matters, BTU has called a special meeting of its stockholders (which we refer to as the “BTU special meeting”). This document serves as proxy statement for the BTU special meeting and describes the proposals to be presented at the BTU special meeting.

Finally, this document is also a prospectus that is being delivered to BTU stockholders because Amtech is offering shares of its common stock to BTU stockholders in connection with the merger.

This joint proxy statement/prospectus contains important information about the merger and the other proposals being voted on at the meetings. You should read it carefully and in its entirety. The enclosed materials allow you to have your shares voted by proxy without attending your meeting. Your vote is important. We encourage you to submit your proxy as soon as possible.

Q: In addition to the merger proposal, what else are BTU stockholders being asked to vote on?

A: In addition to the merger proposal, BTU is soliciting proxies from its stockholders with respect to two additional proposals; completion of the merger is not conditioned upon approval of these proposals:

- a proposal to adjourn the BTU special meeting, if necessary or appropriate, to solicit additional proxies in favor of the BTU merger proposal; and
- a proposal to approve, on an advisory (non-binding) basis, the compensation that certain executive officers of BTU may receive in connection with the merger pursuant to existing agreements or arrangements with BTU.

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Q: In addition to the merger proposal, what else are Amtech stockholders being asked to vote on?

- A: In addition to the merger proposal, Amtech is soliciting proxies from its stockholders with respect to one additional proposal; completion of the merger is not conditioned upon approval of this proposal:
- a proposal to adjourn the Amtech special meeting, if necessary or appropriate, to solicit additional proxies in favor of the Amtech merger proposal (which we refer to as the “Amtech adjournment proposal”).

Q: What will BTU stockholders receive in the merger?

- A: If the merger is completed, BTU stockholders will receive 0.3291 shares of Amtech common stock (which we refer to as the “exchange ratio”) for each share of BTU common stock held immediately prior to the merger. Amtech will not issue any fractional shares of Amtech common stock in the merger. BTU stockholders who would otherwise be entitled to a fractional share of Amtech common stock upon the completion of the merger will instead receive, in lieu thereof, one whole share of Amtech common stock.

Q: What will Amtech stockholders receive in the merger?

- A: If the merger is completed, Amtech stockholders will not receive any merger consideration and will continue to hold the shares of Amtech common stock that they currently hold. Following the merger, shares of Amtech common stock will continue to be traded on NASDAQ.

Q: How will the merger affect BTU equity awards?

- A: The BTU equity awards will be affected as follows:

Restricted Stock: Each restricted stock unit relating to BTU common stock granted to any employee or director of BTU, any of its subsidiaries or any of its predecessors under any BTU stock plan that is outstanding immediately prior to the effective time of the merger shall, by virtue of the merger and without any action on the part of the holder thereof, become a fully vested and unrestricted share of BTU common stock immediately prior to the effective time of the merger.

Stock Options: Each outstanding option to purchase shares of BTU common stock will be converted into an option to purchase Amtech common stock on the same terms and conditions as were applicable prior to the merger (taking into account any acceleration or vesting by reason of the consummation of the merger and its related transactions), except that (i) the number of shares of Amtech common stock subject to the new option will be equal to the product of (A) the number of shares of BTU common stock subject to the existing option and (B) the exchange ratio (rounding fractional shares down to the nearest whole share), and (ii) the exercise price per share of Amtech common stock under the new option will be equal to the exercise price per share of BTU common stock of the existing option divided by the exchange ratio (rounded up to the nearest whole cent).

Q: Will the value of the merger consideration change between the date of this joint proxy statement/prospectus and the time the merger is completed?

- A: Although the number of shares of Amtech common stock that BTU stockholders will receive is fixed through the exchange ratio, the value of the merger consideration will fluctuate between the date of this joint proxy statement/prospectus and the completion of the merger based upon the market value for Amtech common stock. Any fluctuation in the market price of Amtech common stock after the date of this joint proxy statement/prospectus will change the value of the shares of Amtech common stock that BTU stockholders will receive.

Q: How does BTU’s board of directors recommend that I vote at the special meeting?

- A: BTU’s board of directors unanimously recommends that you vote “FOR” the BTU merger proposal, “FOR” the BTU adjournment proposal, and “FOR” the BTU merger-related compensation proposal.

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Q: How does Amtech’s board of directors recommend that I vote at the special meeting?

A: Amtech’s board of directors unanimously recommends that you vote “FOR” the Amtech merger proposal and “FOR” the Amtech adjournment proposal.

Q: When and where are the meetings?

A: The BTU special meeting will be held at [insert location] on [], 2014, at [] A.M. local time.

The Amtech special meeting will be held at [insert location] on [], 2014, at [] A.M. local time.

Q: What do I need to do now?

A: After you have carefully read this joint proxy statement/prospectus and have decided how you wish to vote your shares, please vote your shares promptly so that your shares are represented and voted at the Amtech special meeting or BTU special meeting, as applicable. If you hold your shares in your name as a stockholder of record, you must complete, sign, date and mail your proxy card in the enclosed postage-paid return envelope as soon as possible. Alternatively, you may vote through the internet or by telephone. Information and applicable deadlines for voting through the internet or by telephone are set forth in the enclosed proxy card instructions. If you hold your shares in “street name” through a bank or broker, you must direct your bank or broker how to vote in accordance with the instructions you have received from your bank or broker. “Street name” stockholders who wish to vote in person at the special meeting or special meeting will need to obtain a legal proxy from the institution that holds their shares.

Q: What constitutes a quorum for the BTU special meeting?

A: The presence at the BTU special meeting, in person or by proxy, of holders of a majority of the issued and outstanding shares of BTU common stock entitled to vote at the special meeting will constitute a quorum for the transaction of business. Abstentions and broker non-votes, if any, will be included in determining the number of shares present at the meeting for the purpose of determining the presence of a quorum.

Q: What constitutes a quorum for the Amtech special meeting?

A: The presence at the Amtech special meeting, in person or by proxy, of holders of a majority of the outstanding shares of Amtech common stock entitled to vote at the special meeting will constitute a quorum for the transaction of business. Abstentions and broker non-votes, if any, will be included in determining the number of shares present at the meeting for the purpose of determining the presence of a quorum.

Q: What is the vote required to approve each proposal?

A: *BTU merger proposal:*

- **Standard:** Approval of the BTU merger proposal requires the affirmative vote of the holders of at least two-thirds of the outstanding shares of BTU common stock entitled to vote on the proposal.
- **Effect of abstentions and broker non-votes:** If you fail to vote, mark “ABSTAIN” on your proxy or fail to instruct your bank or broker with respect to the BTU merger proposal, it will have the same effect as a vote “AGAINST” the proposal.

BTU adjournment proposal:

- **Standard:** The affirmative vote of a majority of votes cast (in person or by proxy) at the BTU special meeting and entitled to vote on such proposal, whether or not a quorum is present.
- **Effect of abstentions and broker non-votes:** If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the BTU special meeting or fail to instruct your bank or broker how to vote with respect to the BTU adjournment proposal or the BTU merger-related compensation proposal, it will have no effect on such proposals.

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BTU merger-related compensation proposal:

- **Standard:** The affirmative vote of a majority of votes cast (in person or by proxy) at the BTU special meeting and entitled to vote on such proposal.
- **Effect of abstentions and broker non-votes:** If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the BTU special meeting or fail to instruct your bank or broker how to vote with respect to the BTU adjournment proposal or the BTU merger-related compensation proposal, it will have no effect on such proposals.

Although BTU is submitting the merger-related compensation proposal for consideration and approval, the approval of such proposal pursuant to the standard set forth above is not a condition to completion of the merger, and the vote with respect to such proposal is advisory only and will not be binding on Amtech or BTU. If the merger is completed, the merger-related compensation may be paid to BTU’s named executive officers to the extent payable in accordance with the terms of the compensation agreements and arrangements even if BTU stockholders fail to approve the advisory vote regarding merger-related compensation.

Q: What is the vote required to approve each proposal at the Amtech special meeting?

A: Amtech merger proposal:

- **Standard:** Approval of the Amtech merger proposal requires the affirmative vote of the holders of at least a majority of the outstanding shares of Amtech common stock entitled to vote on the proposal.
- **Effect of abstentions and broker non-votes:** If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the Amtech special meeting or fail to instruct your bank or broker how to vote with respect to the Amtech merger proposal, it will have the same effect as a vote “AGAINST” the proposal.

Amtech adjournment proposal:

- **Standard:** The Amtech adjournment proposal will be approved if a majority of the votes cast (in person or by proxy) at the Amtech special meeting, and entitled to vote on such proposal, are voted in favor of the Amtech adjournment proposal.
- **Effect of abstentions and broker non-votes:** If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the Amtech special meeting or fail to instruct your bank or broker how to vote with respect to the Amtech adjournment proposal, it will have no effect on such proposal.

Q: What impact will my vote have on the amounts that certain executive officers of BTU may receive in connection with the merger?

A: Certain of BTU’s executive officers are entitled, pursuant to the terms of their compensation arrangements, to receive certain payments in connection with the merger. If the merger is completed, BTU is contractually obligated to make these payments to these executives under certain circumstances. Accordingly, even if the BTU stockholders vote not to approve these payments, the compensation will be payable, subject to the terms and conditions of the arrangements. BTU is seeking your approval of these payments, on an advisory (non-binding) basis, in order to comply with the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and related SEC rules.

Q: Why is my vote important?

A: If you do not vote, it will be more difficult for Amtech or BTU to obtain the necessary quorum to hold their special meetings. In addition, your failure to submit a proxy or vote in person, or failure to instruct your bank or broker how to vote, or abstention will have the same effect as a vote “AGAINST” adoption of the merger agreement. The merger agreement must be adopted by the affirmative vote of at least a majority of the outstanding shares of Amtech common stock entitled to vote on the Amtech merger proposal and by the affirmative vote of at least two-thirds of the outstanding shares of BTU common stock entitled to vote on the BTU merger proposal. The Amtech board of directors and the BTU board of directors unanimously recommend that you vote “FOR” the Amtech merger proposal and the BTU merger proposal, respectively.

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Q: If my shares of common stock are held in “street name” by my bank or broker, will my bank or broker automatically vote my shares for me?

A: *Amtech stockholders:* No. Your bank or broker cannot vote your shares without instructions from you. You should instruct your bank or broker how to vote your shares in accordance with the instructions provided to you. Please check the voting form used by your bank or broker.

BTU stockholders: No. Your bank or broker cannot vote your shares without instructions from you. You should instruct your bank or broker how to vote your shares in accordance with the instructions provided to you. Please check the voting form used by your bank or broker.

Q: Can I attend the meeting and vote my shares in person?

A: Yes. All stockholders of Amtech and BTU, including stockholders of record and stockholders who hold their shares through banks, brokers, nominees or any other holder of record, are invited to attend their respective meetings. Holders of record of Amtech and BTU common stock can vote in person at the Amtech special meeting and BTU special meeting, respectively. If you are not a stockholder of record, you must obtain a proxy card, executed in your favor, from the record holder of your shares, such as a broker, bank or other nominee, to be able to vote in person at the meetings. If you plan to attend your meeting, you must hold your shares in your own name or have a letter from the record holder of your shares confirming your ownership. In addition, BTU stockholders who plan to attend the BTU special meeting must bring a government issued proof of identification that includes a photo in order to be admitted. Amtech and BTU reserve the right to refuse admittance to anyone without proper proof of share ownership or, in the case of BTU, without proper photo identification. The use of cameras, sound recording equipment, communications devices or any similar equipment during the Amtech special meeting or BTU special meeting is prohibited without Amtech’s or BTU’s express written consent, respectively.

Q: Can I change my vote?

A: *Amtech stockholders:* Yes. If you are a holder of record of Amtech common stock, you may revoke any proxy at any time before it is voted by (1) signing and returning a proxy card with a later date, (2) delivering a written revocation letter to Amtech’s corporate secretary, (3) attending the special meeting in person, notifying the corporate secretary and voting by ballot at the special meeting, or (4) voting by telephone or the internet at a later time. Attendance at the special meeting will not automatically revoke your proxy. A revocation or later-dated proxy received by Amtech after the vote will not affect the vote. Amtech’s corporate secretary’s mailing address is: Corporate Secretary, Amtech Systems, Inc., 131 South Clark Drive, Tempe, Arizona 85281. If you hold your shares in “street name” through a bank or broker, you should contact your bank or broker to revoke your proxy.

BTU stockholders: Yes. If you are a holder of record of BTU common stock, you may revoke any proxy at any time before it is voted by (1) signing and returning a proxy card with a later date, (2) delivering a written revocation letter to BTU’s corporate secretary, (3) attending the special meeting in person, notifying the corporate secretary and voting by ballot at the special meeting, or (4) voting by telephone or the internet at a later time. Attendance at the special meeting by itself will not automatically revoke your proxy. A revocation or later-dated proxy received by BTU after the vote will not affect the vote. BTU’s corporate secretary’s mailing address is: Secretary, BTU International, Inc., 23 Esquire Road, North Billerica, Massachusetts 01862. If you hold your shares in “street name” through a bank or broker, you should contact your bank or broker to revoke your proxy.

Q: Will Amtech be required to submit the proposal to adopt the merger agreement to its stockholders even if Amtech’s board of directors has withdrawn, modified or qualified its recommendation?

A: Yes. Unless the merger agreement is terminated before the Amtech special meeting, Amtech is required to submit the proposal to adopt the merger agreement to its stockholders even if Amtech’s board of directors has withdrawn or modified its recommendation.

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Q: Will BTU be required to submit the proposal to adopt the merger agreement to its stockholders even if BTU’s board of directors has withdrawn, modified or qualified its recommendation?

A: Yes. Unless the merger agreement is terminated before the BTU special meeting, BTU is required to submit the proposal to adopt the merger agreement to its stockholders even if BTU’s board of directors has withdrawn or modified its recommendation.

Q: What are the U.S. federal income tax consequences of the merger to BTU stockholders?

A: The merger is intended to qualify as a “reorganization” within the meaning of Section 368(a) of the Code, and holders of BTU common stock are not expected to recognize any gain or loss for U.S. federal income tax purposes on the exchange of shares of BTU common stock for shares of Amtech common stock in the merger.

For further information, see “Material U.S. Federal Income Tax Consequences of the Merger” beginning on page 147.

The U.S. federal income tax consequences described above may not apply to all holders of BTU common stock. Your tax consequences will depend on your individual situation. Accordingly, we strongly urge you to consult your independent tax advisor for a full understanding of the particular tax consequences of the merger to you.

Q: Are BTU stockholders entitled to dissenters’ rights?

A: No, BTU stockholders are not expected to be entitled to dissenters’ rights. For further information, see “The Merger—Dissenters’ Rights in the Merger” beginning on page 133.

Q: If I am a BTU stockholder, should I send in my BTU stock certificates now?

A: No. Please do not send in your BTU stock certificates with your proxy. After the merger, an exchange agent will send you instructions for exchanging BTU stock certificates for the merger consideration. See “The Merger Agreement—Conversion of Shares; Exchange of Certificates” beginning on page 135.

Q: What should I do if I hold my shares of BTU common stock in book-entry form?

A: You are not required to take any special additional actions if your shares of BTU common stock are held in book-entry form. After the completion of the merger, shares of BTU common stock held in book-entry form automatically will be exchanged for the merger consideration.

Q: Whom may I contact if I cannot locate my BTU stock certificate(s)?

A: If you are unable to locate your original BTU stock certificate(s), you should contact Computershare, BTU’s transfer agent, at (800) 962-4284.

Q: What should I do if I receive more than one set of voting materials?

A: Amtech stockholders and BTU stockholders may receive more than one set of voting materials, including multiple copies of this joint proxy statement/prospectus and multiple proxy cards or voting instruction cards. For example, if you hold shares of Amtech and/or BTU common stock in more than one brokerage account, you will receive a separate voting instruction card for each brokerage account in which you hold such shares. If you are a holder of record of Amtech common stock or BTU common stock and your shares are registered in more than one name, you will receive more than one proxy card. In addition, if you are a holder of both Amtech common stock and BTU common stock, you will receive one or more separate proxy cards or voting instruction cards for each company. Please complete, sign, date and return each proxy card and voting instruction card that you receive or otherwise follow the voting instructions set forth in this joint proxy statement/prospectus to ensure that you vote every share of Amtech common stock and/or BTU common stock that you own.

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Q: When do you expect to complete the merger?

A: Amtech and BTU expect to complete the merger in the first calendar quarter of 2015. However, neither Amtech nor BTU can assure you of when or if the merger will be completed. Amtech and BTU must first obtain the approval of Amtech stockholders and BTU stockholders for the merger, as well as satisfy certain other closing conditions.

Q: What happens if the merger is not completed?

A: If the merger is not completed, holders of BTU common stock will not receive any consideration for their shares in connection with the merger. Instead, BTU will remain an independent public company and its common stock will continue to be listed and traded on NASDAQ. In addition, if the merger agreement is terminated in certain circumstances, a termination fee or expense reimbursement fee may be required to be paid by either Amtech or BTU. See “The Merger Agreement—Termination Fee” beginning on page 142 for a complete discussion of the circumstances under which termination fees will be required to be paid.

Q: Whom should I call with questions?

A: *Amtech stockholders:* If you have any questions concerning the merger or this joint proxy statement/prospectus, would like additional copies of this joint proxy statement/prospectus or need help voting your shares of Amtech common stock, please contact Amtech’s proxy solicitor, Georgeson, Inc., at (866) 647-8872.

BTU stockholders: If you have any questions concerning the merger or this joint proxy statement/prospectus, would like additional copies of this joint proxy statement/prospectus or need help voting your shares of BTU common stock, please contact BTU’s proxy solicitor, Georgeson, Inc., at (866) 821-2570.

SUMMARY

This summary highlights selected information from this joint proxy statement/prospectus. It may not contain all of the information that is important to you. We urge you to read carefully the entire joint proxy statement/prospectus, including the annexes, and the other documents to which we refer in order to fully understand the merger. See “Where You Can Find More Information” beginning on page 163. Each item in this summary refers to the page of this joint proxy statement/prospectus on which that subject is discussed in more detail.

In the Merger, BTU Common Stockholders Will Receive Shares of Amtech Common Stock (page 100)

Amtech and BTU are proposing a strategic merger. If the merger is completed, BTU common stockholders will receive 0.3291 shares of Amtech common stock for each share of BTU common stock they hold immediately prior to the merger. Amtech will not issue any fractional shares of Amtech common stock in the merger. BTU stockholders who would otherwise be entitled to a fraction of a share of Amtech common stock upon the completion of the merger will instead receive, in lieu thereof, one whole share of Amtech common stock. *For example, if you hold 100 shares of BTU common stock, you will receive 32 shares of Amtech common stock plus an additional whole share of Amtech common stock instead of the 0.91 shares of Amtech common stock that you otherwise would have received (100 shares × 0.3291 = 32.91 shares).*

Amtech common stock is listed on NASDAQ under the symbol “ASYS”, and BTU common stock is listed on NASDAQ under the symbol “BTUI”. The following table shows the closing sale prices of Amtech common stock and BTU common stock as reported on NASDAQ on October 21, 2014, the last full trading day before the public announcement of the merger agreement, and on [], 2014, the last practicable trading day before the date of this joint proxy statement/prospectus. This table also shows the implied value of the merger consideration payable for each share of BTU common stock, which we calculated by multiplying the closing price of Amtech common stock on those dates by the exchange ratio of 0.3291.

	Amtech Common Stock	BTU Common Stock	Implied Value of One Share of BTU Common Stock
October 21, 2014	\$ 10.13	\$ 3.20	\$ 3.33
[], 2014	\$ []	\$ []	\$ []

The merger agreement governs the merger. The merger agreement is included in this joint proxy statement/prospectus as Annex A. All descriptions in this summary and elsewhere in this joint proxy statement/prospectus of the terms and conditions of the merger are qualified by reference to the merger agreement. Please read the merger agreement carefully for a more complete understanding of the merger.

Amtech’s Board of Directors Unanimously Recommends that Amtech Stockholders Vote “FOR” the Adoption of the Merger Agreement and the Other Proposals Presented at the Amtech Special Meeting (page 117)

Amtech’s board of directors has determined that the merger, the merger agreement and the transactions contemplated by the merger agreement are advisable and in the best interests of Amtech and its stockholders and has unanimously approved the merger agreement. Amtech’s board of directors unanimously recommends that Amtech stockholders vote “FOR” the adoption of the merger agreement and “FOR” the other proposals presented at the Amtech special meeting. For the factors considered by Amtech’s board of directors in reaching its decision to approve the merger agreement, see “The Merger—Amtech’s Reasons for the Merger; Recommendation of Amtech’s Board of Directors” beginning on page 117.

BTU’s Board of Directors Unanimously Recommends that BTU Stockholders Vote “FOR” the Adoption of the Merger Agreement and the Other Proposals Presented at the BTU Special Meeting (page 106)

BTU’s board of directors has determined that the merger, the merger agreement and the transactions contemplated by the merger agreement are advisable and in the best interests of BTU and its stockholders and has unanimously approved the merger

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agreement. BTU's board of directors unanimously recommends that BTU stockholders vote "FOR" the adoption of the merger agreement and "FOR" the other proposals presented at the BTU special meeting. For the factors considered by BTU's board of directors in reaching its decision to approve the merger agreement, see "The Merger—BTU's Reasons for the Merger; Recommendation of BTU's Board of Directors" beginning on page 106.

Opinion of Amtech's Financial Advisor (page 118 and Annex B)

Opinion of Stifel, Nicolaus & Company

In connection with its consideration of the merger, on October 20, 2014, the Amtech board of directors received from Stifel, Nicolaus & Company, Amtech's financial advisor (which we refer to as "Stifel"), its written opinion to the effect that, as of such date and subject to and based on the assumptions made, procedures followed, matters considered, limitations of the review undertaken and qualifications set forth in its opinion, the exchange ratio in the merger was fair, from a financial point of view, to the stockholders of Amtech. The full text of Stifel's written opinion is attached as Annex B to this joint proxy statement/prospectus. You should read the entire opinion for a discussion of, among other things, the assumptions made, procedures followed, matters considered and limitations on the review undertaken by Stifel in rendering its opinion. **Stifel provided its opinion to Amtech's board of directors (in its capacity as such) for the benefit and use of Amtech's board of directors in connection with and for purposes of its evaluation of the exchange ratio provided for in the merger from a financial point of view. Stifel's opinion does not address any other aspect of the merger and no opinion or view was expressed as to the relative merits of the merger in comparison to other strategies or transactions that might be available to Amtech or in which Amtech might engage or as to the underlying business decision of Amtech to proceed with or effect the merger. Stifel's opinion does not address any other aspect of the merger and does not constitute a recommendation to any stockholder as to how to vote or act in connection with the proposed merger or any related matter. Stifel's written opinion is addressed to the Amtech board of directors, is directed only to the exchange ratio in the merger and does not constitute a recommendation to any Amtech stockholder as to how such stockholder should vote with respect to the merger or any other matter.**

For further information, see "The Merger—Opinion of Stifel" beginning on page 118.

Opinion of BTU's Financial Advisor (page 110 and Annex C)

Opinion of Needham & Company, LLC

In connection with the merger, the BTU board of directors received from Needham & Company, LLC (which we refer to as "Needham & Company"), BTU's financial advisor, its oral opinion, which opinion was confirmed by delivery of a written opinion, dated October 21, 2014, that, as of such date and based upon and subject to the assumptions and other matters described in the written opinion, the exchange ratio of 0.3291 pursuant to the merger agreement was fair, from a financial point of view, to the holders of BTU common stock (other than Amtech or BTU or any of their respective subsidiaries). **The complete text of Needham & Company's opinion, which sets forth the assumptions made, procedures followed, matters considered, and qualifications and limitations on and scope of the review undertaken by Needham & Company in connection with the opinion, is attached to this joint proxy statement/prospectus as Annex C and is incorporated by reference in this joint proxy statement/prospectus. Needham & Company provided its opinion to the BTU board of directors for the information and assistance of the BTU board of directors in connection with and for purposes of its evaluation of the transactions contemplated by the merger agreement. Needham & Company's opinion does not address any other aspect of the merger, or any related transaction, and does not constitute a recommendation to any stockholder of BTU as to how that stockholder should vote with respect to the merger or act upon any matter relating to the merger.**

For further information, see "The Merger—Opinion of Needham & Company" beginning on page 110.

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What Holders of BTU Stock Options and Other Equity-Based Awards Will Receive (page 135)

Stock Options. At the effective time of the merger, each outstanding option to purchase shares of BTU common stock will be converted into an option to purchase Amtech common stock on the same terms and conditions as were applicable prior to the merger (taking into account any acceleration or vesting by reason of the consummation of the merger and its related transactions), except that (i) the number of shares of Amtech common stock subject to the new option will be equal to the product of (A) the number of shares of BTU common stock subject to the existing option and (B) the exchange ratio (rounding fractional shares down to the nearest whole share), and (ii) the exercise price per share of Amtech common stock under the new option will be equal to the exercise price per share of BTU common stock of the existing option divided by the exchange ratio (rounded up to the nearest whole cent).

Restricted Stock. Each restricted stock unit relating to BTU common stock granted to any employee or director of BTU, any of its subsidiaries or any of its predecessors under any BTU stock plan that is outstanding immediately prior to the effective time of the merger shall, by virtue of the merger and without any action on the part of the holder thereof, become a fully vested and unrestricted share of BTU common stock immediately prior to the effective time of the merger.

Amtech Will Hold its Special Meeting on [], 2014 (page 44)

The special meeting of Amtech stockholders will be held on [], 2014, at [] A.M. local time, at [insert location]. At the special meeting, Amtech stockholders will be asked to:

- approve the Amtech merger proposal; and
- approve the Amtech adjournment proposal

Only holders of record at the close of business on December 16, 2014 will be entitled to vote at the special meeting. Each share of Amtech common stock is entitled to one vote on each proposal to be considered at the Amtech special meeting. As of the record date, there were [] shares of Amtech common stock entitled to vote at the special meeting. As of the record date, the directors and executive officers of Amtech and their affiliates beneficially owned and were entitled to vote approximately [] shares of Amtech common stock representing approximately []% of the shares of Amtech common stock outstanding on that date.

BTU Will Hold its Special Meeting on [], 2014 (page 38)

The special meeting of BTU stockholders will be held on [], 2014, at [] A.M. local time, at [insert location]. At the special meeting, BTU stockholders will be asked to:

- approve the BTU merger proposal;
- approve the BTU adjournment proposal; and
- approve the BTU merger-related compensation proposal.

Only holders of record at the close of business on [] will be entitled to vote at the special meeting. Each share of BTU common stock is entitled to one vote on each proposal to be considered at the BTU special meeting. As of the record date, there were [] shares of BTU common stock entitled to vote at the special meeting. As of the record date, the directors and executive officers of BTU and their affiliates beneficially owned and were entitled to vote approximately [] shares of BTU common stock representing approximately []% of the shares of BTU common stock outstanding on that date.

Required Vote; Treatment of Abstentions and Failure to Vote (pages 39 and 45)

Amtech merger proposal:

- Standard: The affirmative vote of a majority of the outstanding shares of Amtech common stock entitled to vote on the proposal.

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- Effect of abstentions and broker non-votes: If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the Amtech special meeting or fail to instruct your bank or broker how to vote with respect to the Amtech merger proposal, it will have the same effect as a vote “AGAINST” the proposal.

Amtech adjournment proposal:

- Standard: The affirmative vote of a majority of votes cast (in person or by proxy) at the Amtech special meeting and entitled to vote on such proposals.
- Effect of abstentions and broker non-votes: If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the Amtech special meeting or fail to instruct your bank or broker how to vote with respect to the Amtech adjournment proposal, it will have no effect on such proposal.

BTU merger proposal:

- Standard: Approval of the BTU merger proposal requires the affirmative vote of the holders of at least two-thirds of the outstanding shares of BTU common stock entitled to vote on the proposal.
- Effect of abstentions and broker non-votes: If you fail to vote, mark “ABSTAIN” on your proxy or fail to instruct your bank or broker with respect to the Amtech merger proposal, it will have the same effect as a vote “AGAINST” the proposal.

BTU adjournment proposal:

- Standard: The affirmative vote of a majority of votes cast (in person or by proxy) at the BTU special meeting and entitled to vote on such proposal, whether or not a quorum is present.
- Effect of abstentions and broker non-votes: If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the BTU special meeting or fail to instruct your bank or broker how to vote with respect to the BTU adjournment proposal or the BTU merger-related compensation proposal, it will have no effect on such proposals.

BTU merger-related compensation proposal:

- Standard: The affirmative vote of a majority of votes cast (in person or by proxy) at the BTU special meeting and entitled to vote on such proposal.
- Effect of abstentions and broker non-votes: If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the BTU special meeting or fail to instruct your bank or broker how to vote with respect to the BTU adjournment proposal or the BTU merger-related compensation proposal, it will have no effect on such proposals.

Although BTU is submitting the merger-related compensation proposal for consideration and approval, the approval of such proposal pursuant to the standard set forth above is not a condition to completion of the merger, and the vote with respect to such proposal is advisory only and will not be binding on Amtech or BTU. If the merger is completed, the merger-related compensation may be paid to BTU’s named executive officers to the extent payable in accordance with the terms of the compensation agreements and arrangements even if BTU stockholders fail to approve the advisory vote regarding merger-related compensation.

The Merger Will Be Tax-Free to Holders of BTU Common Stock as to the Shares of Amtech Common Stock They Receive (page 147)

The merger will be treated as a “reorganization” within the meaning of Section 368(a) of the Internal Revenue Code, and it is a condition to the respective obligations of each of Amtech and BTU to complete the merger that it receives a legal opinion to that effect. Subject to the limitations and qualifications described in “Material U.S. Federal Income Tax Consequences of the Merger,” the merger generally will be tax-free to a holder of BTU common stock for U.S. federal income tax purposes as to the shares of Amtech common stock he or she receives in the merger.

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For further information, see “Material U.S. Federal Income Tax Consequences of the Merger” beginning on page 147.

The U.S. federal income tax consequences described above may not apply to all holders of BTU common stock. Your tax consequences will depend on your individual situation. Accordingly, we strongly urge you to consult your independent tax advisor for a full understanding of the particular tax consequences of the merger to you.

BTU’s Officers and Directors Have Financial Interests in the Merger that Differ from Your Interests (page 126)

BTU stockholders should be aware that some of BTU’s directors and executive officers have interests in the merger and have arrangements that are different from, or in addition to, those of BTU stockholders generally. BTU’s board of directors were aware of these interests and considered these interests, among other matters, when making its decision to approve the merger agreement, and in recommending that BTU stockholders vote in favor of adopting the merger agreement.

These interests include the following:

- Mr. van der Wansem has entered into a one-year employment agreement with Amtech, which will become effective if the merger is consummated. He has also entered into a two-year consulting agreement with Amtech, which will become effective following the completion of the employment agreement. Amtech has also agreed to nominate Mr. van der Wansem to its board of directors for a period of three years following the consummation of the merger.
- Mr. Tallian, who is expected to continue employment with Amtech following the merger, has amended his employment agreement with BTU, which will become effective if the merger is consummated.
- Messrs. van der Wansem, Tallian, and McCaffrey will receive, pursuant to their employment agreements with BTU, certain merger-related compensation if the merger is consummated.

For further information, see “The Merger—Interests of BTU’s Directors and Executive Officers in the Merger” beginning on page 126.

BTU Stockholders Are Not Expected To Be Entitled To Assert Dissenters’ Rights (page 133)

Under the Delaware General Corporation Law (which we refer to as the “DGCL”), which is the law under which BTU is incorporated, the holders of BTU common stock will not be entitled to any appraisal rights or dissenters’ rights in connection with the merger if, on the record date for the BTU special meeting, their shares are listed on a national securities exchange. BTU common stock is currently listed on NASDAQ, a national securities exchange, and is expected to continue to be so listed on the record date for the BTU special meeting. For more information, see “The Merger—Dissenters’ Rights in the Merger” beginning on page 133.

Conditions that Must Be Satisfied or Waived for the Merger To Occur (page 137)

Currently, Amtech and BTU expect to complete the merger in the first calendar quarter of 2015. As more fully described in this joint proxy statement/prospectus and in the merger agreement, the completion of the merger depends on a number of conditions being satisfied or, where legally permissible, waived. These conditions include (1) adoption of the merger agreement by Amtech’s stockholders and by BTU’s stockholders, (2) authorization for listing on NASDAQ of the shares of Amtech common stock to be issued in the merger, (3) effectiveness of the registration statement of which this joint proxy statement/prospectus is a part, (4) the absence of any order, injunction or other legal restraint preventing the completion of the merger or making the completion of the merger illegal, (5) subject to the materiality standards provided in the merger agreement, the accuracy of the representations and warranties of Amtech and BTU and no material adverse change with respect to the respective businesses having occurred, (6) performance in all material respects by each of Amtech and BTU of its obligations under the merger agreement and (7) receipt by each of Amtech and BTU of an opinion from its counsel as to certain tax matters.

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Neither Amtech nor BTU can be certain when, or if, the conditions to the merger will be satisfied or waived, or that the merger will be completed.

Termination of the Merger Agreement (page 142)

The merger agreement can be terminated at any time prior to completion of the merger in the following circumstances:

- by mutual written consent of Amtech and BTU;
- by either the board of directors of Amtech or the board of directors of BTU if the merger has not been consummated on or before 120 days following the date this joint proxy statement/prospectus is filed with the SEC (the “outside date”), provided, that the party seeking to terminate the merger agreement hasn’t materially breached any of its obligations in any manner that proximately causes or results in the failure of the merger to have been consummated by the outside date;
- by either the board of directors of Amtech or the board of directors of BTU if any governmental entity shall have issued a final and nonappealable order permanently enjoining, restraining, or otherwise prohibiting the consummation of the transactions contemplated by the merger agreement, provided, however, that the right to terminate the merger agreement shall not be available to any party whose breach of any representation, warranty, covenant, or agreement set forth in the merger agreement is the cause of, or results in, the issuance, promulgation, enforcement or entry of any such order;
- by either the board of directors of Amtech or the board of directors of BTU if the Amtech merger proposal shall not have been approved by the Amtech stockholders or the BTU merger proposal shall not have been approved by the BTU stockholders;
- by Amtech, if BTU or the board of directors of BTU (A) (1) fails to recommend in this joint proxy statement/prospectus that the stockholders of BTU adopt the merger agreement, or withdraws, amends, modifies or materially qualifies such recommendation in a manner adverse to Amtech or Merger Sub, (2) recommends or endorses an alternative takeover proposal, (3) fails to recommend against acceptance of any tender offer or exchange offer for the shares of BTU common stock constituting a takeover proposal within ten business days after the commencement of such offer, (4) makes any public statement inconsistent with the BTU board recommendation in favor of the merger; or (5) resolves or agrees to take any of the foregoing actions; (B) permits BTU to enter into, or publicly announces its intention to enter into, any agreement or any contract relating to any takeover proposal; (C) fails to reaffirm (publicly, if requested by Amtech) its recommendation in favor of the merger within ten business days after the date any takeover proposal (or material modification thereto) is first publicly disclosed; (D) receives a tender offer or exchange offer for outstanding BTU common stock by a person unaffiliated with Amtech and does not send to its stockholders, within ten business days after such tender or exchange offer is first disclosed, a statement reaffirming the BTU board recommendation in favor of the merger with Amtech and recommending that BTU stockholders reject such tender or exchange offer; (E) publicly announces its intentions to do any of the foregoing; or (F) if BTU breaches any representation, warranty, covenant, or agreement such that the conditions to closing the merger would not be satisfied, and such breach is incapable of being cured by the outside date; provided, that Amtech gives BTU at least 30 days written notice prior to terminating the merger agreement, and provided, further, that Amtech cannot terminate the merger agreement if Amtech is then in material breach of any of its representations, warranties, covenants, or agreements; or
- by BTU, if (A) prior to the receipt of the BTU stockholder approval, the BTU board of directors authorizes BTU to enter into any agreement or contract relating to a superior proposal; (B) Amtech or Merger Sub breaches any representation, warranty, covenant, or agreement such that the conditions to closing the merger would not be satisfied, and such breach is incapable of being cured by the outside date; provided, that BTU gives Amtech at least 30 days written notice prior to terminating the merger agreement, and provided, further, that BTU cannot terminate the merger agreement if BTU is then in material breach of any of its representations, warranties, covenants, or agreements; or (C) Amtech fails to recommend in this joint proxy statement/prospectus that the stockholders of Amtech adopt the merger agreement, or withdraws, amends, modifies or materially qualifies such recommendation in a manner adverse to BTU, or makes any public statement inconsistent with the Amtech board recommendation in favor of the merger, or resolves or agrees to take any of the foregoing actions.

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Termination Fee (page 142)

If the merger agreement is terminated under certain circumstances, including circumstances involving alternative acquisition proposals and changes in the recommendation of Amtech's or BTU's respective boards of directors, Amtech or BTU may be required to pay to the other party a termination fee equal to \$1,320,000. These termination fees could discourage other companies from seeking to acquire or merge with Amtech or BTU.

Employment and Services Agreements (pages 145)

In connection with the execution of the merger agreement, Amtech entered into a one-year employment agreement with Mr. van der Wansem, to be effective as of and subject to the consummation of the merger, and a two-year consulting agreement with Mr. van der Wansem, which will become effective following the termination of the employment agreement. In addition, in connection with the execution of the merger agreement, Mr. Tallian entered into an amendment to his employment agreement, to be effective as of and subject to the consummation of the merger. Each agreement sets forth the terms and conditions of each individual's employment or consulting relationship following the consummation of the merger.

For more detail on the terms of these employment agreements or agreements for services, "The Merger—Interests of BTU's Directors and Officers in the Merger" beginning on page 126.

The Rights of BTU Stockholders Will Change as a Result of the Merger (page 151)

The rights of BTU stockholders will change as a result of the merger due to differences in Amtech's and BTU's governing documents and states of incorporation. The rights of BTU stockholders are governed by Delaware law and by BTU's certificate of incorporation and bylaws, each as amended to date. Upon the completion of the merger, BTU stockholders will become stockholders of Amtech and the rights of BTU stockholders will therefore be governed by Arizona law and Amtech's amended and restated articles of incorporation and amended and restated bylaws.

See "Comparison of Stockholders' Rights" beginning on page 151 for a description of the material differences in stockholders' rights under each of the Amtech and BTU governing documents.

Information About the Companies (page 48)

Amtech Systems, Inc.

Amtech Systems Inc. is an Arizona corporation that provides thermal processing systems, including related automation, parts and services for the solar / photovoltaic, semiconductor, silicon wafer and microelectromechanical systems industries and also offer PECVD (plasma-enhanced chemical vapor deposition) equipment to the solar industry. Amtech also produces consumables and machinery for lapping (fine abrading) and polishing of materials, such as sapphire substrates, optical components, silicon wafers, numerous types of crystal materials, ceramics and metal components. Current growth markets include LED lighting and mobile devices. Each of these market segments utilizes sapphire substrates manufactured using lapping and polishing technologies offered under Amtech's PR Hoffman brand name.

Amtech's stock is traded on NASDAQ under the symbol "ASYS".

Amtech's principal office is located at 131 South Clark Drive Tempe, Arizona 85281. Additional information about Amtech and its subsidiaries is included in documents incorporated by reference in this joint proxy statement/prospectus. See "Where You Can Find More Information," beginning on page 163.

BTU International, Inc.

BTU International, Inc., which was founded in 1950, was incorporated as a Delaware corporation in 1981 and is headquartered in North Billerica, Massachusetts. BTU operates as a single business segment called Thermal Processing Capital

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Equipment. Its business consists of the designing, manufacturing, selling and servicing of thermal processing equipment and related process controls for use in the electronics, alternative energy, automotive and other industries. This includes the supply of solder reflow systems used for surface mount applications in printed circuit board assembly. Thermal processing equipment is used in: low temperature curing/encapsulation; hybrid integrated circuit manufacturing; integrated circuit packaging and sealing; and processing multi-chip modules. In addition, the equipment is used for solar cell processing, sintering nuclear fuel for commercial power generation, as well as brazing and the sintering of ceramics and powdered metals, and the deposition of precise thin film coatings. BTU's customers are multinational original equipment manufacturers and contract manufacturing companies.

BTU's stock is traded on NASDAQ under the symbol "BTUI".

BTU's principal office is located at 23 Esquire Road, North Billerica, Massachusetts 01862 where BTU owns a 150,000 square foot facility. BTU also operates an approximately 45,000 square foot leased manufacturing, engineering, sales and service facility in Shanghai, China. In England, BTU leases a facility for their European and Near East sales and service operations. In the Asia Pacific region, they lease sales and service offices in Singapore and Malaysia. See "Where You Can Find More Information," beginning on page 163.

Litigation Relating to the Merger (page 133)

On November 4, 2014, a putative stockholder class action complaint was filed, purportedly on behalf of BTU's public stockholders, in the Court of Chancery of the State of Delaware against BTU, members of the BTU Board, Amtech, and Merger Sub. The complaint generally alleges, among other things, that the members of BTU's board of directors breached their fiduciary duties owed to BTU's public stockholders by causing BTU to enter into the merger agreement and by approving the merger, and that Amtech and Merger Sub aided and abetted such alleged breaches of fiduciary duties. In addition, the complaint alleges that the merger agreement improperly favors Amtech and unduly restricts BTU's ability to negotiate with other potential bidders. The complaint generally seeks, among other things, declaratory and injunctive relief concerning the alleged fiduciary breaches, injunctive relief prohibiting Amtech, Merger Sub, and BTU from consummating the Merger, other forms of equitable relief, and compensatory damages. Both Amtech and BTU believe that the claims are without merit and each intends to vigorously defend itself (and its directors) against the litigation.

On November 17, 2014, a separate putative stockholder class action complaint was filed, also purportedly on behalf of BTU's public stockholders, in the Court of Chancery of the State of Delaware against BTU, members of the BTU board, Amtech and Merger Sub. The complaint generally alleges, among other things, that the members of BTU's board of directors breached their fiduciary duties owed to BTU's public stockholders by failing to engage in a competitive sale and bidding process, and that Amtech and Merger Sub aided and abetted such alleged breaches of fiduciary duties. The complaint further alleges that these fiduciary breaches gave Amtech an unfair advantage on account of the BTU board's failing to solicit other potential acquirers. The complaint generally seeks, among other things, injunctive relief prohibiting the defendants from consummating the merger, compensatory damages for alleged breaches of fiduciary duties, and other forms of equitable relief. Both Amtech and BTU believe that the claims are without merit and each intends to vigorously defend itself (and its directors) against the litigation.

Risk Factors (page 29)

You should consider all the information contained in or incorporated by reference into this joint proxy statement/prospectus in deciding how to vote for the proposals presented in the joint proxy statement/prospectus. In particular, you should consider the factors described under "Risk Factors" beginning on page 29.

[Table of Contents](#)**SELECTED CONSOLIDATED HISTORICAL FINANCIAL DATA OF AMTECH**

The following selected consolidated financial information for the fiscal years ended September 30, 2010 through September 30, 2014 is derived from audited financial statements of Amtech. You should not assume the results of operations for any past periods indicate results for any future period. You should read this information in conjunction with Amtech's consolidated financial statements and related notes thereto included in Amtech's Annual Report on Form 10-K for the fiscal year ended September 30, 2014 which is incorporated by reference into this joint proxy statement/prospectus. See "Where You Can Find More Information" beginning on page 163.

	As of and for the years ended September 30,				
	2014	2013	2012	2011	2010
	(in thousands, except per share data)				
Operating Data:					
Net revenue	\$ 56,501	\$ 34,798	\$ 81,539	\$246,705	\$120,019
Gross profit	\$ 11,626	\$ 4,313	\$ 9,193	\$ 90,657	\$ 42,712
Operating income (loss)(1)	\$(13,089)	\$(19,994)	\$(32,984)	\$ 38,279	\$ 15,909
Net income (loss) attributable to Amtech Systems, Inc.(2)	\$(13,047)	\$(20,069)	\$(23,031)	\$ 22,882	\$ 9,563
Earnings (loss) per share attributable to Amtech Systems, Inc.:					
Basic earnings (loss) per share	\$ (1.34)	\$ (2.11)	\$ (2.43)	\$ 2.41	\$ 1.06
Diluted earnings (loss) per share	\$ (1.34)	\$ (2.11)	\$ (2.43)	\$ 2.34	\$ 1.04
Order backlog	\$ 28,522	\$ 26,766	\$ 18,703	\$ 85,892	\$ 94,427
Balance Sheet Data:					
Cash and cash equivalents	\$ 27,367	\$ 37,197	\$ 46,726	\$ 67,382	\$ 56,764
Working capital	\$ 32,289	\$ 42,861	\$ 58,832	\$ 89,797	\$ 65,638
Total assets	\$ 89,904	\$110,947	\$129,022	\$205,865	\$136,101
Total current liabilities	\$ 33,136	\$ 41,334	\$ 42,611	\$ 80,794	\$ 50,816
Total equity	\$ 53,588	\$ 66,803	\$ 84,051	\$122,331	\$ 84,243

- (1) Includes \$0.3 million and \$3.7 million of expense related to inventory write-downs in fiscal 2014 and 2013, respectively. Includes \$12.8 million of expense related to inventory write-downs and loss contracts for inventory purchase commitments, and \$5.4 million of impairment charges in fiscal 2012. Includes \$2.9 million of expense related to reacquired shares in fiscal 2011.
- (2) Includes \$1.7 million, \$2.0 million, \$5.6 million and \$0.9 million of losses in fiscal 2014, 2013, 2012 and 2011, respectively, resulting from the 55% controlling interest in Kingstone acquired February 18, 2011.

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SELECTED CONSOLIDATED HISTORICAL FINANCIAL DATA OF BTU

The following selected consolidated financial information for the calendar years ended December 31, 2009 through December 31, 2013 is derived from audited financial statements of BTU. The financial information as of September 28, 2014 and September 29, 2013 and for the nine months ended September 28, 2014 and September 29, 2013 are derived from unaudited financial statements and, in the opinion of BTU's management, reflects all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of this data for those dates. The results of operations for the nine months ended September 28, 2014 are not necessarily indicative of the results that may be expected for the entire year ending December 31, 2014. You should not assume the results of operations for any past periods indicate results for any future period. You should read this information in conjunction with BTU's consolidated financial statements and related notes thereto for the years ended December 31, 2013, 2012 and 2011 and the nine months ended September 28, 2014 and September 29, 2013, included elsewhere in this joint proxy statement/prospectus.

	Nine Months Ended September 28, 2014	Nine Months Ended September 29, 2013	Years Ended December 31,				
			2013	2012	2011	2010	2009
Consolidated Statement of Operations Data:							
(In thousands, except per share data)							
Net sales	\$ 44,037	\$ 36,761	\$ 47,754	\$ 58,089	\$76,128	\$81,607	\$ 45,086
Cost of goods sold	26,925	25,103	33,048	41,617	47,542	47,851	32,706
Gross profit	17,112	11,658	14,706	16,472	28,586	33,756	12,380
Selling, general and administrative	14,622	15,237	19,786	20,965	22,721	23,063	18,957
Research, development and engineering	3,179	3,427	4,604	5,450	7,056	6,575	6,882
Restructuring	—	—	—	424	401	—	—
Operating income (loss)	(689)	(7,006)	(9,684)	(10,367)	(1,592)	4,118	(13,459)
Interest income	26	36	53	63	77	81	236
Interest expense	(253)	(323)	(418)	(462)	(481)	(601)	(673)
Foreign exchange income (loss)	22	(147)	(193)	(224)	(139)	(33)	(278)
Other income (expense), net	10	63	65	58	365	(6)	44
Income (loss) before provision for income taxes	(884)	(7,377)	(10,177)	(10,932)	(1,770)	3,559	(14,130)
Provision for income taxes	308	1,083	1,291	65	952	1,378	435
Net income (loss)	\$ (1,192)	\$ (8,460)	\$ (11,468)	\$ (10,997)	\$ (2,722)	\$ 2,181	\$ (14,565)
Income (loss) per share:							
Basic	\$ (0.12)	\$ (0.89)	\$ (1.20)	\$ (1.16)	\$ (0.29)	\$ 0.24	\$ (1.58)
Diluted	\$ (0.12)	\$ (0.89)	\$ (1.20)	\$ (1.16)	\$ (0.29)	\$ 0.23	\$ (1.58)
Weighted average shares outstanding:							
Basic	9,564	9,536	9,539	9,509	9,434	9,277	9,222
Diluted	9,564	9,536	9,539	9,509	9,434	9,428	9,222

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	September 28, 2014	September 29, 2013	December 31,				
			2013	2012	2011	2010	2009
Consolidated Balance Sheet Data:							
(In thousands)							
Cash and cash equivalents	\$ 10,428	\$ 16,672	\$13,991	\$20,218	\$18,948	\$22,753	\$25,397
Working capital	20,278	25,434	22,130	31,894	41,634	41,537	37,132
Total assets	39,255	42,262	40,330	48,669	56,718	67,645	58,794
Total liabilities	21,123	20,660	21,421	19,189	17,266	27,805	23,101
Stockholders' equity	18,132	21,602	18,909	29,480	39,452	39,840	35,693

SELECTED UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL DATA

The following table shows selected unaudited pro forma condensed combined financial data of Amtech after giving effect to the merger with BTU. The selected unaudited pro forma condensed combined financial data assumes that the merger is accounted for under the acquisition method of accounting with Amtech treated as the acquirer. Under the acquisition method of accounting, the assets and liabilities of BTU, as of the effective date of the merger, will be recorded by Amtech at their respective estimated fair values and the excess of the merger consideration over the fair value of BTU's net assets will be allocated to goodwill.

The table sets forth the information as if the merger had become effective on October 1, 2013, with respect to operating data, and on September 30, 2014, with respect to balance sheet data. The selected unaudited pro forma condensed combined financial data has been derived from, and should be read in conjunction with, the unaudited pro forma condensed combined financial information, including the notes thereto, which is included in this joint proxy statement/prospectus under "Unaudited Pro Forma Condensed Combined Financial Information."

The selected unaudited pro forma condensed combined financial data is presented for informational purposes only and does not necessarily indicate the financial results that would have been achieved had the merger been completed as of the dates indicated or that may be achieved in the future and should not be taken as representative of future consolidated results of operations or financial condition of Amtech. Furthermore, no effect has been given in the selected unaudited pro forma condensed combined financial data for synergies and potential cost savings, if any, that may be realized through the combination of the two companies or the costs that may be incurred in integrating their operations. Further, as explained in more detail in the notes accompanying the unaudited pro forma condensed combined financial data included under "Unaudited Pro Forma Condensed Combined Financial Information," the pro forma allocation of purchase price reflected in the selected unaudited pro forma condensed combined financial information is subject to adjustment and may vary from the actual purchase price allocation that will be recorded at the time the merger is completed. Additionally, the adjustments made in the unaudited pro forma condensed financial information, which are described in those notes, are preliminary and may be revised.

	As of and for the year ended	
	September 30, 2014	
Operating Data:		
Net revenue	\$	111,531
Gross profit		31,786
Operating loss		(15,223)
Net loss attributable to Amtech Systems, Inc.		(16,082)
Earnings (loss) per share attributable to Amtech Systems, Inc.:		
Basic loss per share	\$	(1.25)
Diluted loss per share	\$	(1.25)
Balance Sheet Data:		
Cash and cash equivalents	\$	37,795
Working capital		49,241
Total assets		146,128
Total liabilities		64,735
Total equity		81,393

UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL INFORMATION

The following unaudited pro forma condensed combined financial information is based on and derived from the separate historical financial statements of Amtech and BTU, after giving effect to the proposed merger and gives effect to the assumptions and preliminary pro forma adjustments described in the accompanying notes to the unaudited pro forma condensed combined financial statements. The unaudited pro forma condensed combined balance sheet gives effect to the merger as if it had occurred on September 30, 2014. The unaudited pro forma condensed combined statement of operations gives effect to the merger as if it had occurred on October 1, 2013. The historical consolidated financial information has been adjusted to give effect to pro forma events that are directly attributable to the merger and factually supportable and, with respect to the unaudited pro forma condensed combined statement of operations, expected to have a continuing impact on the combined results.

Prior to entering into the definitive agreement, Amtech and BTU developed a reorganization plan to discontinue a product line and, as appropriate, align costs of production and operating expenses with expected revenue for product lines that are to be continued. Amtech and BTU expect to initially realize approximately \$4 to \$5 million in continuing, annual pre-tax cost savings from this plan, which management expects to be phased-in over a six to twelve month period following the merger. The estimated future savings are not reflected in the unaudited pro forma condensed combined statement of operations.

Amtech has a fiscal year that ends on September 30 while BTU has a fiscal year that ends on December 31. The unaudited pro forma condensed combined statement of operations for the year ended September 30, 2014 includes 1) Amtech's fiscal year ended September 30, 2014, and 2) BTU's twelve-month period ended September 28, 2014.

The unaudited pro forma condensed combined financial information was prepared using the acquisition method of accounting with Amtech considered the acquirer of BTU. Accordingly, consideration given by Amtech to complete the acquisition of BTU will be allocated to the assets and liabilities of BTU based upon their estimated fair values as of the date of completion of the merger. Any excess of the consideration over the fair value of assets acquired and liabilities assumed is allocated to goodwill. As of the date of this joint proxy statement/prospectus, Amtech has not completed the detailed valuation studies necessary to arrive at the required estimates of the fair value of the BTU assets to be acquired and the liabilities to be assumed and the related allocations of purchase price, nor has it identified all adjustments necessary to conform BTU's accounting policies to Amtech's accounting policies. A final determination of the fair value of BTU's assets and liabilities will be based on the actual net tangible and intangible assets and liabilities of BTU that exist as of the date of completion of the merger and, therefore, cannot be made prior to the completion of the merger. Accordingly, the unaudited pro forma purchase price adjustments are preliminary and are subject to further adjustments as additional information becomes available and as additional analyses are performed, and such further adjustments may be material. The preliminary unaudited pro forma purchase price adjustments have been made solely for the purpose of providing the unaudited pro forma condensed combined financial information presented below. Amtech estimated the fair value of BTU's assets and liabilities based on discussions with BTU's management, preliminary valuation studies, due diligence and information presented in public filings.

The unaudited pro forma condensed combined financial information is provided for informational purposes only. The unaudited pro forma condensed combined financial information is not necessarily, and should not be assumed to be, an indication of the results that would have been achieved had the merger been completed as of the dates indicated or that may be achieved in the future and should not be taken as representative of future consolidated results of operations or financial condition of Amtech. Furthermore, no effect has been given in the unaudited pro forma condensed combined statement of operations for synergies and potential cost savings, if any, that may be realized through the combination of the two companies or the costs that may be incurred in integrating their operations.

The unaudited pro forma condensed combined financial information should be read in conjunction with:

- The accompanying notes to the unaudited pro forma condensed combined financial statements;
- Amtech's audited historical consolidated financial statements and accompanying notes as of and for the year ended September 30, 2014, included in Amtech's Annual Report on Form 10-K for the year ended September 30, 2014, and incorporated by reference in this joint proxy statement/prospectus;

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- BTU's audited historical consolidated financial statements and accompanying notes as of and for the year ended December 31, 2013 included elsewhere in this joint proxy statement/prospectus;
- BTU's unaudited historical consolidated financial statements and accompanying notes as of September 28, 2014 and for the nine months ended September 28, 2014 and September 29, 2013 included elsewhere in this joint proxy statement/prospectus;
- Other information pertaining to Amtech and BTU incorporated by reference or included in this joint proxy statement/prospectus. See "Selected Consolidated Historical Financial Data of Amtech" and "Selected Consolidated Historical Financial Data of BTU" included elsewhere in this joint proxy statement/prospectus.

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UNAUDITED PRO FORMA CONDENSED COMBINED BALANCE SHEET
AS OF SEPTEMBER 30, 2014
(in thousands)

	Historical Amtech	Historical BTU(2)	Pro Forma Adjustments	Pro Forma Combined
Assets				
Current assets:				
Cash and cash equivalents	\$ 27,367	\$ 10,428	\$ —	\$ 37,795
Restricted cash	2,380	249	—	2,629
Accounts receivable	15,776	12,578	—	28,354
Inventories	16,760	10,696	450 (a)	27,906
Deferred income taxes	1,060	—	—	1,060
Other	2,082	515	—	2,597
Total current assets	65,425	34,466	450	100,341
Property, plant, and equipment, net	9,752	2,624	9,676 (b)	22,052
Deferred income taxes—long term	1,300	—	—	1,300
Intangible assets—net	2,678	—	940 (c)	3,618
Goodwill	8,323	—	5,903 (c)	14,226
Other assets—long term	2,426	2,165	—	4,591
Total Assets	\$ 89,904	\$ 39,255	\$ 16,969	\$ 146,128
Liabilities and Stockholders' Equity				
Current liabilities:				
Current portion of long-term debt	\$ —	\$ 380	\$ —	\$ 380
Accounts payable	6,003	7,418	—	13,421
Accrued compensation and related taxes	4,269	625	800 (g)	5,694
Accrued warranty expense	628	488	—	1,116
Deferred profit	6,908	—	—	6,908
Customer deposits	4,992	438	—	5,430
Other accrued liabilities	5,346	2,980	3,065 (g)	11,504
Income taxes payable	4,990	1,859	(202)(g)	6,647
Total current liabilities	33,136	14,188	3,776	51,100
Long-term debt, less current portion	—	6,935	—	6,935
Deferred income taxes—long term	—	—	3,520 (d)	3,520
Income taxes payable long-term	3,180	—	—	3,180
Total Liabilities	36,316	21,123	7,296	64,735
Stockholders' Equity:				
Preferred stock	—	—	—	—
Common stock	98	109	(109)(e)	130
Additional paid-in capital, net of treasury stock	81,884	47,676	(47,676)(e)	113,320
Accumulated other comprehensive income	(5,790)	2,392	(2,392)(e)	(5,790)
Retained earnings (deficit)	(21,051)	(32,045)	32,045 (e)	(24,714)
			(3,663)(g)	
Total stockholders' equity	55,141	18,132	9,673	82,946
Noncontrolling interest	(1,553)	—	—	(1,553)
Total equity	53,588	18,132	9,673	81,393
Total Liabilities and Stockholders' Equity	\$ 89,904	\$ 39,255	\$ 16,969	\$ 146,128

See accompanying notes to unaudited pro forma condensed combined financial statements.

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UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF OPERATIONS
FOR THE YEAR ENDED SEPTEMBER 30, 2014
(in thousands, except per share data)

	Historical Amtech	Historical BTU	Pro Forma Adjustments	Pro Forma Combined
Revenues, net of returns and allowances	\$ 56,501	\$ 55,030	\$ —	\$ 111,531
Cost of sales	44,875	34,870	—	79,745
Gross profit	11,626	20,160	—	31,786
Selling, general, and administrative	18,424	19,171	(1,338)(h)	36,362
Research, development and engineering	6,291	4,356	105(i)	10,647
Operating income (loss)	(13,089)	(3,367)	1,233	(15,223)
Interest and other income (expense), net	40	(317)	—	(277)
Income (loss) before income taxes	(13,049)	(3,684)	1,233	(15,500)
Income tax provision (benefit)	1,240	516	68(j)	1,824
Net income (loss)	(14,289)	(4,200)	1,165	(17,324)
Add: net loss attributable to noncontrolling interest	1,242	—	—	1,242
Net income (loss) attributable to Amtech Systems, Inc.	<u>\$ (13,047)</u>	<u>\$ (4,200)</u>	<u>\$ 1,165</u>	<u>\$ (16,082)</u>
Loss per share				
Basic loss per share attributable to Amtech shareholders	\$ (1.34)			\$ (1.25)
Diluted loss per share attributable to Amtech shareholders	\$ (1.34)			\$ (1.25)
Weighted shares outstanding				
Basic	9,732		3,182(k)	12,914
Diluted	9,732		3,182(k)	12,914

See accompanying notes to unaudited pro forma condensed combined financial statements.

**NOTES TO UNAUDITED PRO FORMA CONDENSED COMBINED
FINANCIAL STATEMENTS**

1. Description of the merger

On October 21, 2014, Amtech, BTU and Merger Sub entered into the merger agreement, pursuant to which Amtech will acquire BTU, on the terms and subject to the conditions set forth in the merger agreement. The merger agreement has been approved by the Boards of Directors of both Amtech and BTU and is subject to approval of Amtech's and BTU's stockholders.

Subject to the terms and conditions set forth in the merger agreement, holders of outstanding shares of BTU common stock and holders of BTU restricted stock units will receive 0.3291 shares of Amtech common stock. All outstanding BTU stock options will be converted into options to purchase shares of Amtech common stock on substantially the same terms and conditions, with appropriate adjustments based upon the exchange ratio to the exercise price and the number of shares of Amtech common stock subject to such stock options.

2. Basis of Pro Forma Presentation

The unaudited pro forma condensed combined financial statements have been derived from the historical consolidated financial statements of Amtech and BTU. Certain financial information presented in the "Historical BTU" column in the unaudited pro forma condensed combined balance sheet has been reclassified to conform to the historical presentation in Amtech's consolidated balance sheet.

BTU's historical consolidated financial statements have a fiscal year ending on December 31. In order to derive the unaudited condensed consolidated statement of operations for the year ended September 30, 2014, Amtech utilized BTU's statements of operations for the year ended December 31, 2013 and the nine-month periods ended September 28, 2014 and September 29, 2013. The following is a reconciliation of how the historical consolidated financial statements were utilized to derive BTU's statement of operations for the twelve months ended September 28, 2014 used in the unaudited pro forma condensed combined statement of operations.

	BTU			
	Historical statement of operations (in thousands, except per share data)			
	(1) Year Ended December 31, 2013	(2) Nine Months Ended September 29, 2013	(3) Nine months ended September 28, 2014	(1) - (2) + (3) Twelve Months Ended September 28, 2014
Net sales	\$ 47,754	\$ 36,761	\$ 44,037	\$ 55,030
Cost of sales	33,048	25,103	26,925	34,870
Gross profit	14,706	11,658	17,112	20,160
Selling, general and administrative	19,786	15,237	14,622	19,171
Research, development and engineering	4,604	3,427	3,179	4,356
Operating loss	(9,684)	(7,006)	(689)	(3,367)
Interest income	53	36	26	43
Interest expense	(418)	(323)	(253)	(348)
Foreign exchange gain (loss)	(193)	(147)	22	(24)
Other income, net	65	63	10	12
Loss before provision for income taxes	(10,177)	(7,377)	(884)	(3,684)
Provision (benefit) for income taxes	1,291	1,083	308	516
Net loss	\$ (11,468)	\$ (8,460)	\$ (1,192)	\$ (4,200)
Loss per share, basic and diluted	\$ (1.20)	\$ (0.89)	\$ (0.12)	\$ (0.44)
Weighted average shares outstanding, basic and diluted	9,539	9,536	9,564	9,560

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3. Estimate of Merger Consideration and Merger Consideration Allocation

Each share of BTU's common stock outstanding immediately prior to closing will be exchanged for 0.3291 of a share of Amtech common stock. Additionally, all outstanding restricted stock units will vest upon closing and be exchanged for 0.3291 of a share of Amtech common stock. The value of the merger consideration is subject to change based on changes in the market price of Amtech common stock prior to closing. An estimate of the merger consideration paid to BTU stockholders at closing is presented below (in thousands, except per share amounts):

BTU common shares outstanding at 9/28/14	9,574
BTU restricted stock units outstanding at 9/28/14	95
Total BTU common shares and restricted stock units eligible for exchange	9,669
Exchange ratio	0.3291
Amtech common shares to be issued	3,182
Amtech price per common share at 11/21/14	\$ 9.67
Consideration for BTU common shares and restricted stock units	\$30,770
Vested BTU stock options exchanged for Amtech stock options	698
Fair value of total consideration transferred	<u>\$31,468</u>

The merger is reflected in the unaudited pro forma condensed combined financial information as an acquisition of BTU by Amtech in accordance with Accounting Standards Codification Topic 805, "Business Combinations," using the acquisition method of accounting. Under these accounting standards, the total estimated purchase price is calculated as described below; the assets acquired and the liabilities assumed have been measured at their estimated fair values. The fair value measurements utilize estimates based on key assumptions of the merger, including historical and current market data. The unaudited pro forma adjustments included herein are preliminary and will be revised at the time of the merger as additional information becomes available and as additional analyses are performed. The final purchase price allocation will be determined at the time that the merger is completed, and the final amounts recorded for the merger may differ materially from the information presented herein.

Under the acquisition method of accounting, the total estimated acquisition consideration is allocated to the acquired tangible and intangible assets and assumed liabilities of BTU based on their estimated fair values as of the acquisition date. Any excess of the acquisition consideration over the fair value of assets acquired and liabilities assumed is allocated to goodwill. The Company expects that such goodwill will not be deductible for tax purposes. For the purposes of the unaudited pro forma condensed combined financial statements, Amtech has made a preliminary allocation of the acquisition consideration as follows (in thousands):

Cash	\$ 10,428
Inventories	11,146
Other current assets	13,342
Property, plant, and equipment	12,300
Intangible assets	940
Other long-term assets	2,165
Long-term debt	(7,315)
Accounts payable and accrued liabilities	(13,808)
Deferred tax liabilities	(3,633)
Fair value of assets acquired and liabilities assumed	25,565
Goodwill	5,903
Total preliminary acquisition consideration	<u>\$ 31,468</u>

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4. Reorganization Plan

Prior to entering into the merger agreement, Amtech and BTU developed a reorganization plan to discontinue a product line and, as appropriate, align costs of production and operating expenses with the expected revenue. Amtech and BTU expect to initially realize approximately \$4 to \$5 million in continuing, annual pre-tax cost savings from this plan, which management expects to be phased-in over six to twelve months. These estimated savings are not reflected in the unaudited pro forma condensed combined financial statements.

BTU is implementing a restructuring plan and expects to incur non-recurring reorganization costs, including employee severance and certain write-downs. BTU estimates these reorganization costs to be approximately \$2.6 million and expects that most of these expenses will be incurred during the first half of fiscal year 2015. Aside from the contractual payments noted in footnote 5.(g) below, these non-recurring costs are not reflected in the unaudited pro forma condensed combined financial statements.

5. Pro Forma Adjustments

Unaudited Pro Forma Condensed Combined Balance Sheet

- (a) Reflects an adjustment for the step-up of historical BTU inventories to estimated fair value. This inventory adjustment is expected to be fully recognized in cost of sales in the first six months following consummation of the merger. We expect this step up in basis and amortization of this amount to have a negative effect on margins.
- (b) Reflects an adjustment for the step-up of historical BTU property, plant, and equipment to estimated fair value. The estimated fair value is comprised of \$8.4 million of real property and \$3.9 million of equipment and other assets.
- (c) Reflects the estimated fair value of goodwill of \$5.9 million and intangible assets acquired, including \$0.7 million of trade name and technology and \$0.2 million of customer relationships.
- (d) Reflects the recognition of deferred tax liabilities resulting from fair value adjustments to inventories, property, plant and equipment and identifiable intangible assets acquired based primarily on a combined federal and state statutory rate of 34%.
- (e) Reflects an adjustment to remove the historical equity balances of BTU.
- (f) Reflects the issuance of 3.2 million shares of \$0.01 par value Amtech common stock as merger consideration, as described in the Basis of Pro Forma Presentation note above.
- (g) Reflects the recognition of \$3.1 million of merger-related transaction costs and \$0.8 million of contractual change in control payments, net of related tax effects of \$0.2 million, based on the deductible portion and a combined federal and state statutory rate of 34%.

Unaudited Pro Forma Condensed Combined Statement of Operations

- (h) Reflects the elimination of non-recurring merger-related transaction costs that have been recorded in Amtech's and BTU's historical results.
- (i) Reflects the incremental depreciation and amortization expense based on the preliminary fair values of the tangible and intangible assets acquired as follows (in thousands):

	Intangible Assets	Estimated Useful Lives (years)	Pro Forma Amortization
Trade name and technology	\$ 700	7.5	\$ 93
Customer relationships	240	12.5	19
	<u>\$ 940</u>		<u>\$ 112</u>

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	Tangible Assets	Estimated Useful Lives (years)	Pro Forma Depreciation
Real property	\$ 8,400	20.0	\$ 420
Personal Property	3,900	5.0	780
	<u>\$12,300</u>		<u>1,200</u>
Less historical depreciation expense			<u>1,207</u>
Incremental pro forma depreciation expense			<u>\$ (7)</u>

- (j) Reflects the elimination of historical tax benefits related to the deductible portion of Amtech transaction costs at a combined federal and state statutory rate of 34%.
- (k) Reflects the issuance of 3.2 million shares of Amtech common stock as merger consideration, as described in the Basis of Pro Forma Presentation note above.

COMPARATIVE PER SHARE DATA

(Unaudited)

Presented below for Amtech and BTU is historical, unaudited pro forma combined and pro forma equivalent per share financial data as of and for the fiscal year ended September 30, 2014. The information presented below should be read together with the historical consolidated financial statements of Amtech, including the related notes, filed by Amtech with the SEC and incorporated by reference into this joint proxy statement/prospectus, and of BTU included elsewhere in this joint proxy statement/prospectus, and the unaudited pro forma condensed combined financial information in “Unaudited Pro Forma Condensed Combined Financial Information” included elsewhere in this joint proxy statement/prospectus.

The historical, unaudited pro forma combined and pro forma equivalent per share data as of and for the fiscal year ended September 30, 2014 were prepared based on the audited consolidated financial statements of Amtech as of and for the fiscal year ended September 30, 2014 and of BTU for the year ended December 31, 2013 and the unaudited condensed consolidated financial statements of BTU as of September 28, 2014 and for the nine months ended September 28, 2014 and September 29, 2013. The unaudited pro forma and pro forma per equivalent share information gives effect to the merger as if the merger had been effective on September 30, 2014 in the case of the book value data, and as if the merger had been effective as of October 1, 2013 in the case of the earnings per share and the cash dividends data. The unaudited pro forma data combines the historical results of BTU into Amtech’s consolidated statement of operations. While certain adjustments were made for the estimated impact of fair value adjustments and other acquisition-related activity, they are not indicative of what could have occurred had the acquisition taken place on October 1, 2013.

The unaudited pro forma equivalent data of BTU was calculated by multiplying the corresponding unaudited pro forma consolidated data of Amtech by the exchange ratio set forth in the merger agreement (0.3291). This data shows how each share of BTU common stock would have participated in net loss and book value of Amtech if the companies had always been consolidated for accounting and financial reporting purposes for all periods presented. These amounts, however, are not intended to reflect future per share levels of net income and book value of Amtech.

	<u>Amtech Historical</u>	<u>BTU Historical</u>	<u>Pro Forma Combined</u>	<u>Per Equivalent BTU Share(1)</u>
For the year ended September 30, 2014:				
Basic earnings per share(2)	\$ (1.34)	\$ (0.44)	\$ (1.25)	\$ (0.41)
Diluted earnings per share(2)	\$ (1.34)	\$ (0.44)	\$ (1.25)	\$ (0.41)
Cash dividends declared	\$ —	\$ —	\$ —	\$ —
Book value per share as of September 30, 2014	\$ 5.44	\$ 1.89	\$ 6.25	\$ 2.06

(1) Reflects BTU shares at the exchange ratio of 0.3291.

(2) Pro forma combined earnings per share data excludes the impact of anticipated cost savings and potential revenue enhancements that may be realized through the merger.

RISK FACTORS

In addition to general investment risks and the other information contained in or incorporated by reference into this joint proxy statement/prospectus, including the matters addressed under the section “Cautionary Statement Regarding Forward-Looking Statements,” you should carefully consider the following risk factors in deciding how to vote for the proposals presented in this joint proxy statement/prospectus. You should also consider the other information in this joint proxy statement/prospectus and the other documents incorporated by reference into this joint proxy statement/prospectus. See “Where You Can Find More Information.”

Risk Factors Related to the Merger

Because the market price of Amtech common stock will fluctuate, BTU stockholders cannot be certain of the market value of the merger consideration they will receive.

Upon completion of the merger, each share of BTU common stock (except for specified shares of BTU common stock held by BTU or Amtech) will be converted into 0.3291 shares of Amtech common stock. The market value of the merger consideration will vary from the closing price of Amtech common stock on the date Amtech and BTU announced the merger, on the date that this joint proxy statement/prospectus is mailed to BTU stockholders, on the date of the special meeting of the BTU stockholders and on the date the merger is completed and thereafter. Any change in the market price of Amtech common stock prior to the completion of the merger will affect the market value of the merger consideration that BTU stockholders will receive upon completion of the merger, and there will be no adjustment to the merger consideration for changes in the market price of either shares of Amtech common stock or shares of BTU common stock. Stock price changes may result from a variety of factors that are beyond the control of Amtech and BTU, including, but not limited to, general market and economic conditions, changes in our respective businesses, operations and prospects and regulatory considerations. Therefore, at the time of the BTU special meeting you will not know the precise market value of the consideration you will receive at the effective time of the merger. You should obtain current market quotations for shares of Amtech common stock and for shares of BTU common stock.

The market price of Amtech common stock after the merger may be affected by factors different from those affecting the shares of BTU or Amtech currently.

Upon completion of the merger, holders of BTU common stock will become holders of Amtech common stock. Amtech’s business differs in important respects from that of BTU, and, accordingly, the results of operations of the combined company and the market price of Amtech common stock after the completion of the merger may be affected by factors different from those currently affecting the independent results of operations of each of Amtech and BTU. For a discussion of the businesses of Amtech and BTU and of some important factors to consider in connection with those businesses, see the documents included elsewhere in this joint proxy statement/prospectus or incorporated by reference in this joint proxy statement/prospectus and referred to under “Where You Can Find More Information” beginning on page 163.

Combining the two companies may be more difficult, costly or time consuming than expected and the anticipated benefits and cost savings of the merger may not be realized.

Amtech and BTU have operated and, until the completion of the merger, will continue to operate, independently. The success of the merger, including anticipated benefits and cost savings, will depend, in part, on Amtech’s ability to successfully combine and integrate the businesses of Amtech and BTU in a manner that permits growth opportunities and does not materially disrupt the existing customer relations nor result in decreased revenues due to loss of customers. It is possible that the integration process could result in the loss of key employees, the disruption of either company’s ongoing businesses or inconsistencies in standards, controls, procedures and policies that adversely affect the combined company’s ability to maintain relationships with clients, customers and employees or to achieve the anticipated benefits and cost savings of the merger. The loss of key employees could adversely affect Amtech’s ability to successfully conduct its business, which could have an adverse effect on Amtech’s financial results and the value of its common stock. If Amtech experiences difficulties with the integration process, the anticipated benefits of the merger may not be realized fully or at all, or may take longer to realize than expected. Integration efforts between the two companies will also divert management attention and resources. These integration matters could have an adverse effect on each of BTU and Amtech during this transition period and for an undetermined period after completion of the merger on the combined company. In addition, the actual cost savings of the merger could be less than anticipated.

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The unaudited pro forma condensed combined financial statements included in this document are preliminary and the actual financial condition and results of operations after the merger may differ materially.

The unaudited pro forma condensed combined financial statements in this document are presented for illustrative purposes only and are not necessarily indicative of what Amtech's actual financial condition or results of operations would have been had the merger been completed on the dates indicated. The unaudited pro forma condensed combined financial statements reflect adjustments, which are based upon preliminary estimates, to record the BTU identifiable assets acquired and liabilities assumed at fair value and the resulting goodwill recognized. The purchase price allocation reflected in this document is preliminary, and final allocation of the purchase price will be based upon the actual purchase price and the fair value of the assets and liabilities of BTU as of the date of the completion of the merger. Accordingly, the final acquisition accounting adjustments may differ materially from the pro forma adjustments reflected in this document. For more information, see "Unaudited Pro Forma Condensed Combined Financial Statements" beginning on page 20.

Certain of BTU's directors and executive officers have interests in the merger that may differ from the interests of BTU's stockholders.

BTU's stockholders should be aware that some of BTU's directors and executive officers have interests in the merger and have arrangements that are different from, or in addition to, those of BTU's stockholders generally. These interests and arrangements may create potential conflicts of interest. BTU's board of directors was aware of these interests and considered these interests, among other matters, when making its decision to approve the merger agreement, and in recommending that BTU's stockholders vote in favor of adopting the merger agreement.

For more information, see "The Merger—Interests of BTU's Directors and Executive Officers in the Merger" beginning on page 126.

Termination of the merger agreement could negatively impact BTU or Amtech.

If the merger agreement is terminated, there may be various consequences. For example, BTU's or Amtech's businesses may have been impacted adversely by the failure to pursue other beneficial opportunities due to the focus of management on the merger, without realizing any of the anticipated benefits of completing the merger. Additionally, if the merger agreement is terminated, the market price of BTU's or Amtech's common stock could decline to the extent that the current market prices reflect a market assumption that the merger will be completed. If the merger agreement is terminated under certain circumstances, BTU or Amtech may be required to pay to the other party a termination fee of \$1,320,000 or an expense reimbursement amount of up to \$1,000,000.

BTU and Amtech will be subject to business uncertainties and contractual restrictions while the merger is pending.

Uncertainty about the effect of the merger on employees and customers may have an adverse effect on BTU or Amtech. These uncertainties may impair BTU's or Amtech's ability to attract, retain and motivate key personnel until the merger is completed, and could cause customers and others that deal with BTU or Amtech to seek to change existing business relationships with BTU or Amtech. Retention of certain employees by BTU or Amtech may be challenging while the merger is pending, as certain employees may experience uncertainty about their future roles with BTU or Amtech. If key employees depart because of issues relating to the uncertainty and difficulty of integration or a desire not to remain with BTU or Amtech, BTU's business or Amtech's business could be harmed. In addition, subject to certain exceptions, each of BTU and Amtech has agreed to operate its business in the ordinary course prior to closing. See "The Merger Agreement—Covenants and Agreements" for a description of the restrictive covenants applicable to BTU and Amtech.

If the merger is not completed, Amtech and BTU will have incurred substantial expenses without realizing the expected benefits of the merger.

Each of Amtech and BTU has incurred and will incur substantial expenses in connection with the negotiation and completion of the transactions contemplated by the merger agreement, as well as the costs and expenses of filing, printing and mailing this joint proxy statement/prospectus and all filing and other fees paid to the SEC in connection with the merger. If the merger is not completed, Amtech and BTU would have to recognize these expenses without realizing the expected benefits of the merger.

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The merger agreement limits Amtech's and BTU's ability to pursue acquisition proposals and requires each company to pay a termination fee of \$1,320,000, plus an expense reimbursement amount of up to \$1,000,000 under limited circumstances, including circumstances relating to acquisition proposals.

The merger agreement prohibits Amtech and BTU from initiating, soliciting, knowingly encouraging or knowingly facilitating certain third-party acquisition proposals. See "The Merger Agreement—Agreement Not to Solicit Other Offers". The merger agreement also provides that Amtech or BTU must pay a termination fee in the amount of \$1,320,000, plus an expense reimbursement amount of up to \$1,000,000 in the event that the merger agreement is terminated under certain circumstances, including involving such party's failure to abide by certain obligations to not solicit acquisition proposals. See "The Merger Agreement—Termination Fee". These provisions might discourage a potential competing acquirer that might have an interest in acquiring all or a significant part of BTU or Amtech from considering or proposing such an acquisition.

The shares of Amtech common stock to be received by BTU stockholders as a result of the merger will have different rights from the shares of BTU common stock.

Upon completion of the merger, BTU stockholders will become Amtech stockholders and their rights as stockholders will be governed by the Arizona business corporation act and the Amtech amended and restated articles of incorporation and bylaws. The rights associated with BTU common stock are different from the rights associated with Amtech common stock. Please see "Comparison of Stockholders' Rights" beginning on page 151 for a discussion of the different rights associated with Amtech common stock.

Holders of BTU and Amtech common stock will have a reduced ownership and voting interest after the merger and will exercise less influence over management.

Holders of BTU and Amtech common stock currently have the right to vote in the election of the board of directors and on other matters affecting BTU and Amtech, respectively. Upon the completion of the merger, each BTU stockholder who receives shares of Amtech common stock will become a stockholder of Amtech with a percentage ownership of Amtech that is smaller than the stockholder's percentage ownership of BTU. It is currently expected that the former stockholders of BTU as a group will receive shares in the merger constituting approximately 24.5% of the outstanding shares of Amtech common stock immediately after the merger. As a result, current stockholders of Amtech as a group will own approximately 75.5% of the outstanding shares of Amtech common stock immediately after the merger. These percentages assume 3,200,000 shares of Amtech common stock are issued in the merger and is based on 9,852,793 shares of Amtech common stock outstanding as of November 19, 2014. Because of this, BTU stockholders may have less influence on the management and policies of Amtech than they now have on the management and policies of BTU and current Amtech stockholders may have less influence than they now have on the management and policies of Amtech.

BTU stockholders are not expected to have dissenters' or appraisal rights in the merger.

Dissenters' rights are statutory rights that, if applicable under law, enable stockholders to dissent from an extraordinary transaction, such as a merger, and to demand that the corporation pay the fair value for their shares as determined by a court in a judicial proceeding instead of receiving the consideration offered to stockholders in connection with the extraordinary transaction. Under the DGCL, a stockholder may not dissent from a merger as to shares that are listed on a national securities exchange at the record date fixed to determine the stockholders entitled to receive notice of the meeting of stockholders to vote upon the agreement of merger or consolidation.

Because BTU common stock is listed on NASDAQ, a national securities exchange, and is expected to continue to be so listed on the record date, and because the merger otherwise satisfies the foregoing requirements, holders of BTU common stock will not be entitled to dissenters' or appraisal rights in the merger with respect to their shares of BTU common stock.

Pending litigation against BTU and Amtech could result in an injunction preventing the completion of the merger or a judgment resulting in the payment of damages.

On November 4, 2014, a putative stockholder class action complaint was filed, purportedly on behalf of BTU's public stockholders, in the Court of Chancery of the State of Delaware against BTU, members of the BTU Board, Amtech, and Merger

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Sub. The complaint generally alleges, among other things, that the members of BTU's board of directors breached their fiduciary duties owed to BTU's public stockholders by causing BTU to enter into the merger agreement and by approving the merger, and that Amtech and Merger Sub aided and abetted such alleged breaches of fiduciary duties. In addition, the complaint alleges that the merger agreement improperly favors Amtech and unduly restricts BTU's ability to negotiate with other potential bidders. The complaint generally seeks, among other things, declaratory and injunctive relief concerning the alleged fiduciary breaches, injunctive relief prohibiting Amtech, Merger Sub, and BTU from consummating the Merger, other forms of equitable relief, and compensatory damages. Both Amtech and BTU believe that the claims are without merit and each intends to vigorously defend itself (and its directors) against the litigation.

On November 17, 2014, a separate putative stockholder class action complaint was filed, also purportedly on behalf of BTU's public stockholders, in the Court of Chancery of the State of Delaware against BTU, members of the BTU board, Amtech and Merger Sub. The complaint generally alleges, among other things, that the members of BTU's board of directors breached their fiduciary duties owed to BTU's public stockholders by failing to engage in a competitive sale and bidding process, and that Amtech and Merger Sub aided and abetted such alleged breaches of fiduciary duties. The complaint further alleges that these fiduciary breaches gave Amtech an unfair advantage on account of the BTU board's failing to solicit other potential acquirers. The complaint generally seeks, among other things, injunctive relief prohibiting the defendants from consummating the merger, compensatory damages for alleged breaches of fiduciary duties, and other forms of equitable relief. Both Amtech and BTU believe that the claims are without merit and each intends to vigorously defend itself (and its directors) against the litigation.

Risks Related to BTU

BTU's industry has historically been cyclical and experienced periodic downturns.

BTU's business depends on capital spending by electronics, semiconductor, solar cell and nuclear fuel manufacturers, which in turn depends on current and anticipated market demand for printed circuit boards, integrated circuits and solar panels and the products that use them as well as the need for nuclear fuel for power generation. BTU continues to experience a significant downturn in the solar industry. The electronics and semiconductor industries have historically been cyclical and have experienced periodic downturns that have had a material adverse effect on the demand for equipment that BTU manufactures and markets.

BTU has made substantial investments in its organization to develop new products for the electronics and alternative energy markets. Sales of BTU's products to these markets are subject to substantial risks.

Electronics. BTU has recently introduced new lower priced products in the electronics segment. To date, sales of such products have trailed expectations. If BTU is unable to successfully market and sell lower priced, lower cost products to the electronics sector, its market penetration in the China market may slow or decrease.

Solar Energy. The solar energy sector is primarily dependent upon continuation of governmental subsidies which have been scaled back. A further decline in these subsidies would reduce BTU's ability to grow its business in this market due to reduced capital spending by the manufacturers of solar panels. The solar industry is currently facing overcapacity in its production capacity. This overcapacity has a meaningful negative impact on demand for capital equipment supplied to this industry.

Nuclear Energy. The market for nuclear fuel pellets used in power generation is dependent upon further growth in nuclear power production. Consequently, without growth in the production of nuclear power, BTU's opportunities to grow in this area will be limited. In addition, BTU may need export licenses to supply this type of equipment to certain countries. Failure to maintain such licenses or obtain new required licenses may impact BTU's ability to expand its revenue from this market.

BTU's strategy of developing products for the solar market has yet to achieve consistent positive cash flows, and it is relying on a combination of cash on hand and cash flow from sales of its products to the non-solar market to fund its operations and investment in the solar market strategy.

Since 2005, BTU has been pursuing a strategy of developing and selling thermal products for the solar market. Although this strategy produced meaningful sales in the solar market in 2010 and 2011, the significant decline in the solar market in 2012 and 2013 has meant that BTU has not achieved the results it had hoped for. Although BTU continues to believe that the solar market presents an attractive opportunity for its products, in the near term BTU is funding its investments and operations in the solar

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market from cash flows from sales of its products to the non-solar market and its cash on hand. If the solar market does not improve, or if BTU's products do not gain the acceptance it has planned, BTU's cash resources will not allow it to continue making investments in the solar market and it may need to take action to restructure itself. Such actions, which could include exiting the solar business, selling assets or workforce reductions, could have a material adverse effect on its financial condition and result of operations and on the price of its stock.

If BTU is unable to increase sales and reduce costs, its profitability and liquidity may be affected negatively.

BTU had an operating loss of \$9.7 million in 2013 compared to operating loss of \$10.4 million in 2012. BTU attributes a large portion of the operating loss in 2013 to decreases in sales and the under-absorption of costs in its facilities, and the result of the legal settlement that was recognized in BTU's consolidated statement of operations for the three months ended September 29, 2013. BTU may not experience growth in its business in 2014 and 2015, which will negatively impact its profitability and liquidity.

BTU's future success will depend on its ability to effectively develop and market its products against those of its competitors.

The industry in which BTU does business is highly competitive. Some of BTU's competitors have substantially greater financial, engineering, manufacturing and customer support capabilities and offer more extensive product offerings. If customers prefer products offered by BTU's competitors, BTU will have difficulty maintaining or increasing its revenue. BTU's principal competitors for solder reflow systems are Vitronics-Soltec, Heller, Folungwin, ERSA, and Rehm. BTU's principal competitors for advanced semiconductor packaging are Vitronics-Soltec and Heller. BTU's systems for the alternative energy markets and other applications compete primarily against products offered by Centrotherm, Amtech, Factory 48, Despatch, Schmidt, Smit and Harper. BTU expects its competitors to continue to improve the design and performance of their current products and to introduce new products with improved performance capabilities. BTU's failure to introduce new products in a timely manner, or the introduction by its competitors of products with perceived or actual advantages, could result in reduced sales of, or lower margins on, its products. In future years, BTU expects to face increased competition based on price, particularly from companies in Asia. If BTU is unable to reduce the costs of its products or introduce new lower cost products, it may lose sales to these competitors.

A significant amount of BTU's cash is in China and may not be brought back to the United States without tax consequences, which reduces BTU's flexibility in deploying its liquidity.

BTU does not accrue incremental U.S. taxes on its revenues from China as these earnings are considered to be indefinitely reinvested outside of the U.S. While BTU has no plans to do so, events may occur in the future that could effectively force BTU to change its intent not to repatriate its foreign earnings. If BTU changes its intent and repatriates such earnings, it will have to accrue the applicable amount of taxes associated with such earnings and pay taxes at a substantially higher rate than its effective income tax rate in 2013. These increased taxes could materially adversely affect BTU's financial condition and results of operations and therefore reduce the flexibility it has to deploy its cash.

Sales made by BTU's international operations are subject to the economic, political, legal and business environments of the countries in which it does business, and its failure to operate successfully or adapt to changes in these environments could cause its international sales and operations to be limited or disrupted.

BTU's international sales accounted for 82.1% of its consolidated revenue for 2013. BTU expects to continue to generate a significant percentage of its revenue outside the U.S. for the foreseeable future. In addition, BTU has direct investments in a number of subsidiaries outside of the U.S., primarily in Asia and Europe. BTU's international operations could be limited or disrupted, and the value of its direct investments may be diminished, by any of the following:

- fluctuations in currency exchange rates;
- the imposition of governmental controls;
- import and export license requirements;
- political instability;

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- difficulties enforcing contractual and intellectual property rights;
- terrorist activities and armed conflict;
- restrictions on direct investments by foreign entities and trade restrictions;
- changes in tax laws and tariffs;
- costs and difficulties in staffing and managing international operations; and
- longer customer payment cycles.

Additionally, BTU is subject to the Foreign Corrupt Practices Act, which may place it at a competitive disadvantage to foreign companies that are not subject to similar regulations.

BTU conducts only a small portion of its sales in currencies other than the U.S. dollar. BTU recognizes foreign currency gains or losses arising from its operations in the period in which it incurs those gains or losses. As a result, currency fluctuations among the U.S. dollar and the other currencies in which BTU does business have caused foreign currency transaction gains and losses in the past and will likely do so in the future. Because of the number of currencies involved, the variability of currency exposures and the potential volatility of currency exchange rates, BTU may suffer foreign currency transaction losses in the future due to the effect of exchange rate fluctuations.

Over the past few years, a majority of BTU's revenue has been generated from sales in the Asia Pacific region. BTU's operations are particularly vulnerable to instability in this region and competition from organizations based in this region.

During 2013, 61.0% of BTU's revenue was generated from sales in the Asia Pacific region. Political or economic instability in any of the major Asia Pacific economies may adversely impact the demand for capital equipment, including equipment of the type BTU manufactures and markets. In addition, BTU faces competition from a number of suppliers based in the Asia Pacific region that have certain advantages over U.S. suppliers, including BTU. These advantages include, among other things, lower operating and regulatory costs, proximity to customers, favorable tariffs and affiliation with significantly larger organizations. In addition, changes in the amount or price of electronics or solar cells produced in the Asia Pacific region could negatively impact spending by BTU's customers.

If BTU fails to maintain positive relationships with key personnel, it may be unable to successfully grow its business.

BTU's future operating results depend substantially upon the continued service of its key personnel, who are not bound by employment agreements. BTU's future operating results also depend in significant part upon BTU's ability to attract and retain qualified management, manufacturing, technical, engineering, marketing, sales and support personnel. Competition for qualified personnel, particularly those with technical skills, is intense, and BTU may fail to attract and retain qualified personnel. BTU's business, financial condition and results of operations could be materially adversely affected by the loss of any of its key employees, by the failure of any key employee to perform in his or her current position, or by its inability to attract and retain skilled employees.

The income tax rate on BTU's consolidated income before taxes is subject to variables beyond its control.

BTU's net income and cash flow can be adversely affected by innumerable conditions affecting income taxes which are outside of its control. To name but a few of the potential uncontrollable circumstances that could affect the consolidated tax rate:

- BTU sells and operates globally, with manufacturing in both the United States and China. Disagreements could occur on the jurisdiction of income and taxation among different country governmental tax authorities. Potential areas of disputes could include transfer pricing values, inter-company cross charges and inter-company balances.
- BTU is subject to a China withholding tax on certain non-tangible charges made under its transfer pricing agreements. The interpretation of what charges are subject to the tax and when the liability for the tax occurs has varied and could change in the future.

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- In the United States, new tax disclosure regulations, unfavorable interpretations and unforeseen enforcements by the government tax authorities of various provisions of the federal and state tax codes, could have an unfavorable impact on the amount and timing of BTU's tax provision and cash flow.

Failure of critical suppliers to deliver sufficient quantities of parts in a timely and cost-effective manner would adversely impact BTU's operations.

Although BTU uses numerous vendors to supply components for the manufacture of its products, not all are qualified suppliers for all of BTU's parts. Some key parts may only be available from a single supplier. Accordingly, BTU may experience problems in obtaining adequate and reliable quantities of various components. In addition, suppliers may cease manufacturing certain components that are difficult to replace without significant reengineering of BTU's products. BTU's results of operations will be materially adversely impacted if it is unable to obtain adequate supplies of components in a timely and cost effective manner.

The occurrence of natural disasters in the Asia Pacific region may adversely impact BTU's operations and sales.

BTU has an expanding engineering and manufacturing facility in China, and the majority of its sales are made to destinations in the Asia Pacific region. This region is known for being vulnerable to natural disasters and other risks, such as earthquakes and floods, which at times have disrupted the local economies. A significant earthquake or other crisis could materially affect BTU's operating results. BTU is not insured for most losses and business interruptions of this kind, and it does not have redundant, multiple site capacity in the event of a natural disaster. In the event of such a disaster, BTU's business would suffer.

BTU faces the risk of product liability claims or other litigation, which could be expensive and may divert management's attention from running its business.

The manufacture and sale of BTU's products involves the risk of product liability claims. In addition, a failure of one of BTU's products at a customer site could interrupt the business operations of such customer. BTU's existing insurance coverage limits may not be adequate to protect it from all liabilities that it might incur in connection with the manufacture and sale of its products if a successful product liability claim or series of product liability claims were brought against it. BTU may also be involved in other legal proceedings or claims and experience threats of legal action from time to time in the ordinary course of its business.

Regulations related to conflict minerals could adversely impact BTU's business.

The Dodd-Frank Wall Street Reform and Consumer Protection Act contains provisions to improve transparency and accountability concerning the supply of certain minerals, known as conflict minerals, originating from the Democratic Republic of Congo (DRC) and adjoining countries. As a result, the SEC has adopted annual disclosure and reporting requirements for those companies who use conflict minerals mined from the DRC and adjoining countries in their products. BTU filed its first Form SD and related conflict mineral report on June 2, 2014. Additional costs to BTU include complying with the SEC's requirements, including determining whether BTU's products contain conflict minerals, determining the source of the minerals, making changes to BTU's products, processes or suppliers and the diversion of management's attention away from business activities. In addition, BTU might be limited to a smaller pool of suppliers, relationships with suppliers may deteriorate and BTU might incur reputational harm among customers and stockholders if it is unable to determine that its products are conflict mineral free.

Provisions in BTU's organizational documents could prevent or frustrate attempts by stockholders to replace its current management and could make acquisitions more difficult.

BTU's certificate of incorporation and by-laws contain provisions that could make it more difficult for a third party to acquire it without the consent of its board of directors. BTU's certificate of incorporation provides that its stockholders may not take action by written consent. This provision may have the effect of preventing or hindering attempts by its stockholders to replace its current management. Furthermore, Delaware law prohibits a corporation from engaging in a business combination

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with any holder of 15% or more of its capital stock until the holder has held the stock for three years unless, among other possibilities, the corporation's board of directors approves the transaction. BTU's board of directors may use this provision to prevent changes in its management. Also, BTU's board of directors may adopt additional anti-takeover measures in the future.

BTU's officers and directors may be able to block proposals for a change in control.

Paul J. van der Wansem, BTU's chairman and chief executive officer, beneficially owns approximately 20.15% of BTU's outstanding common stock as of November 19, 2014. Due to this concentration of ownership, Mr. van der Wansem may be able to prevail on all matters requiring a stockholder vote, including:

- the election of directors;
- the amendment of BTU's organizational documents; or
- the approval of a merger, sale of assets, or other major corporate transaction.

However, in connection with the merger agreement, Mr. van der Wansem and certain persons and trusts affiliated with him, who in the aggregate own approximately 13.76% of the outstanding BTU common stock, entered into a voting and support agreement with Amtech pursuant to which Mr. van der Wansem and his affiliates who are a party thereto have agreed, among other things, to vote all of their BTU common stock in favor of the BTU merger proposal and the transactions contemplated thereby.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements contained or incorporated by reference in this joint proxy statement/prospectus are forward looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 giving Amtech's or BTU's expectations or predictions of future financial or business performance or conditions. Forward-looking statements are typically identified by words such as "believe," "expect," "anticipate," "intend," "target," "estimate," "continue," "positions," "prospects" or "potential," by future conditional verbs such as "will," "would," "should," "could" or "may", or by variations of such words or by similar expressions. Such forward-looking statements include, but are not limited to, statements about the benefits of the business combination transaction involving Amtech and BTU, including future financial and operating results, the combined company's plans, objectives, expectations and intentions and other statements that are not historical facts. These forward-looking statements are subject to numerous assumptions, risks and uncertainties which change over time. In addition to factors previously disclosed in Amtech's and BTU's reports filed with the Securities and Exchange Commission, the following factors, among others, could cause actual results to differ materially from forward-looking statements: ability to meet closing conditions to the merger, including the requisite approvals by Amtech and BTU stockholders; delay in closing the merger; difficulties and delays in integrating the Amtech and BTU businesses or fully realizing cost savings and other benefits; business disruption following the proposed transaction; the inability to sustain revenue and earnings growth; inflation; the introduction, withdrawal, success and timing of business initiatives; competitive conditions; the inability to realize cost savings or revenues or to implement integration plans and other consequences associated with mergers, acquisitions and divestitures; economic conditions; changes in Amtech's stock price before closing, including as a result of the financial performance of BTU prior to closing; the reaction to the transaction of the companies' customers, employees and counterparties; and the impact, extent and timing of technological changes.

For any forward-looking statements made in this joint proxy statement/prospectus or in any documents incorporated by reference into this joint proxy statement/prospectus, Amtech and BTU claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995. You are cautioned not to place undue reliance on these statements, which speak only as of the date of this joint proxy statement/prospectus or the date of the applicable document incorporated by reference in this joint proxy statement/prospectus. Amtech and BTU do not undertake to update forward-looking statements to reflect facts, circumstances, assumptions or events that occur after the date the forward-looking statements are made. All subsequent written and oral forward-looking statements concerning the merger or other matters addressed in this joint proxy statement/prospectus and attributable to Amtech, BTU or any person acting on their behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this joint proxy statement/prospectus.

THE BTU SPECIAL MEETING

This section contains information for BTU stockholders about the special meeting that BTU has called to allow its stockholders to consider and vote on the merger agreement and other matters. BTU is mailing this joint proxy statement/prospectus to you, as a BTU stockholder, on or about [], 2014. This joint proxy statement/prospectus is accompanied by a notice of the special meeting of BTU stockholders and a form of proxy card that BTU's board of directors is soliciting for use at the special meeting and at any adjournments or postponements of the special meeting.

Date, Time and Place of Meeting

The special meeting of BTU stockholders will be held at BTU's offices at 23 Esquire Road, North Billerica, MA 01862 at [] A.M., Eastern time, on [], 2014. On or about [], 2014, BTU commenced mailing this document and the enclosed form of proxy card to its stockholders entitled to vote at the BTU special meeting.

Matters to Be Considered

At the BTU special meeting, BTU stockholders will be asked to consider and vote upon the following matters:

- the BTU merger proposal;
- the BTU adjournment proposal;
- the BTU merger-related compensation proposal; and
- to transact such other business as may properly come before the meeting or any adjournment thereof.

Recommendation of BTU's Board of Directors

The BTU board of directors recommends that you vote **'FOR'** the BTU merger proposal, **'FOR'** the BTU adjournment proposal (if necessary or appropriate), and **'FOR'** the BTU merger-related compensation proposal.

BTU Record Date and Quorum

The BTU board of directors has fixed the close of business on [], 2014 as the record date for determining the holders of BTU common stock entitled to receive notice of and to vote at the BTU special meeting.

As of the BTU record date, there were [] shares of BTU common stock outstanding and entitled to vote at the BTU special meeting held by [] holders of record. Each share of BTU common stock entitles the holder to one vote at the BTU special meeting on each proposal to be considered at the BTU special meeting.

The representation (in person or by proxy) of holders of at least a majority of the issued and outstanding shares entitled to vote at the BTU special meeting constitutes a quorum for transacting business at the BTU special meeting. All shares of BTU common stock, whether present in person or represented by proxy, including abstentions and broker non-votes, will be treated as present for purposes of determining the presence or absence of a quorum for all matters voted on at the BTU special meeting.

As of the record date, the directors and executive officers of BTU and their affiliates owned and were entitled to vote [] shares of BTU common stock, representing approximately []% of the shares of BTU common stock outstanding on that date. BTU currently expects that BTU's directors and executive officers will vote their shares in favor of the BTU merger proposal, the BTU merger-related compensation proposal and the BTU adjournment proposal, although none of them has entered into any agreements obligating them to do so (other than Mr. van der Wanssem as described in the section of this joint proxy statement/prospectus entitled "The Merger—Voting and Support Agreements"). As of the record date, Amtech did not beneficially hold any shares of BTU common stock.

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Required Vote; Treatment of Abstentions and Failure to Vote

BTU merger proposal:

- **Standard:** The affirmative vote of at least two-thirds of the outstanding shares of BTU common stock.
- **Effect of abstentions and broker non-votes:** If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the BTU special meeting or fail to instruct your bank or broker how to vote with respect to the BTU merger proposal, it will have the same effect as a vote “AGAINST” the proposal.

BTU adjournment proposal:

- **Standard:** The affirmative vote of a majority of votes cast (in person or by proxy) at the BTU special meeting and entitled to vote on such proposal, whether or not a quorum is present.
- **Effect of abstentions and broker non-votes:** If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the BTU special meeting or fail to instruct your bank or broker how to vote with respect to the BTU adjournment proposal or the BTU merger-related compensation proposal, it will have no effect on such proposals.

BTU merger-related compensation proposal:

- **Standard:** The affirmative vote of a majority of votes cast (in person or by proxy) at the BTU special meeting and entitled to vote on such proposal.
- **Effect of abstentions and broker non-votes:** If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the BTU special meeting or fail to instruct your bank or broker how to vote with respect to the BTU adjournment proposal or the BTU merger-related compensation proposal, it will have no effect on such proposals.

Although BTU is submitting the merger-related compensation proposal for consideration and approval, the approval of such proposal pursuant to the standard set forth above is not a condition to completion of the merger, and the vote with respect to such proposal is advisory only and will not be binding on Amtech or BTU. If the merger is completed, the merger-related compensation may be paid to BTU’s named executive officers to the extent payable in accordance with the terms of the compensation agreements and arrangements even if BTU stockholders fail to approve the advisory vote regarding merger-related compensation.

Voting on Proxies; Incomplete Proxies

A BTU stockholder may vote by proxy or in person at the BTU special meeting. If you hold your shares of BTU common stock in your name as a stockholder of record, to submit a proxy, you, as a BTU stockholder, may use one of the following methods:

- By telephone: by calling the toll-free number indicated on the proxy card and following the recorded instructions.
- Through the Internet: by visiting the website indicated on the proxy card and following the instructions.
- Complete and return the proxy card in the enclosed envelope. The envelope requires no additional postage if mailed in the United States.

BTU requests that BTU stockholders vote by telephone, over the Internet or by completing and signing the accompanying proxy card and returning it as soon as possible in the enclosed postage-paid envelope. When the accompanying proxy card is returned properly executed, the shares of BTU stock represented by it will be voted at the BTU special meeting in accordance with the instructions contained on the proxy card. If any proxy card is returned without indication as to how to vote, the shares of BTU common stock represented by the proxy card will be voted as recommended by the BTU board of directors.

If a BTU stockholder’s shares are held in “street name” by a broker, bank or other nominee, the stockholder should check the voting form used by that firm to determine whether it may vote by telephone or the Internet.

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Every BTU stockholder's vote is important. Accordingly, each BTU stockholder should sign, date and return the enclosed proxy card, or vote via the Internet or by telephone, whether or not the BTU stockholder plans to attend the BTU special meeting in person. Sending in your proxy card or voting by telephone or on the Internet will not prevent you from voting your shares personally at the meeting, since you may revoke your proxy at any time before it is voted.

Shares Held in Street Name

If you are a BTU stockholder and your shares are held in "street name" through a bank, broker or other holder of record, you must provide the record holder of your shares with instructions on how to vote the shares. Please follow the voting instructions provided by the bank or broker. You may not vote shares held in street name by returning a proxy card directly to BTU or by voting in person at the BTU special meeting unless you provide a "legal proxy," which you must obtain from your broker, bank or other nominee. Further, banks or other nominees who hold shares of BTU common stock on behalf of their customers may not give a proxy to BTU to vote those shares with respect to any of the proposals without specific instructions from their customers, as brokers, banks and other nominees do not have discretionary voting power on these matters.

Revocability of Proxies and Changes to a BTU Stockholder's Vote

You have the power to change your vote at any time before your shares of BTU common stock are voted at the BTU special meeting by:

- attending and voting in person at the BTU special meeting;
- giving notice of revocation of the proxy at the BTU special meeting;
- voting by telephone or the Internet at a later time; or
- delivering to the Corporate Secretary of BTU at 23 Esquire Road, North Billerica, MA 01862 (i) a written notice of revocation or (ii) a duly executed proxy card relating to the same shares and matters to be considered at the BTU special meeting, bearing a date later than the proxy card previously executed.

Attendance at the BTU special meeting will not in and of itself constitute a revocation of a proxy.

If you choose to send a completed proxy card bearing a later date than your original proxy card, the new proxy card must be received before the beginning of the BTU special meeting. If you have instructed a bank, broker or other nominee to vote your shares of BTU common stock, you must follow the directions you receive from your bank, broker or other nominee in order to change or revoke your vote.

Delivery of Proxy Materials

As permitted by applicable law, only one copy of this joint proxy statement/prospectus is being delivered to stockholders residing at the same address, unless such stockholders have notified BTU of their desire to receive multiple copies of the joint proxy statement/prospectus.

BTU will promptly deliver, upon oral or written request, a separate copy of the joint proxy statement/prospectus to any stockholder residing at an address to which only one copy of such document was mailed. Requests for additional copies should be directed to Investor Relations, at BTU's corporate offices, 23 Esquire Road, North Billerica, MA 01862 or by telephone at (978) 667-4111 ext. 107.

Solicitation of Proxies

In addition to solicitation by mail, directors, officers, and employees of BTU may solicit proxies by personal interview, telephone, or electronic mail. BTU reimburses brokerage houses, custodians, nominees, and fiduciaries for their expenses in forwarding proxies and proxy material to their principals. BTU has retained Georgeson, Inc. to assist in the solicitation of proxies, which firm will, by agreement, receive compensation of approximately \$10,000 plus reasonable expenses for these services. BTU will bear the entire cost of soliciting proxies from you.

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Attending the BTU Special Meeting

Subject to space availability, all BTU stockholders as of the record date, or their duly appointed proxies, may attend the BTU special meeting. Since seating is limited, admission to the BTU special meeting will be on a first-come, first-served basis. Registration and seating will begin at [] A.M., local time.

If you hold your shares of BTU common stock in your name as a stockholder of record and you wish to attend the BTU special meeting, please bring your proxy card and evidence of your stock ownership, such as your most recent account statement, to the BTU special meeting. You should also bring a valid government-issued photo identification card.

If your shares of BTU common stock are held in “street name” in a stock brokerage account or by a bank or nominee and you wish to attend the BTU special meeting, you need to bring a copy of a bank or brokerage statement to the BTU special meeting reflecting your stock ownership as of the record date. You should also bring valid picture identification.

Other Matters to Come Before the BTU Special Meeting

Management knows of no other business to be presented at the BTU special meeting, but if any other matters are properly presented to the meeting or any adjournments thereof, the persons named in the proxies will vote upon them in accordance with the board of directors’ recommendations.

Assistance

If you need assistance in completing your proxy card, have questions regarding BTU’s special meeting or would like additional copies of this joint proxy statement/prospectus, please contact Investor Relations at (978) 667-4111 ext. 107 or BTU’s proxy solicitor, Georgeson, Inc., at (866) 821-2570.

BTU PROPOSALS

**PROPOSAL NO. 1
BTU MERGER PROPOSAL**

BTU is asking its stockholders to adopt the merger agreement and approve the transactions contemplated thereby. Holders of BTU common stock should read this joint proxy statement/prospectus carefully and in its entirety, including the annexes, for more detailed information concerning the merger agreement and the merger. A copy of the merger agreement is attached to this joint proxy statement/prospectus as Annex A.

After careful consideration, the BTU board of directors, by a unanimous vote of all directors, approved the merger agreement and declared the merger agreement and the transactions contemplated thereby, including the merger, to be advisable and in the best interest of BTU and the stockholders of BTU. See “The Merger—BTU’s Reasons for the Merger; Recommendation of BTU’s Board of Directors” beginning on page 106 of this joint proxy statement/prospectus for a more detailed discussion of the BTU board of directors’ recommendation.

The BTU board of directors recommends a vote “FOR” the BTU merger proposal.

**PROPOSAL NO. 2
BTU ADJOURNMENT PROPOSAL**

The BTU special meeting may be adjourned to another time or place, if necessary or appropriate, to solicit additional proxies if there are insufficient votes at the time of the BTU special meeting to adopt the BTU merger proposal.

If, at the BTU special meeting, the number of shares of BTU common stock present or represented and voting in favor of the BTU merger proposal is insufficient to adopt the BTU merger proposal, BTU intends to move to adjourn the BTU special meeting in order to enable the BTU board of directors to solicit additional proxies for approval of the merger. In that event, BTU will ask its stockholders to vote upon the BTU adjournment proposal, but not the BTU merger proposal or the BTU merger-related compensation proposal.

In this proposal, BTU is asking its stockholders to authorize the holder of any proxy solicited by the BTU board of directors on a discretionary basis to vote in favor of adjourning the BTU special meeting to another time and place for the purpose of soliciting additional proxies, including the solicitation of proxies from BTU stockholders who have previously voted.

The BTU board of directors recommends a vote “FOR” the BTU adjournment proposal.

**PROPOSAL NO. 3
BTU MERGER-RELATED COMPENSATION PROPOSAL**

Pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and Rule 14a-21(c) of the Exchange Act, BTU is seeking non-binding, advisory stockholder approval of the compensation of BTU’s named executive officers that is based on or otherwise relates to the merger as disclosed in “The Merger—Merger-Related Compensation for BTU’s Named Executive Officers” beginning on page 131. The proposal gives BTU’s stockholders the opportunity to express their views on the merger-related compensation of BTU’s named executive officers. Accordingly, BTU is requesting stockholders to adopt the following resolution, on a non-binding, advisory basis:

“RESOLVED, that the compensation that may be paid or become payable to BTU’s named executive officers in connection with the merger and the agreements or understandings pursuant to which such compensation may be paid or become payable, in each case as disclosed pursuant to Item 402(t) of Regulation S-K in “The Merger—Interests of BTU Directors and Executive Officers in the Merger—Merger-Related Compensation for BTU’s Named Executive Officers,” are hereby APPROVED.”

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Approval of this proposal is not a condition to completion of the merger, and the vote with respect to this proposal is advisory only and will not be binding on Amtech or BTU. If the merger is completed, the merger-related compensation may be paid to BTU's named executive officers to the extent payable in accordance with the terms of the compensation agreements and arrangements even if BTU stockholders fail to approve the advisory vote regarding merger-related compensation.

The BTU board of directors recommends a vote "FOR," on an advisory basis, the BTU merger-related compensation proposal.

THE AMTECH SPECIAL MEETING

This section contains information for Amtech stockholders about the special meeting that Amtech has called to allow its stockholders to consider and vote on the merger agreement and other related matters. Amtech is mailing this joint proxy statement/prospectus to you, as an Amtech stockholder, on or about [], 2014. This joint proxy statement/prospectus is accompanied by a notice of the special meeting of Amtech stockholders and a form of proxy card that Amtech's board of directors is soliciting for use at the special meeting and at any adjournments or postponements of the special meeting.

Date, Time and Place of Meeting

The special meeting will be held on [], 2014 at [insert location], at [] A.M. local time.

Matters to Be Considered

At the special meeting of stockholders, you will be asked to consider and vote upon the following matters:

- the Amtech merger proposal;
- the Amtech adjournment proposal; and
- to transact such other business as may properly come before the meeting or any adjournment thereof.

Recommendation of Amtech's Board of Directors

Amtech's board of directors has determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable and in the best interests of Amtech and its stockholders, has unanimously approved the merger agreement and unanimously recommends that Amtech stockholders vote "FOR" the Amtech merger proposal and "FOR" the Amtech adjournment proposal. See "The Merger—Amtech's Reasons for the Merger; Recommendation of Amtech's Board of Directors" beginning on page 117 for a more detailed discussion of Amtech's board of directors' recommendation.

Record Date and Quorum

Amtech's board of directors has fixed the close of business on [] as the record date for determining the holders of Amtech common stock entitled to receive notice of and to vote at the Amtech special meeting.

As of the record date, there were [] shares of Amtech common stock outstanding and entitled to vote at the Amtech special meeting held by approximately [] holders of record. Each share of Amtech common stock entitles the holder to one vote at the Amtech special meeting on each proposal to be considered at the Amtech special meeting.

As of the record date, the directors and executive officers of Amtech and their affiliates owned and were entitled to vote [] shares of Amtech common stock, representing approximately []% of the shares of Amtech common stock outstanding on that date. Amtech currently expects that Amtech's directors and executive officers will vote their shares in favor of the Amtech merger proposal, and the Amtech adjournment proposal, although none of them (other than Mr. Whang as described in the section of this joint proxy statement/prospectus entitled "The Merger—Voting Agreements") have entered into any agreements obligating them to do so.

The presence at the special meeting, in person or by proxy, of holders of a majority of the outstanding shares of Amtech common stock entitled to vote at the special meeting will constitute a quorum for the transaction of business. All shares of Amtech common stock present in person or represented by proxy, including abstentions and broker non-votes, will be treated as present for purposes of determining the presence or absence of a quorum for all matters voted on at the Amtech special meeting.

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Required Vote; Treatment of Abstentions and Failure to Vote

Amtech merger proposal:

- **Standard:** The affirmative vote of a majority of the outstanding shares of Amtech common stock entitled to vote on the proposal.
- **Effect of abstentions and broker non-votes:** If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the Amtech special meeting or fail to instruct your bank or broker how to vote with respect to the Amtech merger proposal, it will have the same effect as a vote “AGAINST” the proposal.

Amtech adjournment proposal:

- **Standard:** The affirmative vote of a majority of votes cast (in person or by proxy) at the Amtech special meeting and entitled to vote on such proposals.
- **Effect of abstentions and broker non-votes:** If you mark “ABSTAIN” on your proxy card, fail to submit a proxy card or vote in person at the Amtech special meeting or fail to instruct your bank or broker how to vote with respect to the Amtech adjournment proposal, it will have no effect on such proposal.

Voting on Proxies; Incomplete Proxies

An Amtech stockholder may vote by proxy or in person at the Amtech special meeting. If you hold your shares of Amtech common stock in your name as a stockholder of record, to submit a proxy, you, as an Amtech stockholder, may use one of the following methods:

- By telephone: by calling the toll-free number indicated on their proxy card and following the recorded instructions.
- Through the Internet: by visiting the website indicated on their proxy card and following the instructions.
- Complete and return the proxy card in the enclosed envelope. The envelope requires no additional postage if mailed in the United States.

Amtech requests that Amtech stockholders vote by telephone, over the Internet or by completing and signing the accompanying proxy card and returning it to Amtech as soon as possible in the enclosed postage-paid envelope. When the accompanying proxy card is returned properly executed, the shares of Amtech stock represented by it will be voted at the Amtech special meeting in accordance with the instructions contained on the proxy card. If any proxy card is returned without indication as to how to vote, the shares of Amtech common stock represented by the proxy card will be voted as recommended by the Amtech board of directors.

If an Amtech stockholder’s shares are held in “street name” by a broker, bank or other nominee, the stockholder should check the voting form used by that firm to determine whether it may vote by telephone or the Internet.

Every Amtech stockholder’s vote is important. Accordingly, each Amtech stockholder should sign, date and return the enclosed proxy card, or vote via the Internet or by telephone, whether or not the Amtech stockholder plans to attend the Amtech special meeting in person. Sending in your proxy card or voting by telephone or on the Internet will not prevent you from voting your shares personally at the meeting, since you may revoke your proxy at any time before it is voted.

Shares Held in “Street Name”; Broker Non-Votes

If you are an Amtech stockholder and your shares are held in “street name” through a bank, broker or other holder of record, you must provide the record holder of your shares with instructions on how to vote the shares. Please follow the voting instructions provided by the bank or broker. You may not vote shares held in street name by returning a proxy card directly to Amtech or by voting in person at the Amtech special meeting unless you provide a “legal proxy,” which you must obtain from your broker, bank or other nominee. Further, banks or other nominees who hold shares of Amtech common stock on behalf of their customers may not give a proxy to Amtech to vote those shares with respect to any of the proposals without specific instructions from their customers, as brokers, banks and other nominees do not have discretionary voting power on these matters.

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Revocability of Proxies and Changes to an Amtech Stockholder's Vote

You have the power to change your vote at any time before your shares of Amtech common stock are voted at the Amtech special meeting by:

- attending and voting in person at the Amtech special meeting;
- giving notice of revocation of the proxy at the Amtech special meeting;
- voting by telephone or the Internet at a later time; or
- delivering to the Corporate Secretary of Amtech at 131 South Clark Drive Tempe, Arizona 85281 (i) a written notice of revocation or (ii) a duly executed proxy card relating to the same shares and matters to be considered at the Amtech special meeting, bearing a date later than the proxy card previously executed.

Attendance at the Amtech special meeting will not in and of itself constitute a revocation of a proxy.

If you choose to send a completed proxy card bearing a later date than your original proxy card, the new proxy card must be received before the beginning of the Amtech special meeting. If you have instructed a bank, broker or other nominee to vote your shares of Amtech common stock, you must follow the directions you receive from your bank, broker or other nominee in order to change or revoke your vote.

Solicitation of Proxies

Amtech is soliciting your proxy in conjunction with the merger. Amtech will bear the entire cost of soliciting proxies from you. In addition to solicitation of proxies by mail, Amtech will request that banks, brokers and other record holders send proxies and proxy material to the beneficial owners of Amtech common stock and secure their voting instructions. Amtech will reimburse the record holders for their reasonable expenses in taking those actions. If necessary, Amtech may use its directors and several of its regular employees, who will not be specially compensated, to solicit proxies from the Amtech stockholders, either personally or by telephone, facsimile, letter or electronic means. Amtech has also made arrangements with Georgeson, Inc. to assist it in soliciting proxies and has agreed to pay Georgeson, Inc. approximately \$7,500 plus reasonable expenses for these services.

Attending the Meeting

Subject to space availability, all Amtech stockholders as of the record date, or their duly appointed proxies, may attend the Amtech special meeting. Since seating is limited, admission to the Amtech special meeting will be on a first-come, first-served basis. Registration and seating will begin at [] A.M., local time.

If you hold your shares of Amtech common stock in your name as a stockholder of record and you wish to attend the Amtech special meeting, please bring your proxy card and evidence of your stock ownership, such as your most recent account statement, to the Amtech special meeting. You should also bring valid picture identification.

If your shares of Amtech common stock are held in "street name" in a stock brokerage account or by a bank or nominee and you wish to attend the Amtech special meeting, you need to bring a copy of a bank or brokerage statement to the Amtech special meeting reflecting your stock ownership as of the record date. You should also bring valid picture identification.

Delivery of Proxy Materials

As permitted by applicable law, only one copy of this joint proxy statement/prospectus is being delivered to stockholders residing at the same address, unless such stockholders have notified Amtech of their desire to receive multiple copies of the joint proxy statement/prospectus.

Amtech will promptly deliver, upon oral or written request, a separate copy of the joint proxy statement/prospectus to any stockholder residing at an address to which only one copy of such document was mailed. Requests for additional copies should be directed to Investor Relations at Amtech's corporate offices, 131 South Clark Drive Tempe, Arizona 85281 or by telephone at (480) 967-5146.

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Other Matters to Come Before the Amtech Special Meeting

Management knows of no other business to be presented at the Amtech special meeting, but if any other matters are properly presented at the meeting or any adjournments thereof, the persons named in the proxies will vote upon them in accordance with the board of directors' recommendations.

Assistance

If you have any questions concerning the merger or this joint proxy statement/prospectus, would like additional copies of this joint proxy statement/prospectus or need help voting your shares of Amtech common stock, please contact Amtech's proxy solicitor, Georgeson, Inc., at (866) 647-8872.

AMTECH PROPOSALS

PROPOSAL NO. 1 AMTECH MERGER PROPOSAL

Amtech is asking its stockholders to adopt the merger agreement and approve the transactions contemplated thereby. Holders of Amtech common stock should read this joint proxy statement/prospectus carefully and in its entirety, including the annexes, for more detailed information concerning the merger agreement and the merger. A copy of the merger agreement is attached to this joint proxy statement/prospectus as Annex A.

After careful consideration, the Amtech board of directors, by a unanimous vote of all directors, approved the merger agreement and declared the merger agreement and the transactions contemplated thereby, including the merger, to be advisable and in the best interest of Amtech and the stockholders of Amtech. See “The Merger—Amtech’s Reasons for the Merger; Recommendation of Amtech’s Board of Directors” beginning on page 117 in this joint proxy statement/prospectus for a more detailed discussion of the Amtech board of directors’ recommendation.

The Amtech board of directors recommends a vote “FOR” the Amtech merger proposal.

PROPOSAL NO. 2 AMTECH ADJOURNMENT PROPOSAL

The Amtech special meeting may be adjourned to another time or place, if necessary or appropriate, to solicit additional proxies if there are insufficient votes at the time of the Amtech special meeting to adopt the Amtech merger proposal.

If, at the Amtech special meeting, the number of shares of Amtech common stock present or represented and voting in favor of the Amtech merger proposal is insufficient to adopt the Amtech merger proposal, Amtech intends to move to adjourn the Amtech special meeting in order to enable the Amtech board of directors to solicit additional proxies for approval of the merger. In that event, Amtech will ask its stockholders to vote upon the Amtech adjournment proposal, but not the Amtech merger proposal.

In this proposal, Amtech is asking its stockholders to authorize the holder of any proxy solicited by the Amtech board of directors on a discretionary basis to vote in favor of adjourning the Amtech special meeting to another time and place for the purpose of soliciting additional proxies, including the solicitation of proxies from Amtech stockholders who have previously voted.

The Amtech board of directors recommends a vote “FOR” the Amtech adjournment proposal.

INFORMATION ABOUT AMTECH

Amtech, which was incorporated in Arizona in October 1981, operates in two business segments: (i) solar and semiconductor equipment and (ii) polishing supplies. Amtech is a global manufacturer of capital equipment, including thermal processing, silicon wafer handling automation, and ion implant equipment and related consumables used in fabricating solar cells, LED and semiconductor devices. Semiconductors, or semiconductor chips, are fabricated on silicon wafer substrates, sliced from ingots, and are part of the circuitry, or electronic components, of many products including solar cells, computers, telecommunications devices, automotive products, consumer goods, and industrial automation and control systems. Amtech’s wafer handling, thermal processing and consumable products currently address the diffusion, oxidation, and deposition steps used in the fabrication of solar cells, LEDs, semiconductors, microelectromechanical systems (MEMS) and the polishing of newly sliced silicon wafers.

Amtech’s stock is traded on NASDAQ under the symbol “ASYS”.

Amtech’s principal office is located at 131 South Clark Drive Tempe, Arizona 85281. Additional information about Amtech and its subsidiaries is included in documents incorporated by reference in this joint proxy statement/prospectus. See “Where You Can Find More Information,” beginning on page 163.

INFORMATION ABOUT BTU

Overview

BTU, which was founded in 1950, was incorporated as a Delaware corporation in 1981 and is headquartered in North Billerica, Massachusetts. BTU operates as a single business segment called Thermal Processing Capital Equipment. BTU's business consists of the designing, manufacturing, selling and servicing of thermal processing equipment and related process controls for use in the electronics, alternative energy, automotive and other industries. This includes the supply of solder reflow systems used for surface mount applications in printed circuit board assembly. Thermal processing equipment is used in: low temperature curing/encapsulation; hybrid integrated circuit manufacturing; integrated circuit packaging and sealing; and processing multi-chip modules. In addition, the equipment is used for solar cell processing, sintering nuclear fuel for commercial power generation, as well as brazing and the sintering of ceramics and powdered metals, and the deposition of precise thin film coatings. BTU's customers are multinational original equipment manufacturers and contract manufacturing companies.

BTU's customers require high throughput, high yield and highly reliable thermal processing systems with tightly controlled temperature and atmospheric parameters. In electronics assembly, BTU's convection solder reflow systems are used to attach electronic components to the printed circuit boards, primarily in the advanced, high-density, surface mount segments of this market. In the semiconductor market, BTU participates in both wafer level and die level packaging, where its thermal processing systems are used to connect and seal integrated circuits into a package. In the solar market, BTU offers processing equipment for both silicon and thin film photovoltaics. In the alternative energy market, BTU's customers use its thermal systems for the processing of nuclear fuel.

Industry Background

Electronics Markets

Demand for increasingly sophisticated electronic devices continues, and BTU expects that new technologies such as wireless networks, next generation cellular phones and tablets will help to drive future growth. Electronic equipment continues to become more complex, yet end users are still demanding smaller, lighter and less expensive devices. This, in turn, requires increased performance and reduced cost, size, weight and power requirements of electronic assemblies, printed circuit boards and semiconductors. In response to these developments, manufacturers are increasingly employing more sophisticated production and assembly techniques requiring more advanced manufacturing equipment, such as that supplied by BTU.

Printed Circuit Board Assembly. In the printed circuit board assembly process, semiconductor and discrete-devices plus other components are attached to printed circuit boards. The attachment process, which creates a permanent physical and electrical bond, is called solder reflow or surface mount reflow. Manufacturers rely on high throughput and highly reliable equipment to get the maximum efficiency in their production process.

Wafer Level and Die Level Semiconductor Packaging. Semiconductor packaging processes include precision thermal processing steps. In advanced semiconductor packaging, processing takes place at both the wafer level and die level. At the wafer level, deposited solder must be thermally treated to form perfectly spherical "bumps." At the die level, these bumps allow the integrated circuits to be bonded to the semiconductor package. Advancements in the semiconductor industry toward higher chip speeds, smaller form factors and reduced costs are driving the transition to wafer level packaging from the traditional wire bonding technique.

Across all markets, the need for more versatile, more reliable and more advanced capital equipment persists. In addition, the continued globalization of manufacturing and the shift to low cost regions such as China, particularly for electronics and silicon photovoltaic producers, has driven the demand for equipment with a lower cost of ownership.

Alternative Energy Markets

BTU's alternative energy business primarily addresses two markets: the manufacturing of solar cells and nuclear fuels.

Photovoltaics. Silicon photovoltaic applications are served by BTU's metallization and annealing furnaces and in-line diffusion systems.

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BTU's metallization products include the recently introduced SINTERRA™ metallization firing furnace. SINTERRA™ combines advanced process features with industry-leading uptime as the new flagship of the BTU metallization line. These systems generally range in price from \$100,000 to \$250,000.

The MERIDIAN™ thermal processing system is used for phosphorous diffusion. This system is targeted for customers transitioning from batch to in-line processing. The MERIDIAN™ sells in the range of \$700,000 to \$1.3 million.

BTU offers solar processing equipment for both silicon and thin film photovoltaics. In thin film photovoltaics, BTU's equipment is used for both the Copper Indium Gallium Selenide (CIGS) and Cadmium Telluride (CdTe) processes. These thin film systems generally sell in the range of \$800,000 to \$2.0 million.

Nuclear Fuel. Another application for BTU systems is for sintering nuclear fuel. These sintering processes operate at approximately 1750°C in a hydrogen reduction atmosphere. Our leading product for this application is our patented Walking Beam system, which is ideally suited for the high volume manufacture of nuclear fuels. It uses a walking beam transport system to eliminate friction associated with the conveyance of heavy loads through the process chamber. Walking Beam systems, which are used to sinter gadolinium and uranium pellets used for nuclear fuel generation, generally sell in the range of \$2.7 million to \$3.3 million.

Technological Challenges

Continuous thermal processing systems present significant engineering challenges related to temperature control, atmosphere control, product handling, flux containment and disposal, and high system up time. Thermal processing systems must maintain accurate and uniform temperatures within their process chambers. The temperature within the process chamber is influenced by the rate at which components are moved through the system and the weight and density of the product. In addition, the thermal processing system's heat convection and/or radiation rate must be varied and controlled as components and materials are processed. The chamber must also dispense heat uniformly across the product at precise temperatures to ensure maximum process uniformity. Products must be heated and cooled at closely preset rates in order to avoid damage caused by thermal stress.

Another technological challenge for continuous thermal processing systems is achieving precisely controlled atmospheric conditions within the process chamber. In order to facilitate thermal processing without contamination of or damage to the product, many thermal processing systems use a substantially oxygen-free atmosphere of nitrogen or hydrogen in their process chambers. If such gases are used, the exit of process gases and/or the entry of contaminating air must be minimized, even though the product enters and exits the system continuously from the ambient atmosphere. Maintaining a pure, safe and controlled atmosphere in the open process chamber, while minimizing the consumption of nitrogen or hydrogen gases in order to reduce operating costs, presents significant engineering challenges.

Handling products in thermal processing systems requires highly reliable conveyance systems that can easily be converted to process a wide variety of products having different specifications, sometimes on side-by-side tracks through the process chamber. The product handling system must also fully support a wide variety of product sizes.

The mechanical components in thermal processing systems must operate almost continuously in a demanding, elevated temperature environment with frequent thermal cycles. The use of materials that are resistant to high temperature and thermal stress is important to achieving high reliability.

In applications using flux or other process chemicals, the volatile compounds that are vaporized during the thermal processing cycle must be safely contained and collected so that they do not condense in the system or damage the environment. The efficient containment, collection and disposal of the flux or other process chemicals are important factors in achieving high system up time, high throughput and reliability.

BTU's Solution

BTU delivers a broad range of thermal processing systems to serve the needs of manufacturers that require high throughput, process yields and reliability with tightly controlled process parameters. BTU's systems are designed to enable BTU's customers

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to increase product performance, throughput and yield for electronics assembly, solar cell processing and nuclear fuel sintering by providing precise atmospheric and temperature control. In addition to the expected high performance of BTU's products, BTU believes maintaining the quality standards of its organization and its worldwide service and support are important to its success with industry leading global manufacturers.

BTU believes its customers continue to choose its products because of the following factors:

Accurate and Uniform Temperature. BTU's systems use convection, radiation and infrared heating technologies. BTU's high-rate convection and fully-enclosed coil heating modules are designed to provide controlled heating capacities across many different applications, thereby enabling BTU's customers to maximize process uniformity and throughput. In addition, BTU's systems are designed to apply heat uniformly across the product load, which is critical to ensure optimum processing. Heat up and cool down profiles are also closely controlled for process consistency and the protection of product.

Atmosphere Uniformity and Control. BTU's thermal processing systems are designed to provide precision control over atmospheric conditions within their process chambers by integrating its gas and physical curtain technologies. BTU's systems are designed to be capable of excluding virtually all oxygen from the critical process steps to maintain the safety and integrity of the process chamber atmosphere. In addition, BTU's systems are intended to minimize the consumption of nitrogen or hydrogen, thereby reducing the operating cost of maintaining the atmosphere.

Repeatability from System to System. BTU designs its systems to provide a high degree of repeatability from system to system through its atmospheric and temperature controls and the expected reliability of its systems. This repeatability is achieved through BTU's industry leading closed loop convection technology that is intended to ensure the same convection rate regardless of change in altitude or temperature. This is a critical attribute because BTU's customers must achieve consistent, uniform manufacturing performance in plants located throughout the world.

Processing Flexibility. Major electronics and solar cell manufacturers process many sizes of products and often need rapid product changeover capabilities. BTU's systems can process printed circuit boards or solar cells of different sizes with minimal or no reconfiguration. Rapid changeover reduces down time and increases manufacturing volume. In addition, BTU's solar cell processing equipment can be configured for multiple process applications allowing for versatility in materials manufacturing.

Reliability. BTU's customers place a high premium on reliability. Reliability is a major contributor to low cost of ownership because high up time can increase the productivity and efficiency of an entire production line. BTU believes its systems are the most reliable advanced thermal processing systems in the world.

Systems Integration. BTU provides fully integrated systems that include automated handling of its products, as well as full software integration with BTU's customers' factory management systems. This allows BTU's customers to monitor and analyze the process in real time from a central location.

Worldwide Customer Support. BTU's goal is to provide its customers with global technical service support, in-depth process engineering support and rapid delivery of its systems and parts. BTU provides its customer support through its on-site direct service organization and its independent sales and service representatives, supplemented with twenty-four hours a day, seven days a week telephone support and extensive customer training programs.

BTU's Strategy

BTU's objective is to be the leading provider of thermal and other processing systems to the electronics assembly and alternative energy markets. To achieve this goal and maximize value for BTU's shareholders, BTU's strategy includes the following elements:

1. Deepen relationships with key partners to facilitate product and process development for next generation technologies;
2. Continue to focus on cost reduction initiatives, including the improvement of BTU's global supply chain and reduction in materials costs;
3. Further penetrate existing markets, such as electronics, and new customers by developing innovative products with a low cost of ownership and by offering exceptional customer support; and
4. Expand BTU's low-cost manufacturing and engineering operations in China.

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Products

BTU supplies a broad range of primarily thermal processing systems for the electronics assembly and alternative energy markets. BTU's products are used for such applications as printed circuit board assembly and semiconductor packaging, solar cell manufacturing and nuclear fuel processing. Most of BTU's products are used for thermal processing operations; typically having a processing chamber that allows products to enter and exit in a continuous mode through the process chamber via a transport mechanism—in most cases a conveyor belt. A control system regulates a series of electric heaters to produce a consistent, even temperature profile through radiant, convection or infrared heating as required by the customers' process.

Electronics Products

Printed Circuit Board Assembly. BTU currently sells thermal processing systems used in the solder reflow and curing stages of printed circuit board assembly. BTU's printed circuit board assembly products are used primarily in the advanced, high-density segments of the market that utilize surface mount technology.

At the end of 2012, BTU announced the DYNAMO™, the newest reflow oven platform, designed specifically for processing portable electronics. The DYNAMO™ convection reflow oven is positioned to maximize customer value for portable electronics manufacturers, where products are typically lighter, smaller and less complex than other applications. Featuring a new convection design, the DYNAMO™ delivers high efficiency through innovative thermal transfer delivering excellent temperature and gas flow uniformity across the chamber. The DYNAMO platform is targeted geographically in markets with high concentrations of portable electronics manufacturers such as Asia and South America.

BTU's PYRAMAX™ family of convection reflow systems is designed on a single platform to be rapidly configurable, which is intended to reduce the product build cycle and allow BTU to meet customer demands for shorter delivery lead times. BTU believes PYRAMAX™ products offer its customers reduced capital cost, lower nitrogen consumption and reduced scheduled maintenance cycles.

PYRAMAX™ systems provide increased process flexibility due to their ability to process printed circuit boards up to 24 inches wide. Rated up to 400°C, these products are designed to be capable of operating in air or nitrogen atmospheres and to have increased convection flow for greater performance and lead free processes. PYRAMAX™ utilizes impingement technology to transfer heat to the substrate. These systems are offered in 6, 8, 10 and 12-zone heated lengths and are capable of processing lead free solder. They generally range in price from \$40,000 to \$150,000.

The market need for lead free solder reflow presents a unique challenge by requiring a process temperature that is critically close to the destruct temperature of the components that are being attached. The PYRAMAX™ system's unique closed loop convection control is designed to provide a repeatable tight temperature window that is optimized for lead free solder reflow.

The solder reflow process requires the thermal processing system to manage flux residues eliminated during the processing of the printed circuit boards. PYRAMAX™ systems are equipped with a patented flux management system that is structured to isolate the flux outside the main process chamber, thereby helping to maintain the integrity of the atmosphere and facilitate easy disposal.

Wafer Level and Die Level Semiconductor Packaging. We sell several systems for the thermal processes used in advanced semiconductor packaging.

Flip-chip reflow provides the physical and electronic bond of the semiconductor device to its package. The PYRAMAX™ families of convection reflow systems, utilizing our closed loop convection technology, rate at up to 400°C and operate in air or nitrogen atmospheres. These products utilize impingement technology to transfer heat to the substrate. Using thermal power arrays of five-kilowatt heaters, they can process substrates in dual lane, dual speed configurations, thereby enabling our customers to double production without increasing the machine's footprint. These products are available in four models based on the heated lengths of thermal processing chambers. Heated length is based on the required production rate and loading requirements. The products generally range in price from \$70,000 to \$180,000.

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Alternative Energy Products

The processing of advanced materials used in non-fossil fuel power generation applications is a significant target market. The cost fluctuations of fossil fuels and environmental concerns have increased demand for “clean” power. For power generation applications, BTU serves the solar cell and nuclear fuel markets. BTU supports its worldwide alternative energy customers through its global sales and service network.

Solar Cells. BTU offers solar processing equipment for both silicon and thin film photovoltaics. Silicon photovoltaic applications are served by BTU’s metallization, in-line diffusion, and annealing processes and systems. BTU’s MERIDIAN™ in-line diffusion system features the MERIDIAN™ diffusion furnace and phosphorus coater, which includes key advances such as back-side and top-side coating and an integrated dryer. The system can be configured to achieve up to 1500 (156mm) wafers per hour and can also be configured to use third party coating applications. The in-line process offers reduced wafer handling and greater throughput than traditional batch processing. Reduced handling translates into lower breakage rates, improved yield and lower cost of ownership. The MERIDIAN™ system price starts at \$700,000 and varies depending on configuration.

For the metallization process, BTU offers a complete line of Rapid Thermal Processing furnaces utilizing near infrared heating technology. Systems come in varying lengths and widths to suit specific throughput requirements. The product line has been specifically designed for the solar cell metallization process and is used for contact drying and firing. Specialized features include rapid heating via densely spaced tungsten lamps and rapid cooling rates obtained through proprietary water cooling technology. BTU recently introduced the SINTERRA™ metallization product line. SINTERRA™ combines advanced process features with industry-leading uptime as the new flagship of the BTU metallization line. These systems generally range in price from \$100,000 to \$250,000.

To improve solar cell efficiency and reduce manufacturing cost, the solar market invests aggressively in new technologies. BTU offers next generation thermal processing equipment to enable such new technologies.

Annealing of additional and/or novel layers and plating are becoming important process steps. BTU has developed products for these applications, providing production scale equipment to several key solar companies and pilot units to others. BTU expects this to be an emerging business in the years to come, and BTU is well positioned to be a leader in this emerging area.

In thin film photovoltaics, BTU leverages its experience with large-scale, custom, in-line thermal processing systems. System designs are scalable and are sold for lab, pilot and production sized applications. These systems generally sell for in excess of \$1 million, although the price can vary widely based on size and features.

Nuclear Fuels. We offer both walking beam and pusher systems for sintering nuclear fuel. These processes operate at temperatures in the range of 1750°C in a hydrogen reduction atmosphere. BTU’s most important product for this market is its patented Walking Beam system designed for high volume manufacture of nuclear fuels. It uses a walking beam transport system to eliminate friction associated with the conveyance of heavy loads. Walking Beam systems are used to sinter gadolinium and uranium fuel-pellets used for nuclear power generation. These systems generally sell in the range of \$2.7 million to \$3.3 million.

Customers

Many of BTU’s principal customers are large-volume global manufacturers that use BTU’s products in multiple facilities worldwide. Of BTU’s top ten revenue generating customers in 2013, one customer accounted for \$8.2 million, or 17.4% of total net sales.

Sales and Support

BTU markets and sells its products primarily through its direct sales force and independent sales representatives throughout the world. BTU’s on-site direct service organization and its independent sales representatives provide ongoing support to customers using BTU’s products. These services include implementing continuous improvement tools related both to the cost of BTU’s products and to their technical performance. As well as process support, BTU’s strong global support infrastructure allows BTU to market future sales within its current customer base and contributes to its competitive position. BTU’s management and

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sales teams participate in periodic trade conventions, through which BTU markets its products to potential customers. BTU has implemented a software based quotation system to simplify and accelerate its sales process for its customers.

Research, Development and Engineering

BTU's efforts in 2013 and 2014 have been directed towards development of new products for both the electronics and alternative energy businesses, improvements to its offerings in the solar cell equipment market, as well as upgrades to its core in-line furnace business. Product platform extensions are being handled by its U.S. and China technical team, while most new technology is being developed in the U.S. BTU's DYNAMO™ solder reflow platform was designed through collaboration between its China and U.S. teams. BTU's engineering and applications teams are working with a number of partners to further develop processes related to metallization, annealing and in-line diffusion for both standard and next generation high efficiency cells which would uniquely benefit from BTU's type of low cost process.

BTU's development team is looking at and modeling its heating, cooling, conveyance methods, insulation, and materials of construction to enhance its furnace performance and widen the possible number of process applications available to BTU. A number of these ideas are already being made available to BTU's customers, and BTU expects this to continue. BTU is also piloting a novel heating system and investigating possible applications for it.

BTU's research, development, and engineering costs for the years ending December 31, 2013, 2012, and 2011 can be found in BTU's historic financial statements beginning on page 72.

Manufacturing and Suppliers

BTU's principal manufacturing operations consist of final assembly, systems integration and testing at its facilities in North Billerica, Massachusetts and Shanghai, China. BTU outsources the manufacture of many of its subsystems to a number of key suppliers and maintains close relationships with them while also maintaining qualified alternative suppliers. In 2004, BTU's manufacturing facility in Shanghai, China was established for BTU's electronics assembly products and solar cell metallization products, as well as local sourcing of materials.

In the past few years, BTU has substantially improved its global supply chain and reduced its material costs. BTU has upgraded and reorganized its operations organization in the U.S. In addition, BTU has leveraged its presence in China to widen the supply base for its Shanghai manufactured electronics assembly and solar cell metallization products.

Continuous improvement in the supply chain is a key strategic imperative. BTU has established a global sourcing organization, based in China, to further develop high quality, cost effective suppliers throughout the world.

BTU's commitment to developing new products, a desire to increase collaboration between engineering teams located in the U.S. and China, and the need to protect BTU's intellectual property led BTU to implement an enterprise data management system in its North Billerica and Shanghai design centers. In addition to the overall benefits of increased collaboration and information control, the system has significantly improved the productivity of China-based engineers, speeding migration of new products to manufacturing facilities in Shanghai.

BTU has outsourced the manufacture of most of its significant component systems, thereby reducing cycle time and increasing its inventory turnover. BTU seeks to adhere closely to the principles of total quality management and has been ISO 9001 certified since 1998. In its North Billerica facility, it converted to ISO 9001:2008 in October 2009, and its Shanghai, China manufacturing operations have been ISO 9001:2008 certified since July 2009. BTU's customers, suppliers and employees are strongly encouraged to provide feedback and suggestions for improvements in products and services.

Intellectual Property

BTU seeks to protect its intellectual property by filing patents on proprietary features of its advanced thermal processing systems and by challenging third parties that it believes infringe on its patents. BTU also protects its intellectual property rights, including its trademarks, trade secrets and copyrights with nondisclosure and confidentiality agreements with employees,

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consultants and key customers. As a global supplier of equipment, BTU recognizes that the laws of certain foreign countries may not protect its intellectual property to the same extent as the laws of the U.S. BTU's current portfolio includes 68 issued patents, 27 trademarks that are registered and 20 pending patent applications.

BTU licenses software programs from third-party developers and incorporates them into its products. Generally, these agreements grant BTU non-exclusive licenses to use the software and terminate only upon a material breach by BTU. BTU believes that such licenses are generally available on commercially reasonable terms from a number of licensors.

Backlog

Backlog as of December 31, 2013, was \$6.5 million, compared to \$6.2 million as of December 31, 2012. As of December 31, 2013, BTU expected to ship its year-end backlog within 40 weeks. Solder reflow systems are typically shipped within 3 to 8 weeks. The backlog of BTU's custom systems is expected to be shipped within 12 to 40 weeks. BTU includes in backlog only those orders for which the customer has issued a purchase order and for which BTU has a defined delivery schedule within 12 months. Due to possible changes in delivery schedules, lead time variations and order cancellations, BTU's backlog at any particular date is not necessarily representative of sales for any subsequent period.

Competition

Several companies compete with BTU in selling thermal processing systems. Although price is a factor in buying decisions, BTU believes that technological leadership, process capability, throughput, environmental safeguards, uptime, mean time-to-repair, cost of ownership and after-sale support have become increasingly important factors. BTU competes primarily on the basis of these criteria, rather than on the basis of price only.

BTU's principal competitors for printed circuit board assembly equipment and advanced semiconductor packaging vary by product application. BTU's principal competitors for solder reflow systems are Vitronics-Soltec, Heller, Folungwin, ERSA, and Rehm. BTU's principal competitors for advanced semiconductor packaging are Vitronics-Soltec and Heller. BTU's systems for the alternative energy markets and other applications compete primarily against products offered by Despatch, Amtech, Centrotherm, SierraTherm, Smit and Harper. BTU also faces competition from emerging low cost Asian manufacturers and other established European manufacturers.

Employees

As of December 31, 2013, BTU had 290 employees, of whom 68 were engaged in sales, marketing and service, 27 in research, development and engineering, 32 in finance and administration and 163 in operations. Of these 290 employees, 190 reside outside of the U.S. None of BTU's employees are represented by a collective bargaining agreement, and BTU believes that it has satisfactory relations with its employees.

Environmental

One of BTU's core values is protecting the environment in which it operates and the environment in which its equipment operates. Compliance with laws and regulations regarding the discharge of materials into the environment, or otherwise relating to the protection of the environment, has not had any material effects on BTU's capital expenditures, earnings or competitive position. BTU does not anticipate any material capital expenditures for environmental control in its facilities in 2014.

As an equipment manufacturer, BTU generates and disposes of small quantities of solid waste that is considered hazardous under Environmental Protection Agency ("EPA") regulations. Because BTU has historically used a waste disposal firm that disposed of the solid waste at a site that the EPA has designated as a Superfund site, BTU has been named by the EPA as one of the entities responsible for a portion of the expected clean-up costs. Based on its proportional responsibility, as negotiated with and agreed to by the EPA, BTU's liability related to this matter is \$221,613. This amount is included in Accrued Expenses on the Consolidated Balance Sheet as of September 28, 2014.

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BTU's Web Site

Our web site is www.btu.com. It provides information about BTU, and allows interested persons to obtain, free of charge, a copy of BTU's Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, including exhibits, and any amendments to those reports filed with or furnished to the Securities and Exchange Commission pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended. BTU makes these reports available through its web site as soon as reasonably practicable after its electronic filing of such materials with, or the furnishing of them to, the Securities and Exchange Commission. References to BTU's web site are inactive textual references only, and the information contained or incorporated on its web site is not a part of or incorporated into this joint proxy statement/prospectus.

Facilities

BTU maintains its headquarters in North Billerica, Massachusetts, where it owns a 150,000 square foot facility. The facility is subject to a mortgage which had an outstanding balance on September 28, 2014 of approximately \$7.3 million. BTU also operates an approximately 45,000 square foot leased manufacturing, engineering, sales and service facility in Shanghai, China.

In England, BTU leases a facility for its European and Near East sales and service operations. In the Asia Pacific region, BTU leases sales and service offices in Singapore and Malaysia.

Legal Proceedings

From time to time, BTU is involved in various legal matters arising in the ordinary course of business. BTU believes that the ultimate resolution of any existing matter will not have a material adverse effect on its business or consolidated financial results.

Shortly after BTU entered into the merger agreement with Amtech on October 21, 2014, BTU learned that two separate putative stockholder class action complaints were filed in the Court of Chancery of the State of Delaware. The first was filed on November 4, 2014, purportedly on behalf of BTU's public stockholders, against the members of the BTU Board, Amtech and Merger Sub. The complaint generally alleges, among other things, that the members of BTU's board of directors breached their fiduciary duties owed to BTU's public stockholders by causing BTU to enter into the merger agreement and by approving the merger, and that Amtech and Merger Sub aided and abetted such alleged breaches of fiduciary duties. In addition, the complaint alleges that the Merger Agreement improperly favors Amtech and unduly restricts BTU's ability to negotiate with other potential bidders. The complaint generally seeks, among other things, declaratory and injunctive relief concerning the alleged fiduciary breaches, injunctive relief prohibiting Amtech, Merger Sub, and BTU from consummating the merger, other forms of equitable relief, and compensatory damages. BTU believes that the claims are without merit and it intends to defend against the litigation vigorously on behalf of BTU and the BTU board of directors.

The second was filed on November 17, 2014, also purportedly on behalf of BTU's public stockholders, against BTU, members of the BTU board, Amtech and Merger Sub. The complaint generally alleges, among other things, that the members of BTU's board of directors breached their fiduciary duties owed to BTU's public stockholders by failing to engage in a competitive sale and bidding process, and that Amtech and Merger Sub aided and abetted such alleged breaches of fiduciary duties. The complaint further alleges that these fiduciary breaches gave Amtech an unfair advantage by failing to solicit other potential acquirers. The complaint generally seeks, among other things, injunctive relief prohibiting the defendants from consummating the Merger, compensatory damages for alleged breaches of fiduciary duties, and other forms of equitable relief. BTU also believes these claims are without merit, and it intends to defend against the litigation vigorously on behalf of BTU and the BTU board of directors.

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Management’s Discussion and Analysis of Financial Condition and Results of Operations of BTU

You should read the following discussion and analysis of financial condition and results of operations together with the “Selected Consolidated Historical Financial Data of BTU” section of this joint proxy statement/prospectus and BTU’s financial statements and the related notes included in this joint proxy statement/prospectus. In addition to historical information, the following discussion contains forward-looking statements that involve risks, uncertainties and assumptions. BTU’s actual results could differ materially from those anticipated by the forward-looking statements due to important factors including, but not limited to, those set forth in the “Risk Factors” section of this joint proxy statement/prospectus beginning on page 29.

Overview

BTU, which was founded in 1950, was incorporated as a Delaware corporation in 1981 and is headquartered in North Billerica, Massachusetts. BTU operates as a single business segment called Thermal Processing Capital Equipment. BTU’s business consists of the designing, manufacturing, selling and servicing of thermal processing equipment and related process controls for use in the electronics, alternative energy, automotive and other industries. This includes the supply of solder reflow systems used for surface mount applications in printed circuit board assembly. Thermal processing equipment is used in: low temperature curing/encapsulation; hybrid integrated circuit manufacturing; integrated circuit packaging and sealing; and processing multi-chip modules. In addition, the equipment is used for solar cell processing, sintering nuclear fuel for commercial power generation, as well as brazing and the sintering of ceramics and powdered metals, and the deposition of precise thin film coatings. BTU’s customers are multinational original equipment manufacturers and contract manufacturing companies.

BTU’s customers require high throughput, high yield and highly reliable thermal processing systems with tightly controlled temperature and atmospheric parameters. In electronics assembly, BTU’s convection solder reflow systems are used to attach electronic components to the printed circuit boards, primarily in the advanced, high-density, surface mount segments of this market. In the semiconductor market, BTU participates in both wafer level and die level packaging, where its thermal processing systems are used to connect and seal integrated circuits into a package. In the solar market, BTU offers processing equipment for both silicon and thin film photovoltaics. In the alternative energy market, BTU’s customers use BTU’s thermal systems for the processing of nuclear fuel.

Critical Accounting Policies and Significant Estimates

The following is a discussion of those accounting policies that BTU deems to be “critical”—that is, they are important to the portrayal of BTU’s financial condition and results of operations, and they reflect management’s reliance on estimates regarding matters that are inherently uncertain.

Revenue Recognition. BTU recognizes revenue in accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) Topic 605, *Revenue Recognition* (“ASC 605”). Under these guidelines, BTU recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred or services rendered, the price is fixed or determinable and payment is reasonably assured. Under these requirements, BTU recognizes revenue upon acceptance when the terms of sale include customer acceptance provisions and compliance with those customer acceptance provisions has not been previously demonstrated. Applying the requirements of ASC 605 to future sales arrangements used in BTU’s equipment sales may result in the deferral of the revenue for some equipment sales. Products shipped to customers that do not meet the threshold requirements for revenue recognition as outlined above remain in BTU’s inventory on the Consolidated Balance Sheet until revenue is recognized. Any cash collected from customers for products for which revenue has been deferred is recorded as Deferred Revenue on the Consolidated Balance Sheet.

BTU also has certain sales transactions for products which are not completed within the normal operating cycle of the business. It is BTU’s policy to account for these transactions using the percentage of completion method for revenue recognition purposes when all of the following criteria exist: (1) BTU has received the purchase order or entered into a legally binding contract, (2) the customer is credit worthy and collection is probable or customer prepayments are required at product completion milestones or specific dates, (3) the sales value of the product to be delivered is significant in amount when compared to BTU’s other products, and (4) the costs can be reasonably estimated, there is no major technological uncertainty and the total engineering, material procurement, product assembly and test cycle time extend over a period of six months or longer.

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Under the percentage of completion method, revenue and gross margins to date are recognized based upon the ratio of costs incurred to date compared to the latest estimate of total costs to complete the product as a percentage of the total contract revenue for the product. Revisions in costs and gross margin percentage estimates are reflected in the period in which the facts causing the revision become known. Provisions for total estimated losses on uncompleted contracts, if any, are made in the period in which such losses are determined. For the years ended December 31, 2013, 2012 and 2011, BTU recorded revenue of \$0, \$1,731,686 and \$2,406,714, using the percentage of completion method, respectively.

Inventory Valuation. BTU's inventories consist of material, labor and manufacturing overhead costs. BTU determines the cost of inventory based on standard cost and then adjusts inventories to actual cost at reasonable intervals to reflect current conditions to approximate the first-in, first-out method. BTU regularly reviews the quantity of inventories on hand and compares these quantities to the expected usage of each applicable product or product line. BTU's inventories are adjusted in value to the lower of costs or net realizable value. Since the value of BTU's inventories depends in part on its estimates of each product's net realizable value, adjustments may be needed to reflect changes in valuation. Any adjustments BTU is required to make to lower the value of the inventories are recorded as a charge to cost of sales and establish a new cost basis. BTU recorded inventory provisions in cost of goods sold of \$1,868,000, \$5,261,000 and \$2,294,000 for the years ended December 31, 2013, 2012 and 2011, respectively.

Stock-Based Compensation. BTU accounts for share-based compensation in accordance with the provisions of FASB ASC Topic 718, *Compensation—Stock Compensation* ("ASC 718"). Under these guidelines, BTU expenses share-based compensation under the straight-line method. The choice of a valuation technique, and the approach utilized to develop the underlying assumptions for that technique, involve significant judgments. These judgments reflect management's assessment of the most accurate method of valuing the stock options BTU issues based on our historical experience, knowledge of current conditions and beliefs of what could occur in the future given available information. BTU's judgments could change over time as additional information becomes available to BTU, or the facts underlying BTU's assumptions change over time, and any change in BTU's judgments could have a material effect on its financial statements. BTU believes that its estimates incorporate all relevant information and represent a reasonable approximation in light of the difficulties involved in valuing non-traded stock options. For the years ended December 31, 2013, 2012 and 2011, BTU recorded share based compensation of \$631,000, \$836,000 and \$1,272,000, respectively.

Accounting for Income Taxes. BTU determines its annual income tax provision in each of the jurisdictions in which it operates. This involves determining our current and deferred income tax expense as well as accounting for differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The future tax consequences attributable to these differences result in deferred tax assets and liabilities, which are included in BTU's Consolidated Balance Sheets. BTU assesses the recoverability of the deferred tax assets by considering whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. To the extent BTU believes that recovery does not meet this "more likely than not" standard as required in FASB ASC Topic 740, *Income Taxes* ("ASC 740"), it must establish a valuation allowance.

Management's judgments and estimates are required in determining BTU's income tax provision, deferred tax assets and liabilities and any valuation allowance recorded against deferred tax assets. A review of all available positive and negative evidence needs to be considered, including a company's performance, the market environment in which the company operates and the length of carryback and carryforward periods. According to those standards, a valuation allowance may be needed when the negative evidence includes cumulative losses in recent years. Therefore, cumulative losses weigh heavily in the overall assessment. As a result of management's review as of September 29, 2013, BTU concluded that it was appropriate to establish a full valuation allowance for net deferred tax assets in the China manufacturing subsidiary, where cumulative losses have been incurred during recent periods. The significant fluctuations in BTU's quarterly tax rate, exclusive of the fluctuation related to the establishment of the valuation allowance, as a percent of consolidated pre-tax income or loss, are the result of the different statutory tax rates in each of BTU's non-U.S. locations and the fluctuations of pre-tax income (loss) generated in these jurisdictions. A portion of the consolidated annual tax provision relates to Chinese withholding taxes which are not directly related to pre-tax income in China. China withholding taxes primarily result from corporate royalty charges based on the China manufacturing subsidiary net sales. U.S. taxes have had no impact to the rate fluctuation as the U.S. company operates at a loss.

BTU assesses tax positions taken on tax returns, including recognition of potential interest and penalties, in accordance with the recognition thresholds and measurement attributes outlined in ASC 740. Interest and penalties recognized, if any, would be

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classified as a component of income tax expense. An uncertain tax position represents BTU's expected treatment of a tax position taken in a filed tax return, or planned to be taken in a future tax return, that has not been reflected in measuring income tax expense for financial reporting purposes. BTU believes that it has appropriate support for the income tax positions taken and to be taken on its tax returns and that its accruals for tax liabilities are adequate for all open years based on an assessment of many factors, including past experience and interpretations of tax law applied to the facts of each matter. As of December 31, 2013 and 2012, BTU has recorded accruals of approximately \$114,000 in connection with uncertain tax positions.

BTU's major tax jurisdictions include the United States and China. BTU is no longer subject to U.S. state or local and non-U.S. income tax examinations by tax authorities in its major jurisdictions for years before 2008, except to the extent of net operating loss and tax credit carryforwards from those years. For the year ended December 31, 2013, there were no material changes to the total amount of unrecognized tax benefits. BTU does not expect any significant increases or decreases for uncertain tax positions during the next 12 months.

In the past, BTU has benefited from a partial "tax holiday" in its Shanghai manufacturing subsidiary. The Chinese government tax authorities passed legislation that imposes an equalization of income tax rates for both domestic and foreign companies at a rate of 25%. This law became effective on January 1, 2008 and has been phased in by gradually increasing our tax rate until it reached 25% in the first quarter of 2012.

Results of Operations

Year ended December 31, 2013 compared to the year ended December 31, 2012

The following table sets forth the percentage of net sales of certain items in BTU's Consolidated Statements of Operations for the periods indicated.

	Years Ended December 31,		
	2013	2012	2011
Net sales	100.0%	100.0%	100.0%
Cost of goods sold	69.2%	71.6%	62.5%
Gross profit	30.8%	28.4%	37.5%
Operating expenses:			
Selling, general and administrative	41.4%	36.1%	29.8%
Research, development and engineering	9.6%	9.4%	9.3%
Restructuring	0.0%	0.7%	0.5%
Operating loss	(20.3)%	(17.8)%	(2.1)%
Interest income	0.1%	0.1%	0.1%
Interest expense	(0.9)%	(0.8)%	(0.6)%
Foreign exchange loss	(0.4)%	(0.4)%	(0.2)%
Other income, net	0.1%	0.1%	0.5%
Loss before provision for income taxes	(21.3)%	(18.8)%	(2.3)%
Provision for income taxes	2.7%	0.1%	1.3%
Net loss	(24.0)%	(18.9)%	(3.6)%

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Year ended December 31, 2013 as compared to year ended December 31, 2012

	Years Ended December 31,				
	2013	(\$ in thousands)		2012	Percent change
		% of net sales		% of net sales	
Net sales	\$ 47,754	100.0%	\$ 58,089	100.0%	(17.8)%
Cost of goods sold	<u>33,048</u>	69.2%	<u>41,617</u>	71.6%	(20.6)%
Gross profit	14,706	30.8%	16,472	28.4%	(10.7)%
Selling, general and administrative expenses	19,786	41.4%	20,965	36.1%	(5.6)%
Research, development and engineering expenses	4,604	9.6%	5,450	9.4%	(15.5)%
Restructuring	<u>—</u>	0.0%	<u>424</u>	0.7%	(100.0)%
Operating loss	(9,684)	(20.3)%	(10,367)	(17.8)%	(6.6)%
Loss before provision for income taxes	<u>(10,177)</u>	(21.3)%	<u>(10,932)</u>	(18.8)%	(6.9)%
Provision for income taxes	1,291	2.7%	65	0.1%	1886.2%
Net loss	<u><u>\$(11,468)</u></u>	(24.0)%	<u><u>\$(10,997)</u></u>	(18.9)%	4.3%

Net Sales. Net sales in 2013 decreased by \$10.3 million or 17.8% compared to 2012. Net sales for BTU's electronics market systems decreased from \$42.0 million in 2012 to \$40.2 million in 2013, a decrease of \$1.8 million or 4.4%. The alternative energy systems sales decreased from \$7.4 million in 2012 to \$1.6 million in 2013, a decrease of \$5.9 million or 79.1%. The other market systems, parts and service sales decreased from \$8.6 million in 2012 to \$6.0 million in 2013, a decrease of \$2.6 million or 30.3%. The electronic market systems decrease represents a decrease in demand for Surface Mount Technology systems and other electronics, particularly in Asia, offset by an increase in demand for semiconductor packaging systems in the United States. BTU's alternative energy systems 2013 sales decrease as compared to 2012 was due to the continued weakening of the worldwide solar industry which started in the second quarter of 2011. The other market systems, parts and service 2013 sales decrease as compared to 2012 was due to the cyclical nature of the parts and service business combined with a decrease in other market system sales.

As a result of the weakness in capital spending in the solar industry, BTU expects minimal revenue from solar products in the immediate future.

The following table sets forth, for the periods indicated, revenues from sales into select geographies expressed in dollars per thousand and as a percentage of total revenue. The values shown represent the amount sold into each of the listed geographical areas.

	2013		2012		2011	
United States	\$ 8,541	18%	\$ 8,756	15%	\$13,199	17%
Europe and Near East	6,647	14%	9,242	16%	5,759	8%
Asia Pacific	29,138	61%	38,606	66%	53,052	70%
Other Americas	3,428	7%	1,485	3%	4,118	5%
Total Revenue	<u><u>\$47,754</u></u>		<u><u>\$58,089</u></u>		<u><u>\$76,128</u></u>	

Gross Profit. Gross profit for 2013 decreased to \$14.7 million or a decrease of 10.7% from \$16.5 million in 2012. The gross profit as a percentage of sales for 2013 increased to 30.8% from 28.4% for 2012, due primarily to lower inventory write-downs recorded in 2013 compared to 2012. BTU's results of operations in future quarters could also be affected by further inventory write-downs. BTU assesses inventory at each period end and records inventory write-downs as appropriate based on market conditions.

Selling, General and Administrative (SG&A). SG&A expenses decreased by \$1.2 million or 5.6% from \$21.0 million in 2012 to \$19.8 million in 2013, but increased as a percentage of sales from 36.1% in 2012 to 41.4% in 2013. For the year ended

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December 31, 2013 as compared to the year ended December 31, 2012, the decrease is primarily due to the lower commission on reduced sales and cost reduction actions taken in BTU's service, marketing and administrative functions; offset by higher legal expense in 2013 due to the settlement of previously disclosed litigation. BTU's results of operations in future quarters could also be affected by further reductions in operating expenses.

Research, Development and Engineering (RD&E). RD&E expenses decreased by \$0.8 million or 15.5% to \$4.6 million in 2013 from \$5.5 million in 2012. The decreases are the result of headcount reductions and expense reductions in the Company's RD&E functions as BTU moderated our spending on the development of new solar technologies.

Operating Loss. The 17.8% net sales decrease and its associated negative effect on gross profit combined with higher legal expenses in connection with the settlement of previously disclosed litigation resulted in an operating loss in 2013 of \$9.7 million as compared to an operating loss of \$10.4 million in 2012.

Interest Income (Expense). During the year ended December 31, 2013 as compared to the year ended December 31, 2012, net interest expense remained relatively flat at \$0.4 million.

Foreign Exchange Loss. The foreign exchange loss in 2013 was \$193,000 as compared to a loss of \$224,000 in 2012. The net exchange loss is primarily the result of foreign currency exposure in the Company's foreign operations.

Income Taxes. For the twelve months ended December 31, 2013, BTU recorded an income tax provision of \$1.3 million compared to a provision of \$65,000 in the same period in the prior year. The income tax provision recorded for the twelve months ended December 31, 2013 is primarily due to establishing a \$1.1 million valuation allowance on all deferred tax assets related to the China manufacturing subsidiary. The applicable accounting standards require that a valuation allowance be established when it is "more likely than not" that all or a portion of deferred tax assets will not be realized. A review of all available positive and negative evidence needs to be considered, including a company's performance, the market environment in which the company operates and the length of carryback and carryforward periods. According to those standards, a valuation allowance may be needed when the negative evidence includes cumulative losses in recent years. Therefore, cumulative losses weigh heavily in the overall assessment. As a result of BTU's review as of September 29, 2013, it concluded that it was appropriate to establish a full valuation allowance for net deferred tax assets in the China manufacturing subsidiary, where cumulative losses have been incurred during recent periods. The significant fluctuations in BTU's quarterly tax rate, exclusive of the fluctuation related to the establishment of the valuation allowance, as a percent of consolidated pre-tax income or loss, are the result of the different statutory tax rates in each of BTU's non-U.S. locations and the fluctuations of pre-tax income (loss) generated in these jurisdictions. A portion of the consolidated annual tax provision relates to Chinese withholding taxes which are not directly related to pre-tax income in China. China withholding taxes primarily result from corporate royalty charges based on the China manufacturing subsidiary net sales. U.S. taxes have had no impact to the rate fluctuation as the U.S. company operates at a loss.

BTU's statutory federal income tax rate is 34.0%. BTU's statutory income tax rate for its China manufacturing subsidiary is 25% in 2013 and 2012 and 24% in 2011. In 2014, the statutory tax rate for BTU's China manufacturing subsidiary will remain at 25%.

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Year ended December 31, 2012 as compared to year ended December 31, 2011

	Years Ended December 31,				
	2012			2011	
		(\$ in thousands)			
		% of net sales		% of net sales	Percent change
Net sales	\$ 58,089	100.0%	\$76,128	100.0%	(23.7)%
Cost of goods sold	<u>41,617</u>	71.6%	<u>47,542</u>	62.5%	(12.5)%
Gross profit	16,472	28.4%	28,586	37.5%	(42.4)%
Selling, general and administrative expenses	20,965	36.1%	22,721	29.8%	(7.7)%
Research, development and engineering expenses	5,450	9.4%	7,056	9.3%	(22.8)%
Restructuring	<u>424</u>	0.7%	<u>401</u>	0.5%	5.7%
Operating loss	(10,367)	(17.8)%	(1,592)	(2.1)%	551.2%
Loss before provision for income taxes	<u>(10,932)</u>	(18.8)%	<u>(1,770)</u>	(2.3)%	517.6%
Provision for income taxes	65	0.1%	952	1.3%	(93.2)%
Net loss	<u><u>\$ (10,997)</u></u>	(18.9)%	<u><u>\$ (2,722)</u></u>	(3.6)%	304.0%

Net Sales. Net sales in 2012 decreased by \$18.0 million or 23.7% compared to 2011. Net sales for BTU's electronics market systems increased from \$34.9 million in 2011 to \$42.0 million in 2012, an increase of \$7.1 million or 20.3%. The alternative energy systems sales decreased from \$29.2 million in 2011 to \$7.4 million in 2012, a decrease of \$21.8 million or 74.6%. The other market systems, parts and service sales decreased from \$11.9 million in 2011 to \$8.6 million in 2012, a decrease of \$3.3 million or 27.7%. The electronic market systems increase represents an increase in demand for Surface Mount Technology systems, particularly in China and an increase in demand for semiconductor packaging systems in the United States. BTU's alternative energy systems 2012 sales decrease as compared to 2011 was due to the continued weakening of the worldwide solar industry which started in the second quarter of 2011. The other market systems, parts and service 2012 sales decrease as compared to 2011 was due to the cyclical nature of the parts and service business combined with a decrease in other market system sales.

As a result of the weakness in capital spending in the solar industry, BTU expects minimal revenue from solar products over the immediate future.

Gross Profit. Gross profit for 2012 decreased to \$16.5 million or a decrease of 42.4% from \$28.6 million in 2011. The gross profit as a percentage of sales for 2012 decreased to 28.4% from 37.5% for 2011, due primarily to lower volume, product mix and overhead under absorption at BTU's factories combined with higher inventory write-downs. BTU's results of operations in future quarters could also be affected by further inventory write-downs. BTU assesses inventory at each period end and records inventory write-downs as appropriate based on market conditions.

Selling, General and Administrative (SG&A). SG&A expenses decreased by \$1.8 million or 7.7% from \$22.7 million in 2011 to \$21.0 million in 2012, but increased as a percentage of sales from 29.8% in 2011 to 36.1% in 2012. For the year ended December 31, 2012 as compared to the year ended December 31, 2011, the decrease is primarily due to the lower commission on reduced sales and cost reduction actions taken in BTU's service, marketing and administrative functions; offset by higher bad debt expense in 2012. In 2012, management determined certain accounts receivables were uncollectable and recorded bad debt expense of approximately \$1.4 million. BTU's results of operations in future quarters could also be affected by further reductions in operating expenses.

Research, Development and Engineering (RD&E). RD&E expenses decreased by \$1.6 million or 22.8% to \$5.5 million in 2012 from \$7.1 million in 2011. The decreases are the result of headcount reductions and expense reductions in BTU's RD&E functions as BTU moderated its spending on the development of new solar technologies.

Restructuring. BTU recorded a restructuring charge of \$424,000 in 2012 as compared to \$401,000 in 2011. This restructuring action was taken due to the continued slowdown in BTU's solar market product line.

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Operating Loss. The 23.7% net sales decrease and its associated negative effect on gross profit combined with higher inventory and bad debt reserves resulted in an operating loss in 2012 of \$10.4 million as compared to an operating loss of \$1.6 million in 2011.

Interest Income (Expense). During the year ended December 31, 2012 as compared to the year ended December 31, 2011, net interest expense remained relatively flat at \$0.4 million.

Foreign Exchange Loss. The foreign exchange loss in 2012 was \$224,000 as compared to a loss of \$139,000 in 2011. The net exchange loss is primarily the result of foreign currency exposure in BTU's foreign operations.

Income Taxes. In 2012, BTU recorded an income tax provision of \$65,000 as compared to \$1.0 million in 2011. BTU's income tax provision primarily relates to income and withholding taxes related to its China operations.

The significant fluctuations in BTU's quarterly tax rate, as a percent of consolidated pre-tax income or loss is the result of the different statutory tax rates in each of its non-U.S. locations and the fluctuations of pre-tax income (loss) generated in these jurisdictions. A portion of the consolidated annual tax provision relates to Chinese withholding taxes which are not directly related to pre-tax income in China. China withholding taxes primarily result from corporate royalty charges based on its China manufacturing subsidiary's net sales. U.S. income taxes have had no impact to the rate fluctuation as the U.S. company operates at a loss.

BTU's statutory federal income tax rate is 34.0%. BTU's statutory income tax rate for its China manufacturing subsidiary is 25% in 2012 and 24% in 2011.

Three months ended September 28, 2014 compared to the three months ended September 29, 2013

The following table sets forth certain items in BTU's Consolidated Statements of Operations as a percentage of net sales for the periods indicated.

Summary Condensed Consolidated Statements of Operations

	Three Months Ended				Percent Change
	September 28, 2014		September 29, 2013		
	(\$ in thousands)				
Net sales	\$15,917	100.0%	\$12,014	100.0%	32.5%
Cost of goods sold	9,840	61.8%	8,480	70.6%	16.0%
Gross profit	6,077	38.2%	3,534	29.4%	72.0%
Selling, general and administrative expenses	4,921	30.9%	6,228	51.8%	(21.0)%
Research, development and engineering expenses	939	5.9%	1,276	10.6%	(26.4)%
Operating income (loss)	217	1.4%	(3,970)	(33.0)%	(105.5)%
Income (loss) before provision for income taxes	110	0.7%	(4,076)	(33.9)%	(102.7)%
Provision for income taxes	110	0.7%	998	8.3%	(89.0)%
Net loss	<u>\$ (0)</u>	(0.0)%	<u>\$ (5,074)</u>	(42.2)%	(100.0)%

Net Sales. Net sales for the third quarter of 2014 were \$15.9 million representing an increase of \$3.9 million, or 32.5%, as compared to the same period in the prior year. Net sales of electronic market systems increased by \$3.4 million, or 36.4%, as compared to the same period in the prior year. Net sales of alternative energy systems increased by \$0.2 million or 13.7%, as compared to the same period in the prior year. Net sales for other market systems, parts and service increased by \$0.3 million, or 22.8%, as compared to the same period in the prior year. The electronic market systems increase represents an increase in demand for Surface Mount Technology systems, particularly in Asia. The increase in alternative energy sales is mainly due to increased

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nuclear product sales. BTU's overall alternative energy sales continue to be low due to the continued weakness of the worldwide solar industry which started in the second quarter of 2011. The increase in sales in the other market systems, parts and service is primarily due to an overall increase in our parts and service business.

The following table sets forth, for the periods indicated, revenues from sales into select geographies expressed in dollars per thousand and as a percentage of total revenue. The values shown represent the amount sold into each of the listed geographical areas.

	Three Months Ended			
	September 28, 2014		September 29, 2013	
	(\$ in thousands)			
	\$	% of Revenues	\$	% of Revenues
United States	\$ 3,665	23.0%	\$ 2,357	19.6%
Europe, Near East	2,196	13.8%	2,007	16.7%
Asia Pacific	9,794	61.5%	6,118	50.9%
Other Americas	262	1.7%	1,532	12.8%
Total Revenue	<u>\$15,917</u>		<u>\$12,014</u>	

Gross Profit. In the third quarter of 2014, gross profit was \$6.1 million, an increase of \$2.5 million, as compared to the same period in the prior year due primarily to the 32.5% increase in net sales. In the third quarter of 2014, gross profit as a percentage of sales increased to 38.2% as compared to 29.4% in the same period in the prior year. This increase in the third quarter of 2014 was mainly the result of product sales mix, lower inventory reserves and lower under-absorption in BTU's factories as compared to the same period in the prior year.

Selling, General and Administrative (SG&A). SG&A expense in the third quarter of 2014 of \$4.9 million decreased by \$1.3 million as compared to the same period in the prior year. The prior year comparable period SG&A expense included a legal settlement in the amount of \$1.5 million; offset by \$0.2 million of lower commission expense.

Research, Development and Engineering (RD&E). RD&E expense in the third quarter of 2014 of \$0.9 million decreased by \$0.3 million as compared to the same period in the prior year. This decrease in spending was the result of lower development project spending.

Interest Income (Expense). In the third quarter of 2014, net interest expense remained relatively flat at \$0.1 million as compared to the same period in the prior year.

Foreign Exchange Income (Loss). The foreign exchange loss in the third quarter of 2014 was \$34,000 as compared to a loss of \$33,000 in the same period in the prior year. The net exchange loss is primarily the result of foreign currency transactions in BTU's foreign operations for the applicable period.

Income Taxes. For the three months ended September 28, 2014, BTU recorded an income tax provision of \$110,000 as compared to an income tax provision of \$1.0 million for the same period in the prior year. BTU's income tax provision primarily relates to withholding taxes. However, the income tax provision recorded in the same period in the prior year included the establishment of a \$1.1 million valuation allowance on all deferred tax assets related to the China manufacturing subsidiary. The significant fluctuations in BTU's quarterly tax rate, exclusive of the fluctuation related to the establishment of the valuation allowance, as a percent of consolidated pre-tax income or loss, are the result of the different statutory tax rates in each of BTU's non-U.S. locations and the fluctuations of pre-tax income (loss) generated in these jurisdictions. A portion of the consolidated annual tax provision relates to Chinese withholding taxes which are not directly related to pre-tax income in China. Chinese withholding taxes primarily result from corporate royalty charges on net sales of BTU's Chinese manufacturing subsidiary. U.S. taxes have had no impact on the rate fluctuation as the U.S. entity operates at a loss for which no benefit is recognized due to a full valuation allowance.

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Nine months ended September 28, 2014 compared to the nine months ended September 29, 2013

The following table sets forth certain items in BTU's Consolidated Statements of Operations as a percentage of net sales for the periods indicated.

Summary Condensed Consolidated Statements of Operations

	September 28, 2014		September 29, 2013		Percent change
	(\$ in thousands)				
		% of net sales		% of net sales	
Net sales	\$44,037	100.0%	\$36,761	100.0%	19.8%
Cost of goods sold	<u>26,925</u>	61.1%	<u>25,103</u>	68.3%	7.3%
Gross profit	17,112	38.9%	11,658	31.7%	46.8%
Selling, general and administrative expenses	14,622	33.2%	15,237	41.4%	(4.0)%
Research, development and engineering expenses	<u>3,179</u>	7.2%	<u>3,427</u>	9.3%	(7.2)%
Operating loss	(689)	(1.6)%	(7,006)	(19.1)%	(90.2)%
Loss before provision for income taxes	(884)	(2.0)%	(7,377)	(20.1)%	(88.0)%
Provision for income taxes	308	0.7%	1,083	2.9%	(71.6)%
Net loss	<u>\$ (1,192)</u>	(2.7)%	<u>\$ (8,460)</u>	(23.0)%	(85.9)%

Net Sales. Net sales for the first nine months of 2014 were \$44.0 million representing an increase of \$7.3 million, or 19.8%, as compared to the same period in the prior year. Net sales of electronic market systems increased by \$4.8 million, or 15.9%, and net sales of alternative energy systems increased by \$1.1 million or 68.6%, as compared to the same period in the prior year. Net sales for BTU's other market systems, parts and service sales increased by \$1.4 million, or 29.0%, as compared to the same period in the prior year. The electronic market systems increase represents an increase in demand for Surface Mount Technology systems, particularly in Asia. The increase in alternative energy sales is mainly due to increased nuclear product sales. BTU's overall alternative energy sales continue to be low due to the continued weakness of the worldwide solar industry which started in the second quarter of 2011. The increase in sales in the other market systems and parts and service is primarily due to a \$1.1 million of other market custom sales in the first nine months of 2014 compared to no other market custom sales in the first nine months of 2013.

The following table sets forth, for the periods indicated, revenues from sales into select geographies expressed as a percentage of total revenues. The values shown represent the amount sold into each of the listed geographical areas.

	September 28, 2014		September 29, 2013	
	(\$ in thousands)			
	\$	% of revenues	\$	% of revenues
United States	\$ 8,094	18.4%	\$ 6,333	17.2%
Europe, Near East	7,113	16.2%	4,695	12.8%
Asia Pacific	26,220	59.5%	22,567	61.4%
Other Americas	<u>2,610</u>	5.9%	<u>3,166</u>	8.6%
Total Revenue	<u>\$44,037</u>		<u>\$36,761</u>	

Gross Profit. The first nine months of 2014 gross profit of \$17.1 million increased by \$5.5 million compared to the first nine months of 2013 due primarily to the 19.8% increase in net sales. In the first nine months of 2014, gross profit as a percentage of sales increased to 38.9% as compared to 31.7% in the same period in 2013, due primarily to product mix and improved overhead under absorption at our factories combined with lower inventory write-downs. BTU assesses inventory at each period end and records inventory write-downs as appropriate based on market conditions.

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Selling, General and Administrative (SG&A). SG&A expense in the first nine months of 2014 of \$14.6 million decreased by \$0.6 million compared to the same period in the prior year. The prior year comparable period SG&A expense included a legal settlement in the amount of \$1.5 million; offset by current period increased commissions and warranty expense due to increased sales volume for the first nine months of 2014.

Research, Development and Engineering (RD&E). RD&E expense in the first nine months of 2014 of \$3.2 million decreased by \$0.2 million as compared to the same period in the prior year. This decrease in spending was the result of lower development project spending.

Interest Income (Expense). In the first nine months of 2014, net interest expense remained relatively flat at \$0.2 million as compared to the same period in 2013.

Foreign Exchange Income (Loss). The foreign exchange gain in the first nine months of 2014 was \$22,000 as compared to a loss of \$147,000 in the same period in the prior year. The net exchange gain or loss is primarily the result of foreign currency transactions in the BTU's foreign operations in the applicable period.

Income Taxes. For the nine months ended September 28, 2014, BTU recorded an income tax provision of \$308,000 compared to a provision of \$1.1 million in the same period in the prior year. BTU's income tax provision primarily relates to withholding taxes. However, the income tax provision recorded in the same period in the prior year included the establishment of a \$1.1 million valuation allowance on all deferred tax assets related to the China manufacturing subsidiary. The significant fluctuations in BTU's quarterly tax rate, exclusive of the fluctuation related to the establishment of the valuation allowance, as a percent of consolidated pre-tax income or loss, are the result of the different statutory tax rates in each of BTU's non-U.S. locations and the fluctuations of pre-tax income (loss) generated in these jurisdictions. A portion of the consolidated annual tax provision relates to Chinese withholding taxes which are not directly related to pre-tax income in China. Chinese withholding taxes primarily result from corporate royalty charges on net sales of BTU's Chinese manufacturing subsidiary. U.S. taxes have had no impact on the rate fluctuation as the U.S. entity operates at a loss for which no benefit is recognized due to the full valuation allowance.

Liquidity and Capital Resources

For the full year 2013, BTU's net cash used in operating activities was \$5.8 million. In the first nine months of 2014, BTU's net cash used in operating activities was \$3.2 million. BTU's operating loss was \$0.7 million in the first nine months of 2014. BTU's operating loss was \$9.7 million for the full year 2013. On September 28, 2014, BTU had cash and cash equivalents of approximately \$10.4 million, a decrease of \$3.6 million, compared to \$14.0 million at December 31, 2013.

During the nine months ended September 28, 2014, BTU used net cash of approximately \$3.2 million for operating activities. This use of cash was primarily the result of a net loss of \$1.2 million, a decrease in deferred revenue of \$1.4 million, an increase in accounts receivable of \$1.4 million, an increase in inventory of \$1.3 million, an increase in other assets of \$1.6 million and a decrease in accrued expenses of \$0.6 million; offset by an increase in accounts payable of \$2.0 million, a decrease in other current assets of \$0.4 million and the adding back of non-cash expenses for depreciation and amortization of \$0.9 million, stock-based compensation of \$0.5 million, and inventory provisions of \$0.3 million.

In recent years, BTU's sales have declined as it continues to experience a significant downturn in the solar industry. The electronics and semiconductor industries have historically been cyclical and have experienced periodic downturns which affect the demand for equipment that BTU manufactures and markets. If the solar market does not improve, or if BTU's products do not gain the acceptance it has planned, BTU's cash resources will not allow it to continue making investments in the solar market and it may need to take action to restructure itself. To conserve cash and manage BTU's liquidity, BTU has implemented certain expense reductions throughout 2013 and 2014. BTU will continue to assess its cost structure as it relates to its revenues and cash position in 2014, and may take further actions as it deems necessary.

As of September 28, 2014, BTU has no material commitments relating to capital expenditures. There were no significant changes in BTU's commitments from those that were outlined in the "Contractual Obligations" section of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2013 and as set forth below.

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BTU's total current assets at September 28, 2014 were \$34.5 million, current liabilities were \$14.2 million and long-term debt was \$6.9 million. Although BTU has incurred increased legal, accounting and other administrative fees and costs in connection with its pending merger with Amtech, it believes that existing cash and anticipated cash flows from operations will be sufficient to support its current operating plan for the next twelve months. However, these cash flow and operating results expectations are subject to numerous assumptions, many of which may not actually occur. If some or all of such assumptions do not occur, BTU's results may be substantially different than expected, and its cash resources could be reduced faster than currently anticipated. Such assumptions include, without limitation, assumptions about the timing and progress of the Amtech merger, the success of certain expense reduction efforts, the market acceptance of BTU's products, and not experiencing an adverse result in potential litigation.

Mortgage Note

On March 30, 2006, BTU entered into a \$10 million mortgage note secured by its real property in Billerica, Massachusetts, which had an initial maturity date of December 23, 2015. On September 9, 2010, BTU signed a First Loan Modification Agreement relating to the mortgage note, which reduced the annual interest rate from 6.84% to 5.50% and the monthly payment from \$76,280 to \$69,000.

On September 26, 2013, BTU signed a Second Loan Modification Agreement relating to the mortgage note, which extended the maturity date from December 23, 2015 to September 26, 2023. The modification also reduced the annual interest rate from 5.50% to 4.43% through September 26, 2018, at which time the interest rate will be adjusted to a per annum fixed rate equal to the aggregate of the FHLB Five Year Classic Advance Rate plus two hundred forty basis points. The current monthly payment was reduced from \$69,000 to \$57,997. The mortgage note had an outstanding balance on September 28, 2014 of approximately \$7.3 million. All outstanding principal and accrued and unpaid interest will be due and payable on the maturity date.

Letters of Credit

On August 31, 2009, BTU entered into a pledge and assignment agreement with a bank, pursuant to which the bank agreed to issue letters of credit which BTU will cash collateralize via restricted cash deposits at the bank. As of September 28, 2014, the value of the outstanding letters of credit issued by the bank for BTU was \$249,221. This restricted cash value is included in BTU's balance sheet in other current assets.

Contractual Obligations

BTU's contractual obligations at December 31, 2013 were (in thousands):

<u>Contractual Obligations</u>	<u>Payments Due by Period</u>				
	<u>Total</u>	<u>2014</u>	<u>2015- 2016</u>	<u>2017- 2018</u>	<u>2019 and Thereafter</u>
Long-term debt(1)	\$ 7,586	\$ 367	\$ 785	\$ 858	\$ 5,576
Interest on long-term debt	2,407	329	607	534	937
Operating leases	281	196	85	—	—
Open purchase orders	2,462	2,462	—	—	—
Total	\$12,736	\$3,354	\$1,477	\$1,392	\$ 6,513

- (1) Mortgage Note Payable, due September 2023
- (2) BTU has a liability at December 31, 2013, including potential interest and penalties, of approximately \$114,000 for uncertain tax positions that have been taken or are expected to be taken in various income tax returns. BTU does not know the ultimate resolution of these uncertain tax positions and as such, does not know the ultimate timing of payments related to this liability. Accordingly, these amounts are not included in the table above.

There have been no significant changes in BTU's contractual obligations since December 31, 2013.

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Quantitative and Qualitative Disclosures About Market Risk

BTU has international subsidiaries in China and the United Kingdom and representative offices in Singapore, Malaysia, South Korea and Taiwan. These subsidiaries and offices transact business in their functional or local currency. Therefore, BTU is exposed to foreign currency exchange risks and fluctuations in foreign currencies, along with economic and political instability in the foreign countries in which it operates, all of which could adversely impact its results of operations and financial condition.

As of September 28, 2014 and December 31, 2013, all of BTU's long-term debt obligations were fixed rate financial instruments. However, on September 26, 2018, the interest rate related to BTU's mortgage note will be adjusted to a per annum fixed rate, to be applicable until the maturity date of September 26, 2023, equal to the aggregate of the FHLB Five Year Classic Advance Rate plus two hundred forty basis points.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders
BTU International, Inc.:

We have audited the accompanying consolidated balance sheets of BTU International, Inc., and subsidiaries as of December 31, 2013 and 2012 and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2013. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the audit standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of BTU International, Inc., and subsidiaries as of December 31, 2013 and 2012 and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2013 in conformity with U.S. generally accepted accounting principles.

/s/ KPMG LLP

Boston, Massachusetts
March 13, 2014

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BTU INTERNATIONAL, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)

	As of December 31,	
	2013	2012
Assets		
Current assets		
Cash and cash equivalents	\$ 13,991	\$ 20,218
Accounts receivable, less allowance of \$1,280 and \$1,583 at December 31, 2013 and 2012	11,370	9,623
Inventories	9,831	9,547
Other current assets	1,126	4,131
Total current assets	<u>36,318</u>	<u>43,519</u>
Property, plant and equipment, at cost		
Land	210	210
Buildings and improvements	11,268	11,200
Machinery and equipment	16,231	16,168
Furniture and fixtures	1,082	1,062
	<u>28,791</u>	<u>28,640</u>
Less accumulated depreciation	(25,405)	(23,971)
Net property, plant and equipment	<u>3,386</u>	<u>4,669</u>
Other assets, net of accumulated amortization of \$2,582 in 2013 and \$2,552 in 2012	<u>626</u>	<u>481</u>
Total assets	<u>\$ 40,330</u>	<u>\$ 48,669</u>
Liabilities and stockholders' equity		
Current liabilities		
Current portion of long-term debt	\$ 367	\$ 400
Trade accounts payable	5,408	5,185
Deferred revenue	2,052	893
Accrued expenses	6,361	5,147
Total current liabilities	<u>14,188</u>	<u>11,625</u>
Long-term debt, less current portion	<u>7,219</u>	<u>7,564</u>
Other long-term liabilities	<u>14</u>	<u>—</u>
Total liabilities	<u>21,421</u>	<u>19,189</u>
Commitments and contingencies		
Stockholders' equity		
Preferred stock, \$1.00 par value—5,000,000 shares authorized; no shares issued or outstanding	—	—
Common stock, \$0.01 par value—25,000,000 shares authorized; 10,924,856 shares issued and 9,556,889 shares outstanding at December 31, 2013 and 10,898,939 shares issued and 9,530,972 shares outstanding at December 31, 2012	109	109
Additional paid-in capital	52,204	51,545
Accumulated deficit	(30,853)	(19,385)
Less: treasury stock at cost, 1,367,967 shares at December 31, 2013 and December 31, 2012	(4,990)	(4,990)
Accumulated other comprehensive income	2,439	2,201
Total stockholders' equity	<u>18,909</u>	<u>29,480</u>
Total liabilities and stockholders' equity	<u>\$ 40,330</u>	<u>\$ 48,669</u>

The accompanying notes are an integral part of these consolidated financial statements.

BTU INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Years Ended December 31,		
	2013	2012	2011
Net sales	\$ 47,754	\$ 58,089	\$76,128
Cost of goods sold	33,048	41,617	47,542
Gross profit	14,706	16,472	28,586
Selling, general and administrative	19,786	20,965	22,721
Research, development and engineering	4,604	5,450	7,056
Restructuring	—	424	401
Operating loss	(9,684)	(10,367)	(1,592)
Interest income	53	63	77
Interest expense	(418)	(462)	(481)
Foreign exchange loss	(193)	(224)	(139)
Other income, net	65	58	365
Loss before provision for income taxes	(10,177)	(10,932)	(1,770)
Provision for income taxes	1,291	65	952
Net loss	<u>\$ (11,468)</u>	<u>\$ (10,997)</u>	<u>\$ (2,722)</u>
Loss per share:			
Basic	\$ (1.20)	\$ (1.16)	\$ (0.29)
Diluted	\$ (1.20)	\$ (1.16)	\$ (0.29)
Weighted average number of shares outstanding:			
Basic	9,539	9,509	9,434
Diluted	9,539	9,509	9,434

The accompanying notes are an integral part of these consolidated financial statements.

BTU INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

	Years Ended December 31,		
	2013	2012	2011
	(In thousands)		
Comprehensive loss is calculated as follows:			
Net loss	\$(11,468)	\$(10,997)	\$(2,722)
Other comprehensive income:			
Foreign currency translation adjustment	238	126	450
Comprehensive loss	<u>\$(11,230)</u>	<u>\$(10,871)</u>	<u>\$(2,272)</u>

The accompanying notes are an integral part of these consolidated financial statements.

BTU INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)

	Common Stock			Accumulated Deficit	Treasury Stock		Accumulated Other Comprehensive Income	Total
	# of shares	\$	Additional Paid-In Capital		# of shares	\$		
Balance at December 31, 2010	10,718	\$107	\$ 48,764	\$ (5,666)	1,368	\$(4,990)	\$ 1,625	\$ 39,840
Net loss	—	—	—	(2,722)	—	—	—	(2,722)
Exercise of stock options	123	2	519	—	—	—	—	521
Issuance of common stock	27	—	91	—	—	—	—	91
Translation adjustment	—	—	—	—	—	—	450	450
Stock-based compensation	—	—	1,272	—	—	—	—	1,272
Balance at December 31, 2011	<u>10,868</u>	<u>\$109</u>	<u>\$ 50,646</u>	<u>\$ (8,388)</u>	<u>1,368</u>	<u>\$(4,990)</u>	<u>\$ 2,075</u>	<u>\$ 39,452</u>
Net loss	—	—	—	(10,997)	—	—	—	(10,997)
Exercise of stock options	3	—	10	—	—	—	—	10
Issuance of common stock	28	—	53	—	—	—	—	53
Translation adjustment	—	—	—	—	—	—	126	126
Stock-based compensation	—	—	836	—	—	—	—	836
Balance at December 31, 2012	<u>10,899</u>	<u>\$109</u>	<u>\$ 51,545</u>	<u>\$ (19,385)</u>	<u>1,368</u>	<u>\$(4,990)</u>	<u>\$ 2,201</u>	<u>\$ 29,480</u>
Net loss	—	—	—	(11,468)	—	—	—	(11,468)
Issuance of common stock	26	—	28	—	—	—	—	28
Translation adjustment	—	—	—	—	—	—	238	238
Stock-based compensation	—	—	631	—	—	—	—	631
Balance at December 31, 2013	<u>10,925</u>	<u>\$109</u>	<u>\$ 52,204</u>	<u>\$ (30,853)</u>	<u>1,368</u>	<u>\$(4,990)</u>	<u>\$ 2,439</u>	<u>\$ 18,909</u>

The accompanying notes are an integral part of these consolidated financial statements.

BTU INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Years Ended December 31,		
	2013	2012	2011
Cash flows from operating activities:			
Net loss	\$(11,468)	\$(10,997)	\$ (2,722)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	1,633	1,702	1,800
Provision (recovery) for bad debts	(266)	1,383	(49)
Provision for inventory	1,868	5,261	2,294
Stock-based compensation	631	836	1,272
Deferred taxes	852	(391)	(77)
Gain on sale of property, plant and equipment	(51)	—	—
Loss on disposal of fixed assets	—	—	6
Net change in operating assets and liabilities:			
Accounts receivable	(1,369)	1,452	5,709
Inventories	(2,042)	2,191	(592)
Other current assets	2,354	(1,785)	(843)
Other assets	(305)	(203)	200
Accounts payable	108	1,632	(6,814)
Deferred revenue	1,158	398	(2,911)
Other long-term liabilities	14	—	—
Accrued expenses	1,118	210	(780)
Net cash provided by (used in) operating activities	<u>(5,765)</u>	<u>1,689</u>	<u>(3,507)</u>
Cash flows provided by (used in) investing activities:			
Proceeds from sale of property, plant and equipment	57	—	—
Purchases of property, plant and equipment	(302)	(221)	(711)
Net cash used in investing activities	<u>(245)</u>	<u>(221)</u>	<u>(711)</u>
Cash flows from financing activities:			
Principal payments under loan and capital lease agreements	(378)	(371)	(353)
Issuance of common stock	28	53	91
Proceeds from the exercise of stock options	—	10	521
Net cash provided by (used in) financing activities	<u>(350)</u>	<u>(308)</u>	<u>259</u>
Effects of exchange rates on cash	133	110	154
Net increase (decrease) in cash and cash equivalents	(6,227)	1,270	(3,805)
Cash and cash equivalents, beginning of period	20,218	18,948	22,753
Cash and cash equivalents, end of period	<u>\$ 13,991</u>	<u>\$ 20,218</u>	<u>\$ 18,948</u>
Supplemental disclosures of cash flow information:			
Cash paid (received) during the periods for:			
Interest paid	\$ 365	\$ 397	\$ 435
Income taxes paid (received)	\$ 537	\$ (35)	\$ 388

The accompanying notes are an integral part of these consolidated financial statements.

BTU INTERNATIONAL, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

NATURE OF OPERATIONS

BTU and its wholly owned subsidiaries (“Company”) are primarily engaged in the design, manufacture, sale, and service of thermal processing systems, which are used as capital equipment in various manufacturing processes, primarily in the electronics and alternative energy industries.

COMPREHENSIVE INCOME (LOSS)

The Company follows Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 220, *Comprehensive Income* (“ASC 220”) as amended by Accounting Standards Update (ASU) 2011-05, *Presentation of Comprehensive Income*. ASC 220 requires companies to report all changes in equity during a period, resulting from net income (loss) and transactions from non-owner sources, in a financial statement in the period in which they are recognized. On January 1, 2012, the date of adoption of ASU 2011-05, we had the option to report total comprehensive income, including components of net income and components of other comprehensive income, as a single continuous statement or in two separate but consecutive statements. We elected to present comprehensive income in two separate but consecutive statements as part of the consolidated financial statements. Other than a change in presentation, the implementation of this accounting pronouncement did not have a material impact on our consolidated financial statements.

PRINCIPLES OF CONSOLIDATION AND THE USE OF ESTIMATES

The accompanying consolidated financial statements include the accounts of the Company. All material inter-company balances and transactions have been eliminated in consolidation. The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting periods. The primary estimates used in the consolidated financial statements include the percentage of completion revenue method, inventory valuation, allowance for doubtful accounts, valuation of deferred income taxes, stock-based compensation and warranty reserves.

CASH AND CASH EQUIVALENTS

The Company has classified certain highly liquid financial instruments, with original maturities of three months or less, as cash equivalents.

ACCOUNTS RECEIVABLE

Accounts receivable are stated at the amount management expects to collect from outstanding balances. An allowance for doubtful accounts is provided for those accounts receivable considered to be uncollectible based upon historical experience and management’s evaluation of outstanding accounts receivable at the end of the year. Uncollectible accounts are written off against the allowance when identified. Bad debt expense (recovery) was (\$280,000), \$1,345,000, and (\$49,000) for 2013, 2012 and 2011, respectively.

INVENTORIES

Our inventories consist of material, labor and manufacturing overhead costs. We determine the cost of inventory based on a first-in, first-out method. We regularly review the quantity of inventories on hand and compare these quantities to the expected usage of each applicable product or product line. Our inventories are adjusted in value to the lower of cost or net realizable value and a new cost basis is established. Since the value of our inventories depends in part on our estimates of each product’s net realizable value, adjustments may be needed to reflect changes in valuation. Any adjustments we are required to make to lower the value of the inventories are recorded as a charge to cost of sales.

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Inventories consist of the following (in thousands):

	Years Ended December 31,	
	2013	2012
Raw materials and manufactured components	\$ 6,010	\$ 4,772
Work-in-process	2,459	1,905
Finished goods	1,362	2,870
Total inventory	<u>\$ 9,831</u>	<u>\$ 9,547</u>

The Company recorded inventory write-downs of \$1,868,000, \$5,261,000, and \$2,294,000, for the years ended 2013, 2012 and 2011, respectively. The write-downs recorded are net of recoveries of sold inventory that had previously been written-down in the amounts of approximately \$250,000, \$60,000, and \$485,000 for the years ended 2013, 2012 and 2011, respectively.

PROPERTY, PLANT AND EQUIPMENT

The Company provides for depreciation using the straight-line method over the assets' useful lives. Leasehold improvements are amortized on a straight-line basis over the lesser of the estimated useful life of the asset or the lease term. The estimated useful lives for depreciation purposes are as follows:

Buildings and improvements	8-25 years
Machinery and equipment	2-8 years
Software	3-10 years
Furniture and fixtures	3-8 years
Leasehold improvements	3 years

Depreciation expense was approximately \$1,603,000, \$1,641,000, and \$1,624,000 for the years ended December 31, 2013, 2012, and 2011, respectively.

Maintenance and repairs are charged to operations as incurred. When equipment and improvements are sold or otherwise disposed of, the asset cost and accumulated depreciation are removed from the accounts, and the resulting gain or loss, if any, is included in the results of operations.

The Company evaluates long-lived assets such as intangible assets and property, plant and equipment under FASB ASC 360-10-35-15, *Impairment or Disposal of Long-Lived Assets*. This statement requires that long-lived assets and certain identifiable intangibles are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset or asset group to future undiscounted net cash flows expected to be generated by the asset or asset group. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. No impairment of long-lived assets were identified during the years ended December 31, 2013, 2012 and 2011.

OTHER ASSETS

Other assets consist of the following (in thousands):

	2013	2012
Deferred financing costs, net of amortization	\$ 73	\$ 23
Intellectual property, net of amortization	—	23
Deferred tax asset—non-current	—	143
Long term assets	553	292
Total	<u>\$626</u>	<u>\$481</u>

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Deferred financing costs, capitalized in 2013, are being amortized over ten years, the term of the mortgage note. Amortization on deferred financing costs was approximately \$7,000, \$7,000 and \$7,000 in 2013, 2012 and 2011, respectively. Amortization on intellectual property was approximately \$23,000, \$54,000, and \$169,000 in 2013, 2012 and 2011, respectively.

INCOME TAXES

Deferred tax assets and liabilities are recognized for the expected future tax consequences of events that have been included in the consolidated financial statements or tax returns. The amounts of deferred tax assets or liabilities are based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. A valuation allowance is provided if, based on the weight of the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

We assess tax positions taken on tax returns, including recognition of potential interest and penalties, in accordance with the recognition thresholds and measurement attributes outlined in ASC 740. Interest and penalties recognized, if any, would be classified as a component of income tax expense.

TRANSLATION OF FOREIGN CURRENCIES

Assets and liabilities of the Company's foreign operations are translated from their functional currency into U.S. dollars at year end exchange rates. Revenue and expense items are translated at weighted average rates of exchange prevailing during the year. Gains and losses arising from translation are accumulated as a separate component of stockholders' equity, as the functional currency of the subsidiaries is their local currency, and the reporting currency of the Company is the U.S. dollar. Exchange gains and losses arising from transactions denominated in foreign currencies are included in income as incurred.

PATENTS

The Company has patents in the U.S. and certain foreign countries for some of its products and processes. No value has been assigned to these patents in the accompanying consolidated financial statements.

REVENUE RECOGNITION

The Company recognizes revenue in accordance with FASB ASC Topic 605, *Revenue Recognition* ("ASC 605"). Under these guidelines, revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred or services rendered, the price is fixed or determinable and payment is reasonably assured. Under these requirements, when the terms of sale include customer acceptance provisions, and compliance with those provisions has not been demonstrated, revenues are recognized upon acceptance.

Applying the requirements of ASC 605 to future sales arrangements used in the Company's equipment sales may result in the deferral of the revenue for some equipment sales. Products shipped to customers that do not meet the threshold requirements for revenue recognition as outlined above remain in the Company's inventory on the Consolidated Balance Sheet until revenue is recognized. Any cash collected from customers for products for which revenue has been deferred is recorded as Deferred Revenue on the Consolidated Balance Sheet.

The Company also has certain sales transactions for products, which are not completed within the normal operating cycle of the business. It is the Company's policy to account for these transactions using the percentage of completion method for revenue recognition purposes when all of the following criteria exist: (1) The Company has received the customer's purchase order or entered into a legally binding contract, (2) The customer is credit worthy and collection is probable or customer prepayments are required at product completion milestones or specific dates, (3) The sales value of the product to be delivered is significant in amount when compared to the Company's other products, and (4) Product costs can be reasonably estimated, there is no major technological uncertainty and the total engineering, material procurement, product assembly and test cycle time extend over a period of six months or longer.

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Under the percentage of completion method, revenues and gross margins to date are recognized based upon the ratio of costs incurred to date compared to the latest estimate of total costs to complete the product as a percentage of the total contract revenue for the product. Revisions in costs and gross margin percentage estimates are reflected in the period in which the facts causing the revision become known. Provisions for total estimated losses on uncompleted contracts, if any, are made in the period in which such losses are determined. For the years ended December 31, 2013, 2012 and 2011, \$0, \$1,731,686, and \$2,406,714, respectively, were recognized as revenue using the percentage of completion method.

The Company accounts for shipping and handling costs billed to customers in accordance with FASB ASC 605-45, *Shipping and Handling Fees and Costs*. Amounts billed to customers for shipping and handling costs are recorded as revenues with the associated costs reported as cost of goods sold.

RESEARCH, DEVELOPMENT AND ENGINEERING

Research, development and engineering costs are charged to expense as incurred.

EARNINGS PER SHARE INFORMATION

Basic earnings per share (EPS) is computed by dividing net income (loss) available to common stockholders by the weighted-average number of common shares outstanding during the period. Diluted EPS is computed using the weighted-average number of common and potentially dilutive securities outstanding during the period, using the treasury stock method. Potentially dilutive securities include outstanding stock options and unvested restricted stock units (RSUs). Due to their antidilutive effect, approximately 1,454,292, 1,376,041, and 1,299,358 options to purchase common stock were excluded from the calculation of diluted loss per share for the years ended December 31, 2013, 2012 and 2011, respectively. However, these potentially dilutive securities could become dilutive in future periods.

The weighted average number of common shares used to compute basic and diluted earnings per share consists of the following classification:

	<u>Years Ended December 31,</u>		
	<u>2013</u>	<u>2012</u>	<u>2011</u>
	(In thousands)		
Basic shares	9,539	9,509	9,434
Effect of dilutive options	—	—	—
Diluted shares	<u>9,539</u>	<u>9,509</u>	<u>9,434</u>

RECENT ACCOUNTING PRONOUNCEMENTS

In February 2013, the FASB issued ASU No. 2013-02, *Reporting of Amounts Reclassified out of Accumulated Other Comprehensive Income*, that requires entities to disclose items reclassified out of accumulated other Comprehensive Income (AOCI) and into net income in their entirety, the effect of the reclassification on each affected net income line item and for AOCI reclassification items that are not reclassified in their entirety into net income, a cross reference to other required U.S. GAAP disclosures. This consolidated standard is effective for annual periods beginning after December 15, 2012 and interim periods within those years. The application of this standard did not have material impact on the Company's consolidated financial statements.

SUBSEQUENT EVENTS

For the fiscal year ended December 31, 2013, the Company has evaluated subsequent events for potential recognition and disclosure in the financial statements through the date these financial statements were filed with the Securities and Exchange Commission.

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(2) ACCRUED EXPENSES

Accrued expenses at December 31, 2013 and 2012 consisted of the following (in thousands):

	2013	2012
Accrued commissions	\$1,086	\$ 935
Accrued warranty	379	393
Accrued taxes	1,858	1,817
Accrued audit	419	388
Accrued legal	1,430	240
Accrued bonus	85	87
Payroll and payroll taxes	688	793
Accrued cost of sales	142	300
Accrued restructuring	—	111
Other	274	83
	<u>\$6,361</u>	<u>\$5,147</u>

Warranties

The Company provides standard warranty coverage for parts and labor for 12 months and special extended material-only coverage on certain other products. The Company estimates and records a reserve for anticipated warranty claims based on historical warranty claims as a percentage of revenue by product line. The reserve for warranty covers the estimated costs of material, labor and travel. Actual warranty claims incurred are charged against the reserve. Factors that affect the Company's product warranty liability include the number of installed units, the anticipated cost of warranty repairs and historical and anticipated rates of warranty claims.

The following table reflects changes in the Company's accrued warranty account during the fiscal years ended December 31, 2013 and 2012:

	2013	2012
	(In thousands)	
Beginning balance	\$ 393	\$ 497
Plus: accruals related to new sales	397	538
Less: warranty claims incurred	(411)	(642)
Ending balance	<u>\$ 379</u>	<u>\$ 393</u>

Restructuring

Costs associated with restructuring activities are accounted for in accordance with ASC Topic 420, *Exit or Disposal Cost Obligations*, or ASC Topic 712, *Compensation—Nonretirement Postemployment Benefits*, as applicable. Pursuant to ASC Topic 712, liabilities for employee severance are recorded when payment of severance is considered probable and the amount is estimable. For restructuring costs other than employee severance accounted under ASC Topic 712, a liability is recognized in accordance with ASC Topic 420 only when incurred.

In April 2013, the Company eliminated 12 positions. Accordingly, the Company recorded a restructuring charge of \$176,000 in the three months ended June 30, 2013. The decision to eliminate 12 positions was taken due to the continued slowdown in the solar industry. The Company eliminated 31 and 17 positions and recorded restructuring charges of \$424,000 and \$401,000 in the years ended December 31, 2012 and December 31, 2011.

The restructuring charges were primarily severance and benefits.

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The following table reflects changes in the reserves for restructuring charges for the year ended December 31, 2013 (in thousands):

	<u>2013</u>
Beginning balance, December 31, 2012	\$ 111
Plus: charges to costs and expenses	176
Less: reduction of accrual	(71)
Less: cash payments	(216)
Ending balance, December 31, 2013	<u>\$ —</u>

(3) DEBT, CAPITAL LEASES, COMMITMENTS AND CONTINGENCIES

On March 30, 2006, the Company entered into a \$10 million mortgage note secured by its real property in Billerica, Massachusetts, which had an initial maturity date of December 23, 2015. On September 9, 2010, the Company signed a First Loan Modification Agreement relating to the mortgage note, which reduced the annual interest rate from 6.84% to 5.50% and the monthly payment from \$76,280 to \$69,000.

On August 31, 2009, the Company entered into a pledge and assignment agreement with a bank. The bank agrees, at the Company's request, to issue letters of credit in the bank's name and the Company agrees to cash collateralize letters of credit via restricted cash deposits at the bank. As of December 31, 2013 and 2012, the value of the outstanding letters of credit issued by the bank for the Company and cash collateralized by the Company was \$247,515 and \$247,090, respectively. This restricted cash value is included in the Company's balance sheet in other current assets.

On September 26, 2013, the Company signed a Second Loan Modification Agreement relating to the mortgage note, which extended the maturity date from December 23, 2015 to September 26, 2023. The modification also reduced the annual interest rate from 5.50% to 4.43% through September 26, 2018, at which time the interest rate will be adjusted to a per annum fixed rate equal to the aggregate of the Federal Home Loan Board (FHLB) Five Year Classic Advance Rate plus two hundred forty basis points. The current monthly payment was reduced from \$69,000 to \$57,997. The mortgage note had an outstanding balance on December 31, 2013 of approximately \$7.6 million. All outstanding principal and accrued and unpaid interest will be due and payable on the maturity date.

Long-term debt consisted of:

	December 31, 2013	December 31, 2012
	(\$ in thousands)	
Mortgage note payable, interest rate of 4.43% and 5.50% at December 31, 2013 and December 31, 2012, respectively	\$ 7,586	\$ 7,964
Less—current portion of long-term debt	367	400
Long-Term debt, less current portion	<u>\$ 7,219</u>	<u>\$ 7,564</u>

Under the terms of the debt, the minimum principal repayments of long-term debt and operating lease obligations by year are as follows (in thousands):

	<u>Mortgage</u>	<u>Operating Leases</u>	<u>Total</u>
2014	368	196	564
2015	384	61	445
2016	401	24	425
2017	419	—	419
2018 & Thereafter	6,014	—	6,014
	<u>\$ 7,586</u>	<u>\$ 281</u>	<u>\$7,867</u>

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Under the Company's operating lease agreements, the approximate future minimum obligation as of December 31, 2013 is as follows: \$195,000 for real estate, \$18,000 for automobiles and \$68,000 for equipment.

The Company has operating leases for its Shanghai manufacturing operations that allow extensions. As of December 31, 2013, the future minimum lease commitment for this facility is approximately \$86,000. The Company has an operating lease for its UK facility that expires in May 2015. As of December 31, 2013, the future minimum lease commitment for this facility is approximately \$54,000 payable through May 2015. As of December 31, 2013, the future minimum lease commitment for the Singapore and Malaysia office is approximately \$43,000 and \$11,000, respectively.

Rent expense was approximately \$421,000 in 2013, \$390,000 in 2012 and \$477,000 in 2011.

As an equipment manufacturer, the Company generates and disposes of small quantities of solid waste that are considered hazardous under Environmental Protection Agency ("EPA") regulations. Because the Company historically used a waste disposal firm that disposed of the solid waste at a site that the EPA has designated as a Superfund site, the Company has been named by the EPA as one of the entities responsible for a portion of the expected clean-up costs. Based on the Company's proportional responsibility, as negotiated with and agreed to by the EPA, the Company's liability related to this matter is \$225,140. This amount is included in Accrued Expense on the Consolidated Balance Sheet as of December 31, 2013. On October 2, 2009, in accordance with the agreement, the Company established a letter of credit for \$225,140 to the benefit of the EPA for potential cash payments as settlements for the Company's proportional liability.

(4) FOREIGN OPERATIONS

The following table shows the amounts (in thousands) and percentages of the Company's revenues by geographic region, for the last three years:

	2013		2012		2011	
United States	\$ 8,541	18%	\$ 8,756	15%	\$13,199	17%
Europe and Near East	6,647	14%	9,242	16%	5,759	8%
Asia Pacific	29,138	61%	38,606	66%	53,052	70%
Other Americas	3,428	7%	1,485	3%	4,118	5%
Total Revenue	<u>\$47,754</u>		<u>\$58,089</u>		<u>\$76,128</u>	

The following table shows the amounts (in thousands) of the Company's tangible long-lived assets by geographic region, at December 31, 2013 and 2012:

	December 31, 2013	December 31, 2012
United States	\$ 2,889	\$ 3,936
Asia Pacific	497	733
	<u>\$ 3,386</u>	<u>\$ 4,669</u>

(5) CONCENTRATION OF CREDIT RISK AND SIGNIFICANT CUSTOMERS

The Company maintains the majority of its cash and cash equivalent balances with a small number of financial institutions who invest the funds in highly liquid financial instruments with terms not to exceed 90 days.

The Company has international subsidiaries in China, the United Kingdom, Singapore and Malaysia. These subsidiaries transact business in their functional or local currency. Therefore, the Company is exposed to foreign currency exchange risks and fluctuations in foreign currencies, along with economic and political instability in the foreign countries in which it operates, all of which could adversely impact its results of operations and financial condition. The Company's revenues are primarily derived from customers in the electronics and alternative energy manufacturing industries who are not required to provide collateral for

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amounts owed to the Company. The Company's customers are dispersed over a wide geographic area and are subject to periodic review under the Company's credit policies. The Company does not believe that it is subject to any unusual credit risks, other than the normal level of risk due to operating its business.

Concentration of credit risk with respect to accounts receivable is limited to certain customers to whom the Company makes substantial sales. To reduce its credit risk, the Company routinely assesses the financial strength of its customers. The Company maintains an allowance for potential credit losses, but historically has not experienced any losses in excess of the loss allowance related to individual customers or groups of customers in any particular industry or geographic area.

One customer accounted for \$8.2 million or 17.4% of total net sales in 2013. One customer accounted for \$7.3 million or 12.5% of total net sales and another customer accounted for \$6.5 million or 11.2% of total net sales in 2012. One customer accounted for \$11.9 million or 15.6% of total net sales and another accounted for \$7.9 million or 10.4% of total net sales in 2011. As of December 31, 2013, one customer accounted for more than 10% of accounts receivable comprising 14.0% of the total. As of December 31, 2012, two customers accounted for more than 10% of accounts receivable comprising 22.5% of the total.

(6) INCOME TAXES

The components of loss before provision for income taxes are as follows (in thousands):

	Years Ended December 31,		
	2013	2012	2011
Domestic	(\$ 7,776)	(\$ 9,254)	\$(2,366)
Foreign	(2,401)	(1,678)	596
Total	<u>(\$10,177)</u>	<u>(\$10,932)</u>	<u>\$(1,770)</u>

For the years ended December 31, 2013, 2012 and 2011, the Company's provision for income taxes were as shown below (in thousands):

	Federal	State	Foreign	Total
December 31, 2013				
Current	\$ —	\$ 2	\$ 437	\$ 439
Deferred	—	—	\$ 852	852
	<u>\$ —</u>	<u>\$ 2</u>	<u>\$1,289</u>	<u>\$1,291</u>
December 31, 2012				
Current	\$ —	\$ 2	\$ 454	\$ 456
Deferred	—	—	(391)	(391)
	<u>\$ —</u>	<u>\$ 2</u>	<u>\$ 63</u>	<u>\$ 65</u>
December 31, 2011				
Current	\$ —	\$ 28	\$1,001	\$1,029
Deferred	—	—	(77)	(77)
	<u>\$ —</u>	<u>\$ 28</u>	<u>\$ 924</u>	<u>\$ 952</u>

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The differences between the statutory United States federal income tax rate of 34% and the Company's effective tax rate are as follows (in thousands):

	2013	2012	2011
Provision (Benefit) at Statutory Rate	(\$3,460)	(\$3,752)	\$ (602)
State Tax Net of Federal Benefit	(261)	(92)	29
Foreign Tax Rate Differential	327	320	(56)
Losses and Credits not Benefitted	3,893	2,965	1,162
Non-deductible & Other	792	624	419
Net Provision	<u>\$ 1,291</u>	<u>\$ 65</u>	<u>\$ 952</u>

The components of the net deferred tax assets at December 31, 2013 and 2012 are as follows (in thousands):

Deferred Tax Assets:	2013	2012
Federal Net Operating Loss Carryforwards	\$ 3,051	\$ 1,674
State Net Operating Loss Carryforwards	360	163
Foreign Net Operating Loss Carryforwards	860	459
Inventory Reserve	3,753	3,441
Deferred Compensation	1,693	1,789
Federal, Foreign and Other Tax Credits	2,989	2,480
Accruals and Other	1,732	1,360
Intangibles	416	467
Total Deferred Tax Assets	14,854	11,833
Valuation Allowance	(14,854)	(10,961)
Deferred Tax Assets	—	872
Deferred Tax Liabilities:		
Depreciation and Amortization	—	(40)
Net Deferred Tax Assets	<u>\$ —</u>	<u>\$ 832</u>

Deferred tax assets at December 31, 2012 are recorded in Other Assets.

The deferred tax valuation allowance increased by \$3,893,000 and by \$2,982,000 for the years ended December 31, 2013 and 2012, respectively. In assessing the realizability of deferred tax assets, the Company considers whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. The Company considers the scheduled reversal of deferred tax liabilities, projected future income, and tax planning strategies in making this assessment. We have recorded a full valuation allowance against the U.S and China manufacturing subsidiary net deferred tax assets since we believe that, after considering all of the available objective evidence, both positive and negative, historical and prospective, with greater weight given to historical evidence, it is not more likely than not that these assets will be realized.

The Company has federal net operating loss carryforwards of approximately \$12,699,000 that expire between 2024 and 2033, \$3,354,070 of which relates to excess tax deductions from share based payments, the tax benefit of which will be recorded as an increase in additional paid-in capital when the deduction reduces current taxes payable. The Company also has state net operating loss carryforwards of approximately \$4,717,000 that expire between 2014 and 2033, \$1,255,000 of the tax benefit will be recorded as an increase in additional paid-in-capital when the deduction reduces current taxes payable. The Company also has foreign tax credit carryforwards of approximately \$2,941,000 that expire between 2018 and 2023, \$253,265 of the tax benefit will be recorded as an increase in additional paid-in capital when the deduction reduces current taxes payable.

Undistributed earnings of the Company's foreign subsidiaries amounted to approximately \$2.7 million at December 31, 2013. The Company's historical and continuing policy is that its undistributed foreign earnings are indefinitely reinvested and,

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accordingly, no related provision for U.S. federal and state income taxes has been provided on the \$2.7 million of undistributed foreign earnings. The amount of taxes attributable to these undistributed earnings is immaterial.

The Company applies the provisions of FASB Interpretation No. 48 (“FIN 48”), “*Accounting for Uncertainty in Income Taxes*”, (now codified as FASB ASC 740, “*Income Tax*”). In this regard, an uncertain tax position represents the Company’s expected treatment of a tax position taken in a filed tax return, or planned to be taken in a future tax return, that has not been reflected in measuring income tax expense for financial reporting purposes.

A reconciliation of the beginning and ending amount of our unrecognized tax benefits is summarized as follows:

	2013	2012	2011
Balance at beginning of period	\$151	\$151	\$151
Increase (decrease) related to current year tax positions	—	—	—
Increase (decrease) related to prior year tax positions	(37)	—	—
Balance at end of period	<u>\$114</u>	<u>\$151</u>	<u>\$151</u>

The unrecognized tax benefits at December 31, 2013, if recognized, would reduce the Company’s effective tax rate in the period recognized. For the year ended December 31, 2013, there were no material changes to the total amount of unrecognized tax benefits. We do not expect any significant increases or decreases for uncertain tax positions during the next 12 months.

The Company’s major tax jurisdictions include the United States and China. The Company is no longer subject to U.S. state or local and non-U.S. income tax examinations by tax authorities in its major jurisdictions for years before 2007, except to the extent of net operating loss and tax credit carryforwards from those years. The Company’s policy is to recognize interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. There is no interest or penalties accrued at December 31, 2013.

(7) EMPLOYEE BENEFITS

The Company has management incentive and profit sharing plans for its executives and all of its employees. These plans provide for bonuses upon the attainment of certain financial targets. Under these plans, \$84,000, \$70,000 and \$217,000 was expensed in 2013, 2012 and 2011, respectively.

The Company has a deferred 401(k) contribution plan that is available to cover all domestic employees of the Company. Subject to non-discriminatory restrictions on highly compensated employees, participants can voluntarily contribute a percentage of their compensation up to the plan limits, and the Company, at its discretion, may match this contribution up to a stipulated percentage. The Company’s expense under the plan was approximately \$234,000, \$269,000 and \$321,000 for the years ended December 31, 2013, 2012 and 2011, respectively.

(8) STOCK OPTION AND PURCHASE PLANS

Stock Options

The Company accounts for share-based compensation in accordance with the provisions of SFAS No. 123R, *Share-Based Payment* (now codified as FASB ASC Topic 718, *Compensation—Stock Compensation* (“ASC 718”). This statement establishes standards for accounting for transactions in which an entity exchanges its equity instruments for goods or services. The Company’s stock option compensation expense was approximately \$574,000, \$808,000 and \$1,234,000 for the years ended December 31, 2013, 2012 and 2011 respectively. These amounts do not include expense related to restricted stock awards or the employee stock purchase plan.

The fair value of each option is estimated on the date of grant using the Black-Scholes option-pricing model. This model incorporates certain assumptions for inputs including a risk-free market interest rate, expected dividend yield of the underlying common stock, expected option life and expected volatility in the market value of the underlying common stock. The Company is also required to estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ

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from those estimates. Historical data is used to estimate pre-vesting forfeitures and record stock-based compensation expense only for those awards that are expected to vest. Accordingly, awards ultimately expected to vest were reduced for annualized estimated

forfeitures of 4% for each of the years ended December 31, 2013, 2012 and 2011. We used the following assumptions for options issued during the years ended December 31, 2013, 2012 and 2011, respectively:

Calculation of Fair Values—Assumptions Used:	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Expected Volatility	65.6%	66.6%	63.7%
Expected Life	4.19	4.15	4.64
Risk-Free Interest Rate	0.92%	0.57%	1.23%
Expected Dividend Yield	0	0	0

Expected volatilities are based on the weighted average historical volatility of the Company's common stock for the expected life of the option. The Company has significant historical data to help evaluate the expected lives of options in developing its assumption. The risk-free interest rate is based upon quoted market yields for United States Treasury debt securities with a term approximating the expected life of the options. The expected dividend yield is based upon the Company's history of having never issued a dividend and management's current expectation of future action surrounding dividends.

The Company has two stock option plans for employees, the 1993 Equity Incentive Plan ("1993 Plan"), which expired in 2003 with 254,791 unissued options, and the 2003 Equity Incentive Plan ("2003 Plan"). These plans allow for the award of stock and stock options to employees, directors and consultants. Under the terms of the plans, other stock awards can also be granted at the discretion of the Company's board of directors. The Company also has two stock option plans for non-employee directors, the 1989 Stock Plan for Directors ("1989 Plan"), which expired in 2008 and the 1998 Stock Option Plan for Non-Employee Directors ("1998 Plan"). Under each plan, the exercise price of the options is not less than the fair market value at the date of the grant. Options expire from a minimum of two years to a maximum of ten years from the date of the grant. All new grants, for both employees and directors, are now issued from the same plan, the 2003 Plan.

In May 2003, the shareholders approved the 2003 Plan, which allows for up to 700,000 shares to be awarded (plus the addition of up to 300,000 options that could be forfeited under the expired 1993 Plan). Also in May 2003, the shareholders approved an amendment to add 70,000 shares to the 1998 Plan.

In May 2008, the shareholders approved an amendment to add 450,000 shares to the 2003 Plan. Also in May 2008, the shareholders approved an amendment to add 50,000 shares to the 1998 Plan.

In May 2011, the shareholders approved an amendment to add 600,000 shares to the 2003 Plan.

Shares available for future stock option and restricted stock unit grants, pursuant to the 2003 Plan and the 1998 Plan were 701,986 at December 31, 2013.

A summary of all stock option activity for the years ended December 31, 2013, 2012 and 2011 is as follows:

	2013		2012		2011	
	Number of Shares	Weighted Average Price per Share	Number of Shares	Weighted Average Price per Share	Number of Shares	Weighted Average Price per Share
Outstanding at beginning of year	1,353,141	\$ 6.20	1,299,358	\$ 6.72	1,277,264	\$ 6.56
Granted	222,060	2.80	217,695	2.54	180,855	6.24
Exercised	—	—	(3,250)	3.00	(122,220)	4.26
Forfeited/Cancelled	(166,509)	9.29	(160,662)	5.48	(36,541)	7.04
Outstanding at end of year	<u>1,408,692</u>	<u>\$ 5.30</u>	<u>1,353,141</u>	<u>\$ 6.20</u>	<u>1,299,358</u>	<u>\$ 6.72</u>
Options exercisable at end of year	<u>980,932</u>	<u>\$ 6.01</u>	<u>855,671</u>	<u>\$ 7.21</u>	<u>666,797</u>	<u>\$ 7.57</u>

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At December 31, 2013, the outstanding options have exercise prices ranging from \$2.00 to \$11.93 and a weighted average remaining contractual life of 3.61 years. There were no options exercised during the year ended December 31, 2013. There were 61,810 exercisable in-the-money options as of December 31, 2013.

The following table summarizes information for options outstanding and for options exercisable at December 31, 2013:

Range of Prices	Number	Options Outstanding		Options Exercisable	
		Weighted Average Remaining Life	Weighted Average Exercise Price	Number	Weighted Average Exercise Price
2.00 to 3.00	230,293	5.86	\$ 2.26	61,810	\$ 2.12
3.01 to 3.34	202,966	5.72	3.18	60,239	3.10
3.35 to 5.01	366,611	2.66	4.22	335,011	4.28
5.02 to 6.68	258,492	2.96	5.62	230,992	5.65
6.69 to 8.35	99,420	3.71	7.01	76,020	7.02
8.36 to 10.02	71,300	4.26	9.06	37,250	9.08
10.03 to 11.69	97,010	1.41	10.08	97,010	10.08
11.70 to 11.93	82,600	0.38	11.93	82,600	11.93
	<u>1,408,692</u>	<u>3.61</u>	<u>\$ 5.30</u>	<u>980,932</u>	<u>\$ 6.01</u>

The aggregate intrinsic value of the outstanding options represents the total pre-tax intrinsic value, based on the Company's closing stock price of \$3.01 as of December 31, 2013 which would have been received by the option holders had all option holders exercised their options as of that date. As of December 31, 2013, there was \$640,968 of total unrecognized compensation cost related to non-vested options granted under all of the Company's option plans. That cost is expected to be recognized over a weighted average period of 1.39 years. The total fair value of shares vested during the year ended December 31, 2013 was \$617,667.

A summary of the status of the Company's non-vested options as of December 31, 2013 and 2012 is presented below:

Nonvested Activity:	December 31, 2013		December 31, 2012	
	Shares	Weighted-Fair Value	Shares	Weighted-Fair Value
Balance—Beginning	497,470	\$ 2.38	632,561	\$ 3.60
Granted	222,060	\$ 1.42	217,695	\$ 1.29
Vested	(265,995)	\$ 2.32	(272,490)	\$ 4.13
Nonvested Forfeited	(25,775)	\$ 2.29	(80,296)	\$ 3.07
Nonvested	<u>427,760</u>	<u>\$ 1.92</u>	<u>497,470</u>	<u>\$ 2.38</u>

Restricted Stock Units

In June and November 2013, the Company granted 20,250 and 17,050 RSUs to various employees. The fair value of the RSUs at the date of the grant in June and November 2013 was \$2.35 and \$3.27, respectively. These RSUs vest over a two-year term. The Company has recorded compensation expense of \$43,117 and \$9,137 during the years ended December 31, 2013 and December 31, 2012, respectively, related to these grants. As of December 31, 2013, there was \$95,786 of unrecognized compensation costs related to these grants. These grants have a remaining life of 1.50 years.

The Company has an Employee Stock Purchase Plan. Under the terms of the plan, employees are entitled to purchase shares of common stock at the lower of 85% of fair market value at either the beginning or the end of each six-month option period. A total of 500,000 shares have been reserved for issuance under this plan, of which 38,295 remain available at December 31, 2013. During 2013, a total of 16,827 shares were purchased at prices ranging from \$1.80 to \$2.17 per share. The Company has recorded a compensation charge of \$13,200, \$18,721, and \$38,417 in 2013, 2012 and 2011, respectively, related to this plan.

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(9) DISCLOSURES ABOUT THE FAIR VALUE OF FINANCIAL INSTRUMENTS

In accordance with the requirements of FASB ASC Topic 820, *Fair Value Measurements and Disclosures* (“ASC 820”), the Company groups its financial assets and liabilities measured at fair value on a recurring basis in three levels, based on the markets in which the assets and liabilities are traded and the reliability of the assumptions used to determine fair value. These levels are:

- Level 1—Valuation is based upon quoted market price for identical instruments traded in active markets.
- Level 2—Valuation is based on quoted market prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market.
- Level 3—Valuation is generated from model-based techniques that use significant assumptions not observable in the market. Valuation techniques include use of discounted cash flow models and similar techniques.

In accordance with the requirements of ASC 820, it is the Company’s policy to maximize the use of observable inputs and minimize the use of unobservable inputs when developing fair value measurements. When available, the Company uses quoted market prices to measure fair value. If market prices are not available, the fair value measurement is based on models that use primarily market based parameters including interest rate yield curves, option volatilities and currency rates. In certain cases where market rate assumptions are not available, the Company is required to make judgments about assumptions market participants would use to estimate the fair value of a financial instrument. Changes in the underlying assumptions used, including discount rates and estimates of future cash flows, could significantly affect the results of current or future values.

At December 31, 2013 and 2012, the Company did not have any financial assets and liabilities that required being measured at fair value in accordance with ASC 820.

The carrying amounts of the Company’s cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximate their fair value due to the instruments’ short-term nature. Long-term debt is also reported at carrying value and approximates fair value as the interest rate on the mortgage note payable of 4.43% approximates the current market interest rate.

(10) SEGMENT REPORTING

Segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision-maker in deciding how to allocate resources and in assessing performance. The Company operates as a single business segment called Thermal Processing Capital Equipment.

The Thermal Processing Capital Equipment segment consists of the designing, manufacturing, selling and servicing of thermal processing equipment and related process controls for use in the electronics, alternative energy, automotive and other industries. This business segment includes the supply of solder reflow systems used for surface mount applications in printed circuit board assembly. Thermal processing equipment is used in: low temperature curing/encapsulation; hybrid integrated circuit manufacturing; integrated circuit packaging and sealing; and processing multi-chip modules. In addition, the thermal process equipment is used for solar cell processing, sintering nuclear fuel for commercial power generation, as well as brazing and the sintering of ceramics and powdered metals, and the deposition of precise thin film coatings. The business segment’s customers are multinational original equipment manufacturers and contract manufacturing companies.

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(11) SELECTED QUARTERLY FINANCIAL INFORMATION (Unaudited)

The following tables set forth selected quarterly financial information for the fiscal years ended December 31, 2013 and 2012. The operating results for any given quarter are not necessarily indicative of results for any future period.

	Quarters Ended							
	Apr. 01, 2012	July 01, 2012	Sep. 30, 2012	Dec. 31, 2012	March 31, 2013	June 30, 2013	Sep. 29, 2013	Dec. 31, 2013
	(in thousands, except per share data)							
Net sales	\$16,272	\$14,598	\$14,137	\$13,082	\$ 10,503	\$14,244	\$12,014	\$10,993
Cost of goods sold	10,994	9,891	10,018	10,714	7,773	8,850	8,480	7,945
Gross profit	5,278	4,707	4,119	2,368	2,730	5,394	3,534	3,048
Selling, general and administrative	5,413	5,240	4,925	5,387	4,653	4,355	6,228	4,550
Research, development and engineering	1,482	1,306	1,333	1,329	1,134	1,017	1,276	1,177
Restructuring	55	121	—	248	—	—	—	—
Operating income (loss)	(1,672)	(1,960)	(2,139)	(4,596)	(3,057)	22	(3,970)	(2,679)
Interest expense, net	(98)	(98)	(104)	(99)	(101)	(96)	(90)	(78)
Foreign exchange gain (loss)	(62)	10	(3)	(169)	(76)	(38)	(33)	(46)
Other income, net	—	1	1	56	41	5	17	2
Loss before provision (benefit) for income taxes	(1,832)	(2,047)	(2,245)	(4,808)	(3,193)	(107)	(4,076)	(2,801)
Provision (benefit) for income taxes	175	102	153	(365)	(69)	154	998	208
Net loss	<u>\$ (2,007)</u>	<u>\$ (2,149)</u>	<u>\$ (2,398)</u>	<u>\$ (4,443)</u>	<u>\$ (3,124)</u>	<u>\$ (261)</u>	<u>\$ (5,074)</u>	<u>\$ (3,009)</u>
Loss per share:								
Basic	\$ (0.21)	\$ (0.23)	\$ (0.25)	\$ (0.47)	\$ (0.33)	\$ (0.03)	\$ (0.53)	\$ (0.32)
Diluted	\$ (0.21)	\$ (0.23)	\$ (0.25)	\$ (0.47)	\$ (0.33)	\$ (0.03)	\$ (0.53)	\$ (0.32)
Weighted average number of shares outstanding:								
Basic	9,502	9,503	9,516	9,516	9,531	9,532	9,545	9,548
Diluted	9,502	9,503	9,516	9,516	9,531	9,532	9,545	9,548

	Quarters Ended							
	Apr. 01, 2012	July 01, 2012	Sep. 30, 2012	Dec. 31, 2012	March 31, 2013	June 30, 2013	Sep. 29, 2013	Dec. 31, 2013
PERCENTAGE OF NET SALES:								
Net sales	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of goods sold	67.6%	67.8%	70.9%	81.9%	74.0%	62.1%	70.6%	72.3%
Gross profit	32.4%	32.2%	29.1%	18.1%	26.0%	37.9%	29.4%	27.7%
Selling, general and administrative	33.3%	35.9%	34.8%	41.2%	44.3%	30.6%	51.8%	41.4%
Research, development and engineering	9.1%	8.9%	9.4%	10.2%	10.8%	7.1%	10.6%	10.7%
Restructuring	0.3%	0.8%	0.0%	1.9%	0.0%	0.0%	0.0%	0.0%
Operating income (loss)	(10.3)%	(13.4)%	(15.1)%	(35.1)%	(29.1)%	0.2%	(33.0)%	(24.4)%
Interest expense, net	(0.6)%	(0.7)%	(0.7)%	(0.8)%	(1.0)%	(0.7)%	(0.7)%	(0.7)%
Foreign exchange gain (loss)	(0.4)%	0.1%	(0.0)%	(1.3)%	(0.7)%	(0.3)%	(0.3)%	(0.4)%
Other income, net	0.0%	0.0%	0.0%	0.4%	0.4%	0.0%	0.1%	0.0%
Loss before provision (benefit) for income taxes	(11.3)%	(14.0)%	(15.9)%	(36.8)%	(30.4)%	(0.8)%	(33.9)%	(25.5)%
Provision (benefit) for income taxes	1.1%	0.7%	1.1%	(2.8)%	(0.7)%	1.1%	8.3%	1.9%
Net loss	<u>(12.3)%</u>	<u>(14.7)%</u>	<u>(17.0)%</u>	<u>(34.0)%</u>	<u>(29.7)%</u>	<u>(1.8)%</u>	<u>(42.2)%</u>	<u>(27.4)%</u>

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BTU INTERNATIONAL, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)
(unaudited)

	September 28, 2014	December 31, 2013
Assets		
Current assets		
Cash and cash equivalents	\$ 10,428	\$ 13,991
Accounts receivable, less allowance of \$1,245 and \$1,280 at September 28, 2014 and December 31, 2013	12,578	11,370
Inventories	10,696	9,831
Other current assets	764	1,126
Total current assets	34,466	36,318
Property, plant and equipment, net	2,624	3,386
Other assets, net	2,165	626
Total assets	<u>\$ 39,255</u>	<u>\$ 40,330</u>
Liabilities and stockholders' equity		
Current liabilities		
Current portion of long-term debt	\$ 380	\$ 367
Accounts payable	7,418	5,408
Deferred revenue	680	2,052
Accrued expenses	5,710	6,361
Total current liabilities	14,188	14,188
Long-term debt, less current portion	6,935	7,219
Other long-term liabilities	—	14
Total liabilities	<u>21,123</u>	<u>21,421</u>
Commitments and contingencies		
Stockholders' equity		
Preferred stock, \$1.00 par value—5,000,000 shares authorized; no shares issued or outstanding	—	—
Common stock, \$0.01 par value—25,000,000 shares authorized; 10,942,310 shares issued and 9,574,343 shares outstanding at September 28, 2014 and 10,924,856 shares issued and 9,556,889 shares outstanding at December 31, 2013	109	109
Additional paid in capital	52,666	52,204
Accumulated deficit	(32,045)	(30,853)
Treasury stock, at cost, 1,367,967 shares at September 28, 2014 and December 31, 2013	(4,990)	(4,990)
Accumulated other comprehensive income	2,392	2,439
Total stockholders' equity	<u>18,132</u>	<u>18,909</u>
Total liabilities and stockholders' equity	<u>\$ 39,255</u>	<u>\$ 40,330</u>

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

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BTU INTERNATIONAL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except share and per share data)
(unaudited)

	Three Months Ended		Nine Months Ended	
	September 28, 2014	September 29, 2013	September 28, 2014	September 29, 2013
Net sales	\$ 15,917	\$ 12,014	\$ 44,037	\$ 36,761
Costs of goods sold	9,840	8,480	26,925	25,103
Gross profit	6,077	3,534	17,112	11,658
Operating expenses:				
Selling, general and administrative	4,921	6,228	14,622	15,237
Research, development and engineering	939	1,276	3,179	3,427
Operating income (loss)	217	(3,970)	(689)	(7,006)
Interest income	8	13	26	36
Interest expense	(84)	(103)	(253)	(323)
Foreign exchange income (loss)	(34)	(33)	22	(147)
Other income	3	17	10	63
Income (loss) before provision for income taxes	110	(4,076)	(884)	(7,377)
Provision for income taxes	110	998	308	1,083
Net loss	\$ (0)	\$ (5,074)	\$ (1,192)	\$ (8,460)
Loss per share:				
Basic	\$ (0.00)	\$ (0.53)	\$ (0.12)	\$ (0.89)
Diluted	\$ (0.00)	\$ (0.53)	\$ (0.12)	\$ (0.89)
Weighted average number of shares outstanding:				
Basic shares	9,574,343	9,544,864	9,563,934	9,536,010
Effect of dilutive options	—	—	—	—
Diluted shares	9,574,343	9,544,864	9,563,934	9,536,010

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

BTU INTERNATIONAL, INC.
CONDENSED CONSOLIDATED STATEMENT OF COMPREHENSIVE LOSS
(in thousands)
(unaudited)

	Three Months Ended		Nine Months Ended	
	September 28, 2014	September 29, 2013	September 28, 2014	September 29, 2013
Comprehensive loss is calculated as follows:				
Net loss	\$ (0)	\$ (5,074)	\$ (1,192)	\$ (8,460)
Other comprehensive income (loss):				
Foreign currency translation adjustment	(17)	23	(47)	88
Comprehensive loss	<u>\$ (17)</u>	<u>\$ (5,051)</u>	<u>\$ (1,239)</u>	<u>\$ (8,372)</u>

BTU INTERNATIONAL, INC.
CONDENSED CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
FOR THE NINE MONTHS ENDED SEPTEMBER 28, 2014
(in thousands)
(unaudited)

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Treasury Stock		Accumulated Other Comprehensive Income	Total
	shares	\$			shares	\$		
Balance at December 31, 2013	10,925	\$109	\$ 52,204	\$ (30,853)	1,368	\$(4,990)	\$ 2,439	\$18,909
Net loss	—	—	—	(1,192)	—	—	—	(1,192)
Exercise of stock options	1	—	1	—	—	—	—	1
Issuance of common stock	16	—	8	—	—	—	—	8
Stock-based compensation	—	—	453	—	—	—	—	453
Translation adjustment	—	—	—	—	—	—	(47)	(47)
Balance at September 28, 2014	<u>10,942</u>	<u>\$109</u>	<u>\$ 52,666</u>	<u>\$ (32,045)</u>	<u>1,368</u>	<u>\$(4,990)</u>	<u>\$ 2,392</u>	<u>\$18,132</u>

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

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BTU INTERNATIONAL, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE NINE MONTHS ENDED SEPTEMBER 28, 2014 AND SEPTEMBER 29, 2013
(\$ in thousands)
(unaudited)

	September 28, 2014	September 29, 2013
Cash flows from operating activities:		
Net loss	\$ (1,192)	\$ (8,460)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	889	1,307
Provision (recovery) for bad debts	115	(181)
Provision for inventory obsolescence	321	1,706
Gain on sale of property, plant and equipment	—	(51)
Stock-based compensation	453	477
Deferred taxes	—	825
Net change in operating assets and liabilities:		
Accounts receivable	(1,375)	692
Inventories	(1,288)	(2,327)
Other current assets	358	1,409
Deferred revenue	(1,371)	(629)
Other assets	(1,551)	(154)
Other long-term liabilities	(14)	620
Accounts payable	2,042	1,142
Accrued expenses	(614)	486
Net cash used in operating activities	<u>(3,227)</u>	<u>(3,138)</u>
Cash flows from investing activities:		
Proceeds from sale of property, plant and equipment	—	57
Purchases of property, plant and equipment	(57)	(208)
Net cash used in investing activities	<u>(57)</u>	<u>(151)</u>
Cash flows from financing activities:		
Principal payments under loan and capital lease agreements	(271)	(294)
Issuance of common stock	8	17
Proceeds from the exercise of stock options	1	—
Net cash used in financing activities	<u>(262)</u>	<u>(277)</u>
Effects of exchange rates on cash	<u>(17)</u>	<u>20</u>
Net decrease in cash and cash equivalents	(3,563)	(3,546)
Cash and cash equivalents, beginning of period	13,991	20,218
Cash and cash equivalents, end of period	<u>\$ 10,428</u>	<u>\$ 16,672</u>
Supplemental disclosures of cash flow information:		
Cash paid during the periods for:		
Interest	\$ 228	\$ 293
Income taxes	332	484

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

BTU INTERNATIONAL, INC.
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

(1) Basis of Presentation

The condensed consolidated balance sheet, financial information and related disclosures as of December 31, 2013 have been derived from BTU's (the "Company's") consolidated financial statements, which have been audited as of that date. The condensed consolidated balance sheet as of September 28, 2014 and the related condensed consolidated statements of operations and comprehensive loss for the three and nine months ended September 28, 2014 and September 29, 2013 are unaudited. The condensed consolidated statement of stockholders' equity and consolidated statements of cash flows for the nine months ended September 28, 2014 and September 29, 2013 are unaudited. In the opinion of management, all adjustments necessary for the fair presentation of such financial statements have been included. Such adjustments consisted only of normal recurring items. Interim results are not necessarily indicative of results for any other period or for the full year. These financial statements do not include all disclosures associated with annual financial statements and, accordingly, should be read in conjunction with the footnotes contained in the Company's consolidated financial statements as of and for the year ended December 31, 2013, together with the auditors' report, included in the Company's Annual Report on Form 10-K, as filed with the Securities and Exchange Commission (the "SEC").

Pending Merger

On October 21, 2014, the Company entered into an Agreement and Plan of Merger (the "Merger Agreement"), by and among the Company, Amtech Systems, Inc., an Arizona corporation ("Amtech"), and BTU Merger Sub, Inc., a Delaware corporation ("Merger Sub"), pursuant to which Merger Sub will be merged with and into the Company (the "Merger"), with the Company surviving as a wholly owned subsidiary of Amtech. The Merger Agreement has been approved by the Boards of Directors of both the Company and Amtech and is subject to approval of the Company's and Amtech's stockholders.

Subject to the terms and conditions set forth in the Merger Agreement, at the effective time of the Merger, each share of common stock, par value \$0.01 per share, of the Company ("Company Shares"), issued and outstanding immediately prior to the effective time of the Merger will be converted into the right to receive and become exchangeable for 0.3291 shares (the "Exchange Ratio") of common stock, par value \$0.01 per share, of Amtech ("Amtech Shares"). Any outstanding Company stock option shall be assumed by Amtech and shall be converted into an option to purchase shares of Amtech common stock on substantially the same terms and conditions as were applicable to such Company stock option, with appropriate adjustments based upon the Exchange Ratio to the exercise price and the number of shares of Amtech common stock subject to such stock option. Each Company restricted stock unit that remains unvested immediately prior to the effective time of the Merger will become a fully vested and unrestricted share of Company common stock.

The Company and Amtech have each made customary representations, warranties and covenants and the merger is subject to various closing conditions. The foregoing is not a complete description of all of the terms and conditions of the Merger Agreement and reference is made to the full text of the Merger Agreement, which is filed as an exhibit to our Current Report on Form 8-K filed with the SEC on October 22, 2014, for more information.

(2) Summary of Significant Accounting Policies

The accounting policies underlying the accompanying unaudited condensed consolidated financial statements are those set forth in Note 1 to the consolidated financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2013, as filed with the SEC.

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(3) Inventories

The components of inventories are as follows:

	September 28, 2014	December 31, 2013
	(\$ in thousands)	
Raw materials and manufactured components	\$ 5,835	\$ 6,010
Work-in-process	2,940	2,459
Finished goods	1,921	1,362
Total inventory	<u>\$ 10,696</u>	<u>\$ 9,831</u>

(4) Accrued Expenses

The components of accrued expenses are as follows:

	September 28, 2014	December 31, 2013
	(\$ in thousands)	
Accrued commissions	\$ 861	\$ 1,086
Accrued warranty	488	379
Accrued taxes	1,912	1,858
Accrued audit	436	419
Accrued legal	872	1,430
Accrued bonus	88	85
Payroll and payroll taxes	501	688
Accrued cost of sales	162	142
Other	390	274
Total Accrued expenses	<u>\$ 5,710</u>	<u>\$ 6,361</u>

Warranty

The Company provides standard warranty coverage for labor for 12 months and special extended material-only coverage on certain products. The Company estimates and records an accrual for anticipated warranty claims based on sales. The accrual for warranty claims covers the estimated cost of materials. Actual warranty claims incurred are charged to the accrual. Factors that affect the Company's product warranty accrual include the number of installed units, the anticipated cost of warranty repairs and historical and anticipated rates of warranty claims.

The following table reflects changes in the Company's accrued warranty account during the nine months ended September 28, 2014 (in thousands):

	Nine Months Ended September 28, 2014
Beginning balance, December 31, 2013	\$ 379
Plus: accruals related to new sales	426
Less: warranty claims incurred and reserve adjustment	(317)
Ending balance, September 28, 2014	<u>\$ 488</u>

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(5) Debt

Long-term debt at September 28, 2014 and December 31, 2013 consisted of:

	September 28, 2014	December 31, 2013
	(\$ in thousands)	
Mortgage note payable, interest rate of 4.43%	\$ 7,315	\$ 7,586
Less—current portion of long-term debt	380	367
Long-Term debt, less current portion	<u>\$ 6,935</u>	<u>\$ 7,219</u>

Mortgage Note

On March 30, 2006, the Company entered into a \$10 million mortgage note secured by its real property in Billerica, Massachusetts, which had an initial maturity date of December 23, 2015. On September 9, 2010, the Company signed a First Loan Modification Agreement relating to the mortgage note, which reduced the annual interest rate from 6.84% to 5.50% and the monthly payment from \$76,280 to \$69,000.

On September 26, 2013, the Company signed a Second Loan Modification Agreement relating to the mortgage note, which extended the maturity date from December 23, 2015 to September 26, 2023. The modification also reduced the annual interest rate from 5.50% to 4.43% through September 26, 2018, at which time the interest rate will be adjusted to a per annum fixed rate equal to the aggregate of the Federal Home Loan Board (FHLB) Five Year Classic Advance Rate plus two hundred forty basis points. The current monthly payment was reduced from \$69,000 to \$57,997. The mortgage note had an outstanding balance on September 28, 2014 of approximately \$7.3 million. All outstanding principal and accrued and unpaid interest will be due and payable on the maturity date.

Letters of Credit

On August 31, 2009, the Company entered into a pledge and assignment agreement with a bank, pursuant to which the bank agreed to issue letters of credit which the Company will cash collateralize via restricted cash deposits at the bank. As of September 28, 2014, the value of the outstanding letters of credit issued by the bank for the Company was \$249,221. This restricted cash value is included in the Company's balance sheet in other current assets.

(6) Net Loss Per Share

Basic earnings per share (EPS) is computed by dividing net income (loss) available to common stockholders by the weighted-average number of common shares outstanding during the period. Diluted EPS is computed using the weighted-average number of common shares and potentially dilutive securities outstanding during the period, using the treasury stock method. Potentially dilutive securities include outstanding stock options and unvested restricted stock units (RSUs). Due to their anti-dilutive effect, approximately 1,394,720 and 1,315,670 securities to purchase common stock were excluded from the calculation of diluted loss per share for the three and nine months ended September 28, 2014 and September 29, 2013, respectively. However, these potentially dilutive securities could become dilutive in future periods.

(7) Accounting for Stock-Based Compensation

Stock Options

The Company accounts for share-based compensation in accordance with the provisions of SFAS No. 123R, *Share-Based Payment* (now codified as FASB ASC Topic 718, *Compensation-Stock Compensation* ("ASC 718")). This statement establishes standards for accounting for transactions in which an entity exchanges its equity instruments for goods or services. The Company's stock option compensation expense was \$94,339 and \$340,329 for the three and nine months ended September 28, 2014, respectively and \$140,027 and \$436,984 for the three and nine months ended September 29, 2013, respectively. These amounts do not include expense related to restricted stock awards or the employee stock purchase plan.

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The fair value of each option is estimated on the date of grant using the Black-Scholes option-pricing model. This model incorporates certain assumptions for inputs including a risk-free market interest rate, expected dividend yield of the underlying common stock, expected option life and expected volatility in the market value of the underlying common stock. The Company is also required to estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates. Historical data is used to estimate pre-vesting forfeitures and record stock-based compensation expense only for those awards that are expected to vest. Accordingly, awards ultimately expected to vest have been reduced by an annualized estimated forfeiture rate of 4%.

Calculation of Fair Value—Assumptions Used:

	Nine months ended	
	September 28, 2014	September 29, 2013
Expected Volatility	64.88%	66.84%
Expected Life (in years)	4.10	4.21
Risk-Free Interest Rate	1.26%	0.79%
Expected Dividend Yield	—	—

Expected volatilities are based on the weighted average historical volatility of the Company's common stock for the expected life of the option. The Company has significant historical data to help evaluate the expected lives of options in developing its assumption. The risk-free interest rate is based upon quoted market yields for United States Treasury debt securities with a term approximating the expected life of the options. The expected dividend yield is based upon the Company's history of not issuing dividends and management's current expectation of the same.

The following table summarizes the stock option activity during the nine months ended September 28, 2014:

	Shares	Weighted-Average Exercise Price	Average Remaining Contractual Term	Aggregate Intrinsic Value
Options				
Outstanding at December 31, 2013	1,408,692	\$ 5.30		
Granted	19,032	\$ 2.91		
Exercised	(700)	\$ 2.00		
Forfeited/Cancelled	(128,604)	\$ 9.21		
Outstanding at September 28, 2014	1,298,420	\$ 4.88	3.09	\$277,074
Exercisable at September 28, 2014	1,008,086	\$ 5.27	2.48	\$153,916

The weighted-average grant date fair value of options granted during the nine-month periods ended September 28, 2014 and September 29, 2013 were \$1.44 and \$1.21, respectively. The aggregate fair value of options exercised during the nine-month periods ended September 28, 2014 and September 29, 2013 was \$720 and \$0, respectively.

As of September 28, 2014, there was \$278,231 of total unrecognized compensation cost related to non-vested options granted under the Company's option plans. That cost is expected to be recognized over a weighted-average period of 1.09 years. The total fair value of options vested during the nine-month period ended September 28, 2014 was \$282,460.

Restricted Stock Units

In April and September 2014, the Company granted a total of 69,725 restricted stock units to various employees. The weighted-average grant date fair value of the restricted stock units during the nine-month periods ended September 28, 2014 was \$2.99. The Company recorded compensation expense of \$104,667 and \$27,913 during the nine-month period ended September 28, 2014 and September 29, 2013, respectively, related to restricted stock units. As of September 28, 2014, there was \$185,391 of unrecognized compensation costs related to grants of restricted stock units and these grants have a remaining life of 1.09 years.

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(8) Fair Value of Financial Instruments

In accordance with the requirements of FASB ASC Topic 820, *Fair Value Measurements and Disclosures* (“ASC 820”), the Company groups its financial assets and liabilities measured at fair value on a recurring basis in three levels, based on the markets in which the assets and liabilities are traded and the reliability of the assumptions used to determine fair value. These levels are:

- Level 1—Valuation is based upon quoted market price for identical instruments traded in active markets.
- Level 2—Valuation is based on quoted market prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market.
- Level 3—Valuation is generated from model-based techniques that use significant assumptions not observable in the market. Valuation techniques include use of discounted cash flow models and similar techniques.

In accordance with the requirements of ASC 820, it is the Company’s policy to maximize the use of observable inputs and minimize the use of unobservable inputs when developing fair value measurements. When available, the Company uses quoted market prices to measure fair value. If market prices are not available, the fair value measurement is based on models that use primarily market based parameters including interest rate yield curves, option volatilities and currency rates. In certain cases, where market rate assumptions are not available, the Company is required to make judgments about assumptions market participants would use to estimate the fair value of a financial instrument. Changes in the underlying assumptions used, including discount rates and estimates of future cash flows, could significantly affect the results of current or future values.

The carrying amounts of the Company’s cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximate their fair value due to their short-term nature. Long-term debt is also reported at carrying value and approximates fair value as the interest rate on the mortgage note payable of 4.43% approximates the current market interest rate.

(9) Segment Reporting

Segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision-maker in deciding how to allocate resources and in assessing performance. The Company operates as a single business segment called Thermal Processing Capital Equipment.

The Thermal Processing Capital Equipment segment consists of designing, manufacturing, selling and servicing thermal processing equipment and related process controls for use in the electronics, alternative energy, automotive and other industries. This business segment includes the supply of solder reflow systems used for surface mount applications in printed circuit board assembly. Thermal processing equipment is used in low temperature curing/encapsulation, hybrid integrated circuit manufacturing, integrated circuit packaging and sealing, and processing multi-chip modules. In addition, thermal processing equipment is used for solar cell processing, sintering nuclear fuel for commercial power generation, brazing and sintering of ceramics and powdered metals, and depositing precise thin film coatings. The business segment’s customers are multinational original equipment manufacturers and contract manufacturing companies.

Tangible long-lived assets by geographic location are as follows:

	September 28, 2014	December 31, 2013
	(\$ in thousands)	
United States	\$ 2,237	\$ 2,889
Asia Pacific	387	497
	<u>\$ 2,624</u>	<u>\$ 3,386</u>

(10) Subsequent Events

The Company evaluated subsequent events through the time of issuance of these condensed consolidated financial statements. Other than as set forth below, the Company is not aware of any significant events that occurred subsequent to the balance sheet date, but prior to the filing of this report that would have a material impact on its condensed consolidated financial statements.

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On October 21, 2014, the Company entered into an Agreement and Plan of Merger (the “Merger Agreement”), by and among the Company, Amtech Systems, Inc., an Arizona corporation (“Amtech”), and BTU Merger Sub, Inc., a Delaware corporation (“Merger Sub”), pursuant to which Merger Sub will be merged with and into the Company (the “Merger”), with the Company surviving as a wholly owned subsidiary of Amtech. The Merger Agreement has been approved by the Boards of Directors of both the Company and Amtech and is subject to the Company Stockholder Approval (as defined below) and the Amtech Stockholder Approval (as defined below).

Subject to the terms and conditions set forth in the Merger Agreement, at the effective time of the Merger, each share of common stock, par value \$0.01 per share, of the Company (“Company Shares”), issued and outstanding immediately prior to the effective time of the Merger will be converted into the right to receive and become exchangeable for 0.3291 shares (the “Exchange Ratio”) of common stock, par value \$0.01 per share, of Amtech (“Amtech Shares”). Any outstanding Company stock option shall be assumed by Amtech and shall be converted into an option to purchase shares of Amtech common stock on substantially the same terms and conditions as were applicable to such Company stock option, with appropriate adjustments based upon the Exchange Ratio to the exercise price and the number of shares of Amtech common stock subject to such stock option. Each Company restricted stock unit that remains unvested immediately prior to the effective time of the Merger will become a fully vested and unrestricted share of Company common stock.

The Merger Agreement contains customary representations and warranties of the Company and Amtech relating to their respective businesses and public filings. Additionally, the Merger Agreement provides for customary pre-closing covenants of the Company and Amtech, including, with regard to the Company, covenants (i) to conduct its business in the ordinary course consistent with past practice and to refrain from taking certain actions without Amtech’s consent, (ii) not to solicit proposals relating to alternative transactions or, subject to certain exceptions, enter into discussions concerning or provide information in connection with alternative transactions, and (iii) subject to certain exceptions, to recommend that the Company’s stockholders adopt the Merger Agreement.

Consummation of the Merger is subject to various conditions, including, among others, customary conditions relating to the adoption of the Merger Agreement by the requisite vote of the Company’s stockholders (the “Company Stockholder Approval”) and the approval of the issuance of Amtech Shares in connection with the Merger by the requisite vote of Amtech’s stockholders (the “Amtech Stockholder Approval”).

The Merger Agreement provides certain termination rights for both the Company and Amtech and further provides that upon termination of the Merger Agreement under certain circumstances (i) (including the Company entering into an alternative transaction), the Company will be obligated to pay Amtech a termination fee of \$1,320,000 or an expense reimbursement amount of \$1,000,000 or (ii) Amtech will be obligated to pay the Company a termination fee of \$1,320,000 or an expense reimbursement amount of \$1,000,000. In addition, either the Company or Amtech can terminate the Merger Agreement if the Merger has not been consummated on or before 120 days following the date the joint registration statement on Form S-4 and proxy statement is filed with the SEC, if the failure to close is not caused by the breach of the Merger Agreement by the party electing to terminate.

The foregoing description of the Merger Agreement and the transactions contemplated thereby does not purport to be complete and is qualified in its entirety by the full text of the Merger Agreement and related documents, copies of which have been filed with the SEC on a Current Report on Form 8-K filed on October 22, 2014 and the terms of which are incorporated by reference herein.

Shortly after the Company entered into the Merger Agreement with Amtech, the Company learned that a putative stockholder class action complaint was filed, purportedly on behalf of BTU’s public stockholders, in the Court of Chancery of the State of Delaware against the members of the BTU Board, Amtech and Merger Sub. The complaint generally alleges, among other things, that the members of the BTU Board breached their fiduciary duties owed to BTU’s public stockholders by causing BTU to enter into the Merger Agreement and approving the merger, and that Amtech and Merger Sub aided and abetted such breaches of fiduciary duties. In addition, the complaint alleges that the Merger Agreement improperly favors Amtech and unduly restricts BTU’s ability to negotiate with other potential bidders. The complaint generally seeks, among other things, declaratory and injunctive relief concerning the alleged fiduciary breaches, injunctive relief prohibiting defendants from consummating the Merger, other forms of equitable relief, and compensatory damages. The Company believes that the claims are without merit and it intends to defend against the litigation vigorously on behalf of the BTU Board.

THE MERGER

The following discussion contains certain information about the merger. The discussion is subject, and qualified in its entirety by reference, to the merger agreement attached as Annex A to this joint proxy statement/prospectus and incorporated herein by reference. We urge you to read carefully this entire joint proxy statement/prospectus, including the merger agreement attached as Annex A, for a more complete understanding of the merger.

Terms of the Merger

Each of Amtech's and BTU's respective boards of directors has approved the merger agreement. The merger agreement provides for the merger of Merger Sub with and into BTU, with BTU surviving as a wholly owned subsidiary of Amtech.

In the merger, each share of BTU common stock, par value \$0.01 per share, issued and outstanding immediately prior to the completion of the merger, except for specified shares of BTU common stock held by BTU or Amtech, will be converted into the right to receive 0.3291 shares of Amtech common stock, par value \$0.01 per share. No fractional shares of Amtech common stock will be issued in connection with the merger, and holders of BTU common stock will be entitled to receive one full share of Amtech common stock in lieu thereof.

Amtech stockholders and BTU stockholders are being asked to adopt the merger agreement. See "The Merger Agreement" for additional and more detailed information regarding the legal documents that govern the merger, including information about the conditions to the completion of the merger and the provisions for terminating or amending the merger agreement.

Background of the Merger

From time to time, members of management of each of Amtech and BTU have engaged in reviews and discussions of their respective long-term strategies and objectives, considering ways that they might collaborate to enhance stockholder value and their respective company's performance and prospects in light of competitive and other relevant factors. Generally, these reviews have centered on strategies to improve each company's operations or pursuit of opportunities in new markets or lines of business. At various times, these assessments included discussions and analysis of various potential business combination transactions as a means to enhance or improve stockholder value.

Representatives from both Amtech and BTU have been acquainted for more than ten years, and, from time to time, have discussed business issues and other matters, including the potential for the development of a strategic relationship between the companies.

During one of those discussions in early 2013, both J.S. Whang, Executive Chairman of Amtech, and Fokko Peninga, President and Chief Executive Officer of Amtech, met with Paul J. van der Wansem, President and Chief Executive Officer of BTU to discuss general industry and business matters. In the course of those conversations and discussions, the parties expressed mutual interest in considering a potential strategic business combination between the two companies. In particular, Mr. Whang and Mr. van der Wansem informally discussed the concept of joining the two companies at a lunch meeting on April 10, 2013. In early May, Mr. Peninga and Mr. van der Wansem met at BTU's Shanghai, China facility to further explore business combination opportunities. Mr. van der Wansem and Mr. Whang met again on June 27, 2013 in Boston.

During these early 2013 discussions between Messrs. Whang and Peninga and Mr. van der Wansem, the parties continued to explore a potential strategic business combination involving their respective companies and the benefits to each company from such a transaction. The discussions centered on general information about each company and the benefits that might result from a strategic merger transaction principally based on and reflecting the relative market values of the companies. The various structures discussed involved representation on the board of the potential combined company from each of Amtech and BTU, as well as proposed exchange ratios. Mr. Whang and Mr. van der Wansem also discussed the results of these meetings, as well as the potential benefits of a strategic business combination, with members of their respective senior management teams and boards of directors.

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At meetings of the BTU board of directors on July 29, 2013, August 29, 2013, October 3, 2013, October 28, 2013 and December 4, and at meetings of the Amtech board of directors or a subset of the board of directors on November 13, 2013 and on December 12, 2013, the senior management teams of BTU and Amtech reviewed for their respective boards of directors or a subset of these directors their discussions with Amtech and BTU, respectively, and the directors of each company discussed the potential strategic fit and benefits of a business combination, including the potential synergies potentially resulting from such a transaction. Following these discussions, both boards of directors authorized their respective senior management teams to continue discussions relating to a possible business combination transaction between the two companies.

As these discussions continued during the spring and summer of 2013, Amtech and BTU each determined that the discussions to-date merited more detailed due diligence investigations and, accordingly, the companies executed a mutual non-disclosure agreement on August 8, 2013.

In August 2013, representatives of Amtech and BTU shared information regarding each company's prospects and businesses to enable the preparation of pro forma models for a combination. During this period, BTU engaged outside financial advisory assistance to assist in assessing the two businesses combined. At BTU's invitation, Mr. Whang and Mr. Bradley Anderson, Amtech's chief financial officer, traveled to Billerica, Massachusetts on August 28, 2013, met with BTU management at an off-site location, and delivered an informational presentation about Amtech and its business to the BTU board of directors on August 29, 2013. After the presentation, Mr. van der Wansem and Mr. Whang met again in Boston on August 30, 2013.

During September 2013, the parties continued to discuss a potential combination of BTU and Amtech. During this period, Mr. Anderson and Mr. Tallian prepared and exchanged preliminary combined company cost reduction scenarios. In addition, in early September Stifel upgraded Amtech's common stock to a "Buy" rating, with particular attention to Amtech's opportunities in the solar manufacturing market. On October 2 and October 3, 2013, Mr. Whang, Mr. van der Wansem, and Mr. Tallian met and continued discussions regarding a potential transaction, including personnel matters implicated in a combination, and followed up with additional communications regarding possible valuations. Mr. Whang, Mr. van der Wansem and Mr. Tallian met again at a dinner meeting on October 24, 2013 and a follow-on meeting on October 25, during which transaction matters, including implementation and potential valuations and exchange ratios for a transaction were discussed. For purposes of fostering continued discussion and in hopes of moving forward with the commencement of due diligence by both parties, Amtech proposed an initial total equity price for BTU of \$44.6 million.

On October 28, 2013, the BTU board of directors met, and Mr. van der Wansem and Mr. Tallian reported to the board of directors on the status of their discussions with Amtech and provided their analysis of the potential combination, available cost savings, possible exchange ratio scenarios and transaction structures. The BTU board of directors, after discussion, authorized management to continue discussions with Amtech and undertake a due diligence review in connection with the discussions.

Later that same day, Mr. Anderson had discussions with Mr. Tallian regarding the outcome of the BTU board meeting, and both Amtech and BTU agreed on an initial December 6, 2013 deadline for both parties to complete their initial due diligence.

As part of the continuing process, Mr. Tallian contacted BTU's legal counsel, Pierce Atwood LLP, on November 7, 2013, and requested that Pierce Atwood commence preparation of a draft template for a merger agreement, as well as to provide "data room" assistance to BTU. In addition, on November 14 and 15, 2013, Mr. van der Wansem and Mr. Tallian met with Mr. Pentinga and Mr. Anderson at Amtech's Netherlands facilities as part of a due diligence process. Further, on December 5 and 6, 2013, Mr. Whang, Mr. Pentinga and Mr. Anderson met with BTU management and members of the BTU board of directors and discussed the potential benefits of a transaction, possible alternative scenarios, and otherwise provided Amtech's views of a proposed combination to BTU's board of directors.

Through the end of 2013 and into the first quarter of 2014, Amtech's and BTU's respective senior executives engaged in further discussions and continued to share information regarding a possible business combination and generally regarding the businesses of the two companies. During this time, the trading price of Amtech common stock began (and continued) to rise significantly, while the trading price of BTU common stock decreased and then remained relatively stagnant. Discussions between the parties regarding previously proposed valuations and exchange ratios focused on this trend and potential decrease in the equity value previously offered by Amtech in order to reflect the respective changes in the parties' trading prices as well as

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Amtech's results of its expanded business and legal due diligence of BTU. Accordingly, Amtech's and BTU's senior management teams began to discuss a potential business combination on terms which would provide for the merger of Amtech and BTU in a stock-for-stock transaction based on a fixed exchange ratio, as well as a potential Amtech board seat for Mr. van der Wansem. These discussions were consistent with the broad outlines of a potential transaction previously discussed.

During January 2014, Mr. Pentinga and Mr. Anderson met with Mr. van der Wansem and Mr. Tallian in New York on January 14, and met with Mr. Tallian and Mr. Griffin, BTU's vice president of sales, at BTU's headquarters facility on January 17, while Mr. Whang and Mr. van der Wansem met on January 21 in Boston. Additionally, on January 13, 2014, BTU issued a press release announcing that revenues for the fourth quarter failed to meet previously announced expectations.

Beginning in early 2014, representatives of Needham & Company, financial advisor to BTU, met with representatives of BTU management regarding a potential review of strategic alternatives, including a potential merger with Amtech; a merger, sale or joint venture with another party; and the possibility of continuing to operate the business on a stand-alone basis.

On January 14, 2014, representatives of "Company A" contacted BTU management and discussed potential strategic opportunities for the two companies, including a potential merger of the parties. On January 28, members of the BTU management team met with Company A's management at a Company A facility to discuss the two parties' businesses and financial prospects.

On February 24, 2014, the BTU board of directors met, during which the board discussed and agreed to explore further alternatives available to BTU to maximize shareholder value and to address its negative cash flow, including restructuring alternatives and pursuing a widespread acquisition strategy, including engaging Needham & Company for advisory services in this regard. The BTU board also agreed that a "Transaction Committee" of the directors, comprised of Mr. van der Wansem and Messrs. Loy and Wrinn, outside directors of BTU, be established to support management in evaluating and pursuing strategic alternatives that may become available to BTU and to serve as a conduit for keeping the full board informed of the negotiation and diligence processes to be undertaken. BTU subsequently entered into an engagement letter with Needham & Company on February 27, 2014. From that date through April 3, representatives of Needham & Company conducted due diligence on BTU, its business and prospects, and prepared materials to assist the BTU board with respect to its evaluation of potential strategic alternatives available to BTU. During this process, representatives of Needham & Company held telephonic and in-person meetings, including on March 3 and March 14, with members of the BTU board regarding the status of Needham & Company's work and next steps.

In mid-March, 2014, the Amtech board authorized the engagement of Stifel, Nicolaus & Company ("Stifel") as its exclusive financial advisor in connection with the contemplated business combination with BTU.

Between March 14th and May 28th, 2014, Needham & Company and BTU management contacted 30 parties, including 11 financial sponsors or private equity firms and 19 strategic acquirers or merger partners, including Company A, "Company B" and Amtech. Of the 30 parties Needham & Company and BTU management contacted during this period, nine parties executed non-disclosure agreements and received confidential information with respect to BTU (including Amtech, Company A, and Company B). Of these nine parties, seven were provided with a bidding instructions letter by Needham & Company on April 10, 2014 (including Amtech, Company A, and Company B), and two declined to participate in further discussions. Of these seven parties who received a bidding instructions letter, on April 23, 2014, two submitted an initial, non-binding indication of interest with respect to a transaction: Amtech, proposing an all-stock transaction with an aggregate equity purchase price of \$35 million; and Company B, proposing an all-cash transaction. Five parties (including Company A) declined to participate in further discussions.

During this period of time, the BTU board of directors met twice, on April 28, 2014 and on May 16, 2014. On April 28, the full board was joined by representatives of Needham & Company, who discussed the progress of the strategic options process. The board also formally ratified the creation of the Transaction Committee and Messrs. Loy, van der Wansem and Wrinn's role as members. On an informal basis, the Transaction Committee had been meeting prior to April 28, and thereafter continued to meet with representatives of Needham & Company and BTU management to discuss the process and to provide advice and direction to management and to Needham & Company. On May 16, 2014, the full board met following BTU's annual meeting of stockholders, at which time Mr. van der Wansem and BTU management updated the board members on the progress of the process and the status of due diligence discussions with interested parties.

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After submitting its non-binding indication of interest on April 23, Company B provided Needham & Company with a due diligence request list on April 29, to which BTU management responded. Representatives of Company B met for further due diligence at BTU's headquarters facility on May 8, 2014, and at BTU's Shanghai facility on May 21, 2014. On May 22, 2014 BTU provided Company B with information reflecting BTU's management's updated financial outlook for its 2014 second quarter. On May 27, 2014, Company B requested two additional days to submit a revised indication of interest, which was granted. On May 30, 2014 Company B declined to proceed with further discussions regarding a transaction.

During the period between March 14 and May 28, 2014, meetings took place between BTU and Amtech at Needham & Company's offices in New York City on March 28, 2014, at BTU's headquarters on May 8, 2014, May 13 and 14, 2014, on May 20 and 22, 2014 at BTU's Shanghai, China facilities, with extensive interviews of operations and sales personnel, and on May 23, 2014 at Amtech's Kingstone joint venture in Shanghai, China for the purpose of BTU's investigation and evaluation of the Kingstone operations. In addition, on May 22, 2014, BTU provided Amtech with information reflecting BTU's management's updated financial outlook for its 2014 second quarter. On May 27, 2014, Amtech provided BTU with certain additional forward-looking financial information and, on that day, Amtech management and BTU management met telephonically to discuss that information. On May 28, 2014, representatives from Stifel, on behalf of Amtech, submitted a revised non-binding indication of interest, which contemplated a 100% stock transaction with a fixed aggregate equity price of \$33 million.

On June 2, the BTU board of directors met with representatives of Needham & Company and Pierce Atwood LLP, BTU's outside legal counsel. Needham & Company representatives described the full scope of the process, including parties contacted, parties responding, diligence sessions and the resulting indication of interest by Amtech. The board discussed the Amtech proposal and discussed the alternatives available to BTU, including a restructuring and abandonment of the merger scenario. Also discussed was the proposed timeline for continuing negotiations with Amtech, as well as the appropriate timeline for implementing a restructuring, in light of BTU's cash reserves and use of cash during such periods. A representative of Pierce Atwood provided the board with advice concerning the scope and nature of its duties regarding the evaluation of the Amtech proposal and the restructuring alternative, as well as the Delaware law regarding the evaluation of its discharge of the board's fiduciary duties in the context of the contemplated transaction with Amtech. The board of directors instructed the representatives of Needham & Company to revert to Stifel with a proposal to improve the terms of the initial offer, including improving the pricing for the benefit of BTU's stockholders and shortening the requested exclusivity period.

Throughout June of 2014, representatives of Amtech and BTU conducted mutual due diligence involving the management teams from both companies. Amtech performed on-site diligence of BTU's Billerica and Shanghai properties, and the management teams from both companies, together with their respective financial advisors, engaged in strategic discussions regarding organizational structure, retention of key personnel, possible business unit redundancies, and other strategic issues following the completion of a potential merger.

Also in June of 2014, BTU management and the BTU Transaction Committee met several times with representatives of Needham & Company regarding the nature and progress of negotiations with Stifel and Amtech, and Needham & Company and Stifel met telephonically and communicated regarding proposals for revising Amtech's indication of interest.

On June 17th, 2014, representatives of Stifel, on behalf of Amtech, submitted a revised, non-binding indication of interest for a merger with BTU. The June 17th indication of interest contemplated an all-stock transaction with a fixed aggregate equity purchase price of \$33 million, in exchange for all of the outstanding BTU common stock and common shares underlying options and restricted stock units. In addition, Amtech agreed to a fixed price collar mechanism, whereby the value of the common stock to BTU common stock and option holders would be fixed at \$33 million, and the implied underlying number of Amtech shares to be delivered to BTU common stock and option holders would be determined within a "collar" of 85% and 115% of Amtech's average stock price at the time of signing of a transaction.

The June 17 Amtech indication of interest further provided that, outside of this 85% and 115% "collar", the exchange ratio in the merger agreement would be fixed, and the value of the \$33 million of total consideration would correspondingly decrease, or increase, respectively.

After significant deliberations by the BTU Transaction Committee and the full BTU board of directors, including on June 20 and June 27, 2014, including presentations which included a preliminary financial analysis of the proposed Amtech transaction by

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Needham & Company and legal analysis by Pierce Atwood LLP, and consideration of restructuring alternatives available to BTU, the BTU board of directors instructed the representatives of Needham & Company to continue its negotiations with Amtech's representatives at Stifel to again seek a proposal with improved terms, including a higher value for BTU shares and revisions to address certain of BTU's other concerns with the Amtech proposal.

On or around June 30, 2014, BTU's board agreed to proceed with further discussions regarding the terms of Amtech's non-binding indication of interest, subject to agreeing on a timetable, due diligence schedule and exclusivity agreement, and, on July 8, 2014, the parties entered into a 45-day exclusivity agreement in order to complete due diligence, draft and negotiate transaction documents, and finalize business terms related to the potential business combination.

Following the execution of the exclusivity agreement, representatives of Amtech and BTU (including outside legal counsel and other advisors and consultants) conducted more detailed mutual due diligence investigations involving the management teams from both companies and their respective financial advisors and outside accountants, including meetings from July 15-18, 2014, July 28-29, 2014 and September 9 and 10, 2014 at BTU's headquarters and Amtech's facilities in Billerica, Massachusetts, meetings on August 8 at Amtech's Carlisle, Pennsylvania facility, August 11 and 12, 2014 at Amtech's facilities in Vaasen, the Netherlands, and August 28, 29 and 31, 2014 at BTU's Shanghai, China facility.

In mid-July 2014, Squire Patton Boggs (US) LLP, legal counsel for Amtech, began preliminary drafting of the merger agreement and related transaction documents.

During this time Mr. Whang and Amtech's senior management team and financial advisors regularly updated the board of directors of Amtech on the continuing conversations between the parties regarding the potential merger transaction, and senior management also updated the board on the results of their ongoing due diligence investigations.

On July 28, 2014, the BTU board of directors held a regularly scheduled meeting, at which the board of directors discussed with management the status of the diligence process both by and of Amtech, and also continued to discuss potential restructuring alternatives available to BTU, including the potential risks involved given BTU's declining cash reserves. Representatives of Needham & Company discussed the status of discussions and the diligence process with Amtech as well as the proposed timeline for completion of that process. A representative of Pierce Atwood LLP provided legal advice regarding certain process issues and the board's continuing monitoring of the status of the Amtech process.

On August 5, Messrs. Whang, Pentinga, and Anderson provided an update on the status of negotiations and due diligence at a regularly scheduled board meeting. In addition, Amtech's legal advisors, Squire Patton Boggs (US) LLP, updated the board on the results of its legal due diligence investigation and reviewed with the board the legal standards applicable to the board's decisions and actions on the proposed merger.

On August 13, Mr. Anderson met with Messrs. Tallian and van der Wansem to discuss key transaction terms, including the exchange ratio, corporate governance matters, and the potential discontinuation of certain BTU products following the closing of a business combination transaction. Following this meeting, Amtech instructed Squire Patton Boggs (US) LLP to continue with drafting the definitive merger agreement.

On August 23, 2014, Squire Patton Boggs (US) LLP, legal counsel to Amtech, provided an initial draft of the merger agreement to Pierce Atwood LLP, legal counsel to BTU.

On August 25, 2014, the BTU board of directors, members of BTU management, Pierce Atwood LLP and representatives of Needham & Company met and discussed the status of negotiations. At that meeting, BTU management provided an update to BTU's board of directors regarding the current state of and prospects for the business for calendar year 2014. Also during that meeting, representatives from Needham & Company provided an update to the BTU board of directors concerning the state of BTU management's and Needham & Company's negotiations and due diligence concerning Amtech, and a review of other feasible alternatives absent BTU management's ability to consummate a transaction with Amtech on mutually acceptable terms. During that meeting, members of BTU's board of directors expressed concerns regarding the state of BTU's progress and customer uptake in the solar industry despite recent evidence of some initial improvement for the solar capital equipment industry. Also during that meeting, BTU's board of directors expressed its concerns regarding the board's confidence in

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management's ability to execute the BTU status quo stand-alone business case without a substantial restructuring of the BTU Billerica operation. BTU's board of directors reviewed the possibility that in the absence of BTU management's ability to successfully consummate a transaction with Amtech on mutually acceptable terms, the likely requirement would be to undertake a significant restructuring or downsizing of BTU's Billerica operation. Finally, members of BTU's board of directors asked BTU management to work with Amtech management towards the development of a mutually agreeable operational plan for BTU's Billerica operation as part of the combined company, which would achieve the cost savings and operational efficiencies necessary to make BTU profitable as part of the combined company.

On August 29, 2014, representatives from Stifel contacted representatives from Needham & Company to communicate that, while Amtech management remained committed to moving forward toward a mutually acceptable transaction, significant steps would need to be implemented following the closing of a transaction to reduce the operating costs of BTU's Billerica operation. Between August 29th and September 25th, members of BTU management, Amtech management, and representatives of Needham & Company and Stifel held discussions regarding alternative cost efficiencies plans and operating scenarios for BTU's Billerica operation as part of a combined company.

Throughout September and the first two weeks of October, the parties continued discussions and meetings, both in-person in Billerica, Massachusetts, Shanghai, and Tempe, Arizona, and telephonically, regarding the due diligence reviews conducted by each party, post-transaction integration and personnel matters and status updates. BTU management, its Transaction Committee, representatives of Needham & Company and Pierce Atwood LLP met regularly by telephone to monitor the status, timing and outlook for the negotiations during this time.

On September 4, September 24 and October 15, 2014, BTU's board of directors met and considered the status of transaction negotiations and due diligence reviews of Amtech and by Amtech of BTU. During these meetings, BTU's board of directors authorized Needham & Company to seek to modify the July 8th fixed price collar mechanism to a fixed exchange ratio transaction.

On September 16, 2014, key executives at Amtech and BTU orally agreed to extend exclusivity through October 8, 2014, and on October 4, 2014, key executives at Amtech and BTU again orally agreed to extend exclusivity through October 17, 2014.

On October 9, Mr. Anderson from Amtech and certain members of Amtech's senior management presented a transaction summary to a subset of Amtech's board of directors. In addition, Amtech's legal advisors, Squire Patton Boggs (US) LLP, reviewed the most recent draft of the proposed merger agreement as well as the most recent results of their legal due diligence investigations.

As a result of continuing discussions, the parties agreed to recommend to their respective boards of directors a transaction in which BTU would merge with and into a merger subsidiary wholly owned by Amtech in an all-stock transaction, with BTU stockholders to receive 0.3291 shares of Amtech common stock in exchange for each share of BTU common stock, which as of the 30-day volume-weighted average price of Amtech's common stock through Friday, October 17th, valued BTU at \$3.38 per share, or \$33 million in total equity purchase price. The fixed exchange ratio was determined through negotiation of the parties based on the relative values of the respective companies, including then-current and historical market values and the expected contribution of each company to the value of the combined organization. The transaction would also provide that Mr. van der Wanssem would receive a seat on the board of directors of Amtech.

On October 19, 2014, Amtech's legal advisors, Squire Patton Boggs (US) LLP, telephonically reviewed the most recent draft of the proposed merger agreement (which was substantially similar in all material respects to the most recent draft it prepared and delivered to BTU and its counsel), as well as a review of the results of its U.S. and China legal due diligence investigations, with Messrs. Whang, Pentinga, and Anderson, as well as key executives from Amtech's management team.

On October 20, 2014, the Amtech board of directors held a special meeting during which the board received an update from Amtech's management on the status of negotiations with BTU. Also at this meeting, Stifel reviewed with Amtech's board of directors its financial analysis of the exchange ratio and delivered to Amtech's board of directors an oral opinion, which was confirmed by delivery of a written opinion dated October 20, 2014, to the effect that, as of that date and based on and subject to

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various assumptions and limitations described in its opinion, the exchange ratio provided for in the merger was fair, from a financial point of view, to Amtech.

Representatives of Squire Patton Boggs (US) LLP, legal advisors to Amtech, again discussed with the Amtech board of directors the legal standards applicable to its decisions and actions with respect to the proposed transaction, and reviewed the proposed merger agreement and related agreements, including the employment and consulting agreements to be entered into with Mr. van der Wanssem and Mr. Tallian, as described elsewhere in this joint proxy statement/prospectus.

Following these discussions, and review and discussion among the members of the Amtech board of directors, including consideration of the factors described under “— Amtech’s Reasons for the Merger; Recommendation of Amtech’s Board of Directors”, the Amtech board determined that a strategic transaction with BTU would create the opportunity for a combined company with superior future earnings prospects, a more diversified balance sheet and expanded opportunities, including organic growth and future acquisitions. The Amtech board further believed that the complementary nature of the product mix of the two companies, including with respect to strategic focus, target markets and client service, would facilitate integration and implementation of the transaction.

As a result of these discussions, the Amtech board of directors determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable and in the best interests of Amtech and its stockholders, and the directors voted unanimously to approve the merger agreement and the transactions contemplated thereby and recommended that Amtech’s stockholders adopt the merger agreement and the issuance of the Amtech shares as merger consideration as described more fully under “The Merger Agreement”.

On October 21, 2014, the BTU board of directors held a special meeting during which the board received an update from BTU’s management on the status of negotiations with Amtech. Also at this meeting, representatives of Needham & Company reviewed with BTU’s board of directors its financial analysis of the exchange ratio and delivered to BTU’s board of directors an oral opinion, which was confirmed by delivery of a written opinion dated as of the same date, to the effect that, as of that date and based on and subject to assumptions and other matters described in its written opinion, the exchange ratio of 0.3291 pursuant to the merger agreement was fair, from a financial point of view, to the holders of BTU common stock (other than Amtech or BTU or any of their respective subsidiaries).

Representatives of Pierce Atwood LLP, legal advisors to BTU, again discussed with the BTU board of directors the legal standards applicable to its decisions and actions with respect to the proposed transaction, and reviewed the proposed merger agreement and related agreements, including the employment and consulting agreements to be entered into with Mr. van der Wanssem and Mr. Tallian, as described elsewhere in this joint proxy statement/prospectus. The BTU board of directors considered the compensation arrangements between Amtech and Messrs. Van der Wanssem and Tallian, including Mr. van der Wanssem’s termination as an employee of BTU and engagement as an employee of Amtech for one year and two year consultancy with Amtech thereafter, and determined that such arrangements were fair and reasonable and in the best interests of BTU’s stockholders.

Following these discussions, and review and discussion among the members of the BTU board of directors, including consideration of the factors described under “— BTU’s Reasons for the Merger; Recommendation of BTU’s Board of Directors”, the BTU board determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable and in the best interests of BTU and its stockholders, and the directors voted unanimously to approve the merger agreement and the transactions contemplated thereby and recommended that BTU’s stockholders adopt the merger agreement and the transactions contemplated thereby as described more fully under “The Merger Agreement”.

On October 21, 2014, Amtech and BTU executed the merger agreement, which was publicly announced on October 22, 2014.

BTU’s Reasons for the Merger; Recommendation of the BTU Board of Directors

In approving the merger and merger agreement and recommending their approval by BTU stockholders, BTU’s board of directors considered a number of factors and a substantial amount of information reviewed and discussed with BTU’s

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management and legal and financial advisors. The following discussion of the information and factors considered by BTU's board of directors in reaching its conclusions and recommendation includes all of the material factors considered by BTU's board of directors, but is not intended to be exhaustive. In view of the wide variety of factors considered in connection with its evaluation of the merger and the complexity of these matters, BTU's board of directors did not find it practicable, and did not attempt, to quantify, rank or assign any relative or specific weights to the various factors that it considered in reaching its determination to approve the merger agreement and to recommend that BTU stockholders vote in favor of the proposal to approve the merger, the merger agreement and the principal terms thereof. The BTU board of directors conducted an overall analysis that included consideration of the factors described below, including through discussions with, and questioning of, BTU's management and outside legal and financial advisors, as well as meetings with Amtech management, regarding certain of the matters described below. In considering the factors described below, individual members of the BTU board of directors may have given differing weights to different factors.

The principal factors that the BTU board believes support its approval and recommendation of the merger with Amtech are:

BTU as a Stand-Alone Company. The BTU board of directors considered the current and historical financial condition and results of operations and anticipated future performance of BTU, as well as the risks and uncertainties associated with continuing to operate BTU as a stand-alone company, including the following:

- BTU's recent histories of losses and diminished prospects for revenue growth in the near term, resulting in large part from slower than anticipated recovery of the solar market;
- The risks involved in connection with BTU's need to reduce costs and expenditures to preserve available cash while simultaneously seeking to increase BTU's business and penetration in the semiconductor and solar markets;
- The risks involved with slower than anticipated acceptance of product offerings in the solar and electronics markets;
- BTU's dependence on key management, and the risks involved of losing critical personnel as a consequence of a prolonged deterioration in BTU's business;
- The risks involved in maintaining and upgrading BTU's current suite of product offerings in light of the magnitude of the development efforts, uncertain growth prospects and limited and declining cash reserves; and
- The potential diminution of growth prospects for BTU should it opt to pursue a significant restructuring and product line realignment designed to provide near-term positive cash flows.

Revenue growth synergies. The BTU board of directors believes that the combination with Amtech creates the opportunity to grow revenues at a faster rate due to:

- Cost benefits from manufacturing and procurement efficiencies;
- Leveraging complementary customer relationships to expand sales;
- Technical benefits from adjacent technologies; and
- Leveraging a broader and more comprehensive product portfolio.

Cost-reduction synergies. The board of directors expects the companies to realize cost synergies through this transaction of approximately \$4,000,000 to \$5,000,000 on an annualized basis within six to twelve months following consummation of the merger. It is expected that these synergies will be achieved by:

- Reducing costs of compliance for one, rather than two, publicly traded companies, including legal, auditing and SEC reporting costs;
- realigning selling, general and administrative expenses and combined research and development to improve operational efficiency;
- Streamlining supply chains, costs of goods sold and manufacturing costs to achieve synergies;

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- Achieving combined supply chain and production cost savings utilizing the BTU-China infrastructure; and
- Realizing benefits from the complementary business model strengths of BTU and Amtech.

Strategic Considerations. The BTU board of directors believes that the merger will provide a number of strategic opportunities for the combined company, including the combined company's:

- Ability to deliver solutions neither could offer independently;
- Increased scale enabling even more comprehensive support capabilities tailored to customers' needs;
- Increased ability to withstand cyclical downturns in the markets the combined companies serve due to the increased stability resulting from greater scale and a stronger balance sheet;
- Technical and engineering abilities to support rapid development of leading-edge solutions; and
- Management depth and breadth.

Participation in Future Appreciation. The merger consideration will be paid in shares of Amtech common stock, which will provide BTU stockholders with ownership of approximately 24.5% of the combined company after the closing of the merger (assuming approximately 3,200,000 shares of Amtech common stock are issued in the merger and based upon 9,852,793 shares of Amtech common stock outstanding as of November 19, 2014). This will enable BTU stockholders to share in any synergies and participate in any future appreciation of Amtech common stock following the consummation of the merger, whether from future growth in earnings or as a result of any premium paid to Amtech stockholders in connection with a future sale of Amtech.

Fixed Exchange Ratio. The merger consideration is a fixed exchange ratio which will not fluctuate as a result of changes in the price of BTU common stock or Amtech common stock prior to the merger.

Accretive to EPS. The transaction is expected to be accretive to combined company EPS on a non-GAAP basis within 12 months of closing.

Strong Balance Sheet. The combined company will have a strong balance sheet to pursue strategic plans. As of September 30, 2014, the companies had approximately \$37,800,000 gross cash and investments and approximately \$7,300,000 debt on a combined basis.

Improved Liquidity. The merger is expected to result in improved liquidity for BTU stockholders as a result of the increased equity capitalization and the increased stockholder base of the combined company.

Tax-Free Transaction. The merger is expected to qualify as a tax-free transaction to BTU stockholders for U.S. federal income tax purposes.

Strategic Alternatives. After reviewing possible alternatives to the proposed merger with Amtech, including continuing to operate BTU as an independent company or seeking a business combination with another company, the BTU board of directors believe that based on the process of identifying alternative transactions, another party would be unlikely to have the motivation or ability to offer a superior transaction. The fact that after a comprehensive search led by BTU's financial advisor involving more than 30 potential merger partners or acquirers, only Amtech had indicated a strong level of interest in combining with BTU, and as a result of the comprehensive nature of the search, the BTU board of directors has determined that it was unlikely that any additional strong partners would be identified.

Superior Proposals. The BTU board of directors has the ability to change its recommendation in favor of the merger upon receipt of a superior proposal, if failure to take such action would be reasonably likely to constitute a breach of the directors' fiduciary duties under applicable law and after compliance with the requirements set forth in the merger agreement. The BTU board of directors believes that the termination fee, equal to approximately 4% of the equity value of the transaction, is reasonable and will not unduly impede the ability of a third party to make a superior proposal.

Opinion of Financial Advisor. The BTU board of directors also considered the opinion of Needham & Company, dated October 21, 2014, to BTU's board of directors as to the fairness, from a financial point of view and as of the date of the opinion,

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of the exchange ratio to the holders of BTU common stock, as more fully described below in the section entitled “—Opinion of Needham & Company.”

Familiarity with Businesses. In the course of its review and evaluations of BTU’s options and of the merger proposal from Amtech, the BTU board of directors considered its knowledge of the business, operations, financial condition, earnings and prospects of both BTU and Amtech, taking into account the results of BTU’s due diligence review of Amtech, as well as its knowledge of the current and prospective environment in which BTU and Amtech operate, including general economic and market conditions and the more specific conditions of the solar cell manufacturing, electronic assembly and semiconductor businesses.

High Likelihood of Consummation. The BTU board of directors deems it highly likely that the merger will be completed in a timely manner given the commitment of both parties to complete the business combination pursuant to their respective obligations under the merger agreement, and the absence of any significant closing conditions under the merger agreement, other than the approvals by the holders of BTU’s and Amtech’s common stock.

The BTU board of directors also considered a variety of risks and other potentially negative factors concerning the merger agreement and the merger, including the following:

- the fact that the merger consideration is a fixed exchange ratio which will not fluctuate as a result of changes in the price of BTU common stock or Amtech common stock prior to the merger, which means that the value of the merger consideration to BTU stockholders could decrease prior to the closing of the merger if the trading price of Amtech common stock decreases;
- the obligation to pay to Amtech (i) a termination fee of \$1.32 million if the merger agreement is terminated under certain circumstances as provided in the merger agreement or (ii) an expense reimbursement amount of up to \$1 million if the BTU stockholders fail to approve the merger agreement under certain circumstances as provided in the merger agreement;
- the possibility that the merger may not be completed, or that completion may be unduly delayed, for reasons including the failure of BTU stockholders to approve the merger or the merger agreement or the failure of Amtech stockholders to approve the issuance of shares of Amtech common stock in connection with the merger, or for other reasons beyond the control of BTU or Amtech;
- the risk that failure to complete the merger could negatively affect the price of BTU common stock and future business and financial results of BTU;
- the potential risk of diverting management focus and resources from operational matters and other strategic opportunities while working to implement the merger;
- the risk of not capturing all of the anticipated operational synergies and cost savings between BTU and Amtech and the risk that other anticipated benefits might not be realized within expected timeframes or at all;
- the substantial costs to be incurred in connection with the transaction, including the costs of integrating the businesses of BTU and Amtech and the transaction expenses arising from the merger;
- the potential effect of the merger on BTU’s business and relationships with employees, customers, suppliers, distributors, regulators and the communities in which it operates;
- the risk that certain key members of senior management might choose not to remain employed with BTU prior to the completion of the merger or with the combined company after the merger;
- the terms of the merger agreement, including covenants relating to restrictions on BTU’s conduct of its business during the period between the signing of the merger agreement and the completion of the merger;
- the possibility that the merger might not be completed, or that completion might be unduly delayed, for reasons beyond BTU’s and/or Amtech’s control and the potential negative impact that may have on BTU’s business and relationships with employees, customers, suppliers, regulators and the communities in which it operates; and
- the risks of the type and nature described under “Risk Factors,” and the matters described under “Special Note Regarding Forward-Looking Statements.”

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The BTU board of directors also was apprised of certain interests in the merger of executive officers and the directors that may be different from, or in addition to, the interests of BTU stockholders generally as discussed in “The Merger—Interests of BTU Directors and Executive Officers in the Merger.”

The BTU board of directors unanimously approved the merger agreement and determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable and fair to, and in the best interests of BTU and its shareholders. The BTU board of directors unanimously recommends that BTU stockholders vote “FOR” the BTU merger proposal.

Opinion of Needham & Company

BTU retained Needham & Company to act as financial advisor in connection with the merger and to render an opinion as to the fairness, from a financial point of view, to the holders of BTU common stock (other than Amtech or BTU or any of their respective subsidiaries) of the exchange ratio pursuant to the merger agreement.

On October 21, 2014, Needham & Company delivered its oral opinion, which it subsequently confirmed in writing, to the BTU board of directors that, as of that date and based upon and subject to the assumptions and other matters described in the written opinion, the exchange ratio of 0.3291 pursuant to the merger agreement was fair, from a financial point of view, to the holders of BTU common stock (other than Amtech or BTU or any of their respective subsidiaries). Needham & Company provided its opinion for the information and assistance of the BTU board of directors in connection with and for the purpose of the BTU board of directors’ evaluation of the transactions contemplated by the merger agreement. Needham & Company’s opinion relates only to the fairness, from a financial point of view, to the holders of BTU common stock (other than Amtech or BTU or any of their respective subsidiaries) of the exchange ratio, which was determined through arm’s length negotiations between BTU and Amtech and not by Needham & Company. While Needham & Company provided independent financial advice to the BTU board of directors during the course of negotiations between BTU and Amtech, the decision to approve and recommend the merger was made independently by the BTU board. Needham & Company’s opinion does not address any other aspect of the merger, or any related transaction, and does not constitute a recommendation to any stockholder of BTU as to how that stockholder should vote or act on any matter relating to the merger.

The complete text of Needham & Company’s opinion, which sets forth the assumptions made, procedures followed, matters considered, and qualifications and limitations on and scope of the review undertaken by Needham & Company, is attached to this joint proxy statement/prospectus as Annex C and is incorporated by reference in this joint proxy statement/prospectus. The summary of Needham & Company’s opinion set forth below is qualified in its entirety by reference to the full text of the opinion. **BTU stockholders should read this opinion carefully and in its entirety.**

In arriving at its opinion, Needham & Company, among other things:

- reviewed a draft of the merger agreement dated October 20, 2014;
- reviewed certain publicly available information concerning Amtech and BTU and certain other relevant financial and operating data of Amtech and BTU furnished to Needham & Company by Amtech and BTU;
- reviewed the historical stock prices and trading volumes of Amtech common stock and BTU common stock;
- held discussions with members of management of Amtech and BTU concerning the current operations of and future business prospects for Amtech and BTU and joint prospects for the combined companies, including the potential cost savings and other synergies that may be achieved by the combined companies;
- reviewed certain financial forecasts with respect to Amtech and BTU prepared by the respective managements of those companies and held discussions with members of management concerning those forecasts;
- compared certain publicly available financial data of companies whose securities are traded in the public markets and that Needham & Company deemed generally relevant to similar data for BTU;
- reviewed the financial terms of certain business combinations that Needham & Company deemed generally relevant; and
- reviewed such other financial studies and analyses and considered such other matters as Needham & Company deemed appropriate.

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In connection with its review and in arriving at its opinion, Needham & Company assumed and relied on the accuracy and completeness of all of the financial, accounting, legal, tax and other information discussed with or reviewed by it for purposes of its opinion and did not independently verify, nor did Needham & Company assume responsibility for independent verification of, any of that information. Needham & Company assumed the accuracy of the representations and warranties contained in the merger agreement and all agreements related thereto. In addition, Needham & Company assumed that the merger will qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986 and will be consummated on the terms and subject to the conditions set forth in the draft merger agreement furnished to Needham & Company without waiver, modification or amendment of any material term, condition or agreement thereof and that, in the course of obtaining the necessary regulatory or third party approvals, consents and releases for the merger, no delay, limitation, restriction or condition will be imposed that would have an adverse effect on Amtech, BTU or the contemplated benefits of the merger. In addition, Needham & Company assumed that the financial forecasts for Amtech and BTU provided to Needham & Company by Amtech and BTU management were reasonably prepared on bases reflecting the best currently available estimates and judgments of management, at the time of preparation, of the future operating and financial performance of Amtech and BTU and the combined companies, and Needham & Company relied, without independent verification, upon the estimates of Amtech and BTU management of the potential cost savings and other synergies, including the amount and timing thereof, that may be achieved as a result of the merger. Needham & Company expressed no opinion with respect to any of those forecasts, including those costs savings and other synergies, or the assumptions on which they were based.

Needham & Company did not assume any responsibility for or make or obtain any independent evaluation, appraisal or physical inspection of the assets or liabilities of Amtech, BTU or any of their respective subsidiaries nor did Needham & Company evaluate the solvency or fair value of Amtech, BTU or any of their respective subsidiaries under any state or federal laws relating to bankruptcy, insolvency or similar matters. Needham & Company's opinion states that it was based on economic, monetary and market conditions as they existed and could be evaluated as of its date, and Needham & Company assumed no responsibility to update or revise its opinion based upon circumstances and events occurring after its date. Needham & Company's opinion is limited to the fairness, from a financial point of view, to the holders of BTU common stock (other than Amtech, BTU or any of their respective subsidiaries) of the exchange ratio pursuant to the merger agreement and Needham & Company expressed no opinion as to the fairness of the merger to, or any consideration received in connection therewith by, the holders of any other class of securities, creditors or other constituencies of BTU, or as to BTU's underlying business decision to engage in the merger or the relative merits of the merger as compared to other business strategies that might be available to BTU. In addition, Needham & Company expressed no opinion with respect to the amount or nature or any other aspect of any compensation payable to or to be received by any officers, directors or employees of any party to the merger, or any class of those persons, relative to the exchange ratio pursuant to the merger agreement or with respect to the fairness of any such compensation. Needham & Company did not express any opinion as to what the value of Amtech common stock will be when issued pursuant to the merger or the prices at which Amtech common stock or BTU common stock will actually trade at any time.

BTU imposed no limitations on Needham & Company with respect to the investigations made or procedures followed by Needham & Company in rendering its opinion.

In preparing its opinion, Needham & Company performed a variety of financial and comparative analyses. The following paragraphs summarize the material financial analyses performed by Needham & Company in arriving at its opinion. The order of analyses described does not represent relative importance or weight given to those analyses by Needham & Company. Some of the summaries of the financial analyses include information presented in tabular format. The tables are not intended to stand alone, and in order to more fully understand the financial analyses used by Needham & Company, the tables must be read together with the full text of each summary. The following quantitative information, to the extent it is based on market data, is, except as otherwise indicated, based on market data as it existed on or prior to October 20, 2014, and is not necessarily indicative of current or future market conditions.

Historical Stock Trading Ratio Analysis. Needham & Company reviewed the historical trading prices of Amtech common stock and BTU common stock as of and for various periods ending on October 20, 2014, the last full trading day prior to the date of Needham & Company's opinion, in order to determine the various stock price ratios that existed for those periods and to compare those average stock price ratios to the exchange ratio in the merger of 0.3291. The following table presents the average stock price ratios for October 20, 2014, and the three month, six month, one year, two year and five year periods ending on

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October 20, 2014. “Average stock price ratio” data represent the daily closing price of BTU common stock divided by the daily closing price of Amtech common stock averaged over the respective periods.

<u>Date or Period</u>	<u>Average Stock Price Ratio</u>
October 20, 2014	0.2776
Three month	0.3211
Six month	0.3092
One year	0.3228
Two year	0.4406
Five year	0.4734

Contribution Analysis. Needham & Company reviewed and analyzed the implied percentage contribution of each of Amtech and BTU to pro forma projected combined operating results. In calculating the pro forma projected combined operating results, Needham & Company used Amtech management’s financial forecasts of Amtech’s projected fiscal years 2014 through 2018 operating results and BTU management’s standalone company financial forecasts of projected calendar years 2014 through 2018 operating results assuming restructuring of BTU. Needham & Company reviewed, among other things, the implied percentage contributions to pro forma combined revenues, gross profit, earnings before interest and taxes, or EBIT, and earnings before interest, taxes, depreciation, amortization, and stock compensation expense, or adjusted EBITDA. Needham & Company also reviewed the implied percentage contributions to pro forma combined net cash and total assets as of September 30, 2014. The following tables present the results of this analysis and the estimated percentage ownership of the combined company on a pro forma basis by the Amtech shareholders and the BTU stockholders and estimated pro forma enterprise value contributions of Amtech and BTU, based on the exchange ratio of 0.3291 and the September 30, 2014 and September 28, 2014 balance sheet amounts. In calculating pro forma equity ownership and enterprise value contributions, Needham & Company used the treasury stock method to calculate the number of pro forma fully diluted shares of Amtech common stock outstanding after the merger.

	<u>Implied Actual/Estimated Percentage Contribution</u>	
	<u>Amtech</u>	<u>BTU</u>
Pro forma combined revenues		
2014E	56.9%	43.1%
2015E	71.6%	28.4%
2016E	74.9%	25.1%
2017E	77.2%	22.8%
2018E	78.4%	21.6%
Pro forma combined gross profit		
2014E	42.5%	57.5%
2015E	65.1%	34.9%
2016E	69.4%	30.6%
2017E	73.1%	26.9%
2018E	74.9%	25.1%
Pro forma combined EBIT		
2015E	62.2%	37.8%
2016E	59.9%	40.1%
2017E	71.0%	29.0%
2018E	75.2%	24.8%
Pro forma combined adjusted EBITDA		
2015E	67.6%	32.4%
2016E	65.4%	34.6%
2017E	72.2%	27.8%
2018E	74.9%	25.1%
Pro forma combined net cash at September 30, 2014	89.7%	10.3%
Pro forma combined total assets at September 30, 2014	70.2%	29.8%

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	Estimated Pro Forma Percentage Contribution	
	Amtech	BTU
Pro forma equity ownership contribution	75.8%	24.2%
Pro forma enterprise value contribution	70.7%	29.3%

The results of the contribution analysis are not necessarily indicative of the contributions that the respective businesses may have in the future, and may not rely on the exact same approximations as other places in this registration and joint proxy statement/prospectus.

Selected Companies Analysis. Using publicly available information, Needham & Company compared selected historical and projected financial and market data ratios for BTU to the corresponding data and ratios of publicly traded companies that Needham & Company deemed relevant because they have lines of businesses that may be considered similar to or have similar characteristics with BTU's lines of business. These companies, referred to as the selected companies, consisted of the following:

Amtech
Advantest Corporation
BE Semiconductor Industries N.V.
Cascade Microtech, Inc.
Cohu, Inc.
FormFactor, Inc.
inTEST Corporation
Kulicke and Soffa Industries, Inc.
Meyer Burger Technology AG
Teradyne, Inc.
Xcerra Corporation

The following table sets forth information concerning the following multiples for the selected companies and for BTU:

- enterprise value as a multiple of last 12 months, or LTM, revenues;
- enterprise value as a multiple of projected calendar year 2014 revenues;
- enterprise value as a multiple of projected calendar year 2015 revenues;
- enterprise value as a multiple of projected calendar year 2014 adjusted EBITDA;
- enterprise value as a multiple of projected calendar year 2015 adjusted EBITDA; and
- price as a multiple of book value.

Needham & Company also reviewed, for the selected companies, enterprise value as a multiple of LTM adjusted EBITDA, but determined that the results were not meaningful because of BTU's negative LTM adjusted EBITDA.

Needham & Company calculated multiples for the selected companies based on the closing stock prices of those companies on October 20, 2014 and for BTU based on the Amtech closing stock price of \$10.05 on October 20, 2014 and the exchange ratio of 0.3291. All financial information excludes the impact of non-recurring items. Adjusted EBITDA amounts excluded the impact of stock-based compensation expense. Projected calendar year 2014 results for BTU were based on management's stand-alone company financial forecasts assuming no restructuring, and projected calendar 2015 results for BTU were based on

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management's stand-alone company financial forecasts assuming restructuring of the company, which the BTU board had determined would likely be implemented should the merger not be completed.

	Selected Companies				BTU Implied by Merger
	High	Low	Mean	Median	
Enterprise value to LTM revenues	2.9x	0.7x	1.3x	1.1x	0.5x
Enterprise value to projected calendar year 2014 revenues	2.2x	0.7x	1.1x	1.0x	0.5x
Enterprise value to projected calendar year 2015 revenues	1.5x	0.6x	0.9x	0.8x	0.7x
Enterprise value to projected calendar year 2014 adjusted EBITDA	20.8x	3.9x	8.2x	6.8x	30.9x
Enterprise value to projected calendar year 2015 adjusted EBITDA	42.3x	3.3x	9.6x	4.9x	5.2x
Price to book value	2.1x	1.1x	1.6x	1.7x	1.8x

Needham & Company also reviewed, for the selected companies and for BTU, LTM gross margins and projected calendar year 2014 to calendar year 2015 revenue growth percentages, and noted that BTU's LTM gross margin of 36.5% fell below mean and median LTM gross margin of the selected companies of 40.8% and 45.7% and that BTU projected a decrease in calendar year 2014 to calendar year 2015 revenue of 27.7%, while the mean and median projected calendar year 2014 to calendar year 2015 revenue growth percentages for the selected companies were 18.7% and 10.0%. In calculating BTU's projected decrease in calendar year 2014 to calendar year 2015 revenue, Needham & Company used BTU management's calendar year 2014 standalone company financial forecasts assuming no restructuring and BTU management's calendar year 2015 standalone company financial forecasts assuming restructuring of BTU.

Selected Transactions Analysis. Needham & Company analyzed publicly available financial information for the following selected merger and acquisition transactions, which represent transactions completed since January 1, 2010 that involved target companies that were involved in lines of business that may be considered similar to or have similar characteristics with BTU's lines of business and with enterprise values of less than \$500 million:

Acquirer	Target
Orbotech Ltd.	SPTS Technologies Group Limited
ASM Pacific Technology Ltd.	Dover Corporation (DEK printing machines unit)
MKS Instruments, Inc.	Brooks Automation, Inc. (Granville-Phillips)
LTX-Credence Corporation	Dover Corporation (ECT and Multitest businesses)
Cohu, Inc.	Ismecca Semiconductor Holding SA
Tokyo Electron Limited	OC Oerlikon AG (Oerlikon Solar)
Brooks Automation, Inc.	Crossing Automation, Inc.
FormFactor, Inc.	Astria Semiconductor Holdings, Inc. (Micro-Probe)
Tokyo Electron Limited	FSI International, Inc.
Ultra Clean Holdings, Inc.	American Integration Technologies, LLC
Tokyo Electron Limited	NEXX Systems, Inc.
Cascade Microtech, Inc.	SUSS MicroTec AG (test systems business)

In reviewing the selected transactions, Needham & Company calculated, for the selected transactions and for BTU implied by the merger, enterprise value as a multiple of LTM revenues.

Needham & Company also reviewed, for the selected transactions, enterprise value as a multiple of LTM adjusted EBITDA, but determined that the results were not meaningful because of BTU's negative LTM adjusted EBITDA.

Needham & Company calculated multiples for BTU based on the Amtech closing stock price of \$10.05 on October 20, 2014 and the exchange ratio of 0.3291.

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The following table sets forth information concerning the multiples described above for the selected transactions and the same multiples implied by the merger.

	Selected Transactions				BTU Implied by Merger
	High	Low	Mean	Median	
Enterprise value to LTM revenues	3.1x	0.4x	1.4x	1.1x	0.5x

Premiums Paid Analysis. Needham & Company analyzed publicly available financial information for 14 merger and acquisition transactions, which represent transactions announced and closed between January 1, 2010 and October 20, 2014 that involved all stock consideration and acquired companies that were publicly-traded technology and technology-enabled service companies. In reviewing these transactions, Needham & Company analyzed the premium of consideration offered to the acquired company's stock price one trading day, five trading days and 20 trading days prior to the announcement of the transaction.

Needham & Company calculated premiums for BTU based on the Amtech closing stock price of \$10.05 on October 20, 2014 and the exchange ratio of 0.3291. The following table sets forth information concerning the stock price premiums in the selected transactions and the stock price premiums implied by the merger.

	Selected Transactions				Amtech / BTU Merger
	High	Low	Mean	Median	
One trading day stock price premium	-	-	-	-	-
Five trading day stock price premium	159.1%	19.3%	43.2%	27.5%	18.5%
20 trading day stock price premium	227.0%	13.8%	49.1%	21.0%	15.6%
	185.1%	24.3%	47.4%	25.6%	-3.6%

Discounted Cash Flow Analysis. Needham & Company performed illustrative discounted cash flow analyses to determine indicators of illustrative implied equity values for BTU and illustrative implied equity values per share of BTU common stock based on BTU and Amtech managements' financial forecasts. Needham & Company made calculations using two sets of forecasts: BTU management's standalone company forecasts assuming restructuring of BTU and Amtech and BTU managements' forecasts for the combined companies and BTU's proportion of the combined companies, based on the exchange ratio of 0.3291.

For the analysis using BTU management's standalone company forecasts assuming restructuring of BTU, Needham & Company calculated a range of indications of the present value of unlevered free cash flows for BTU for projected calendar years 2015 through 2018 using discount rates ranging from 19.0% to 23.0%. Needham & Company then calculated a range of illustrative terminal values at the end of 2018 by applying multiples ranging from 4.0x to 6.0x to BTU management's estimate of its 2018 adjusted EBITDA. These illustrative terminal values were then discounted to calculate ranges of implied indications of present values using discount rates ranging from 19.0% to 23.0%. Needham & Company then added the ranges of the implied present values of BTU's unlevered free cash flows for the projected years to the ranges of implied present values of BTU's terminal values to derive ranges of implied present enterprise values of BTU. Needham & Company then added net cash as projected by BTU management as of December 31, 2014, less assumed restructuring expenses, and assumed repayment of debt in the restructuring, to derive ranges of implied present equity values, and then calculated the per share amounts by dividing these amounts by the number of fully diluted shares outstanding to derive a range of illustrative implied equity values per share of \$2.66 to \$3.68. Needham & Company noted that the per share value implied by the assumed exchange ratio of 0.3291 and the Amtech closing stock price on October 20, 2014 of \$10.05 was \$3.31.

For the analysis using Amtech and BTU managements' forecasts for the combined companies and BTU's proportion of the combined companies, based on the exchange ratio of 0.3291, Needham & Company calculated a range of indications of the present value of unlevered free cash flows for the combined companies for projected fiscal years 2015 through 2019 using discount rates ranging from 23.0% to 27.0%. Needham & Company then calculated a range of illustrative terminal values at the end of 2019 by applying multiples ranging from 0.8x to 1.6x to Amtech and BTU managements' estimate of the combined companies' 2019 revenue. These illustrative terminal values were then discounted to calculate ranges of implied indications of present values using discount rates ranging from 23.0% to 27.0%. Needham & Company then added the ranges of the implied

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present values of the combined companies' unlevered free cash flows for the projected years to the ranges of implied present values of the combined companies' terminal values to derive ranges of implied present enterprise values of the combined companies. Needham & Company then added total cash as of September 30, 2014 and subtracted total debt as of September 30, 2014 to derive ranges of implied present equity values, and then calculated the per share amounts attributable to BTU stockholders based on BTU stockholders' proportionate ownership implied by the exchange ratio of 0.3291 to derive a range of illustrative implied equity values per share of \$3.77 to \$6.44. Needham & Company noted that the per share value implied by the assumed exchange ratio of 0.3291 and the Amtech closing stock price on October 20, 2014 of \$10.05 was \$3.31.

No company, transaction or business used in the "Selected Companies Analysis," "Selected Transactions Analysis" or "Premiums Paid Analysis" as a comparison is identical to Amtech, BTU or the merger. Accordingly, an evaluation of the results of these analyses is not entirely mathematical; rather, it involves complex considerations and judgments concerning differences in the financial and operating characteristics and other factors that could affect the acquisition, public trading or other values of the selected companies or selected transactions or the business segment, company or transaction to which they are being compared.

The summary set forth above does not purport to be a complete description of the analyses performed by Needham & Company in connection with the rendering of its opinion. The preparation of a fairness opinion is a complex analytical process involving various determinations as to the most appropriate and relevant quantitative and qualitative methods of financial analyses and the application of those methods to the particular circumstances and, therefore, such an opinion is not readily susceptible to summary description. Accordingly, Needham & Company believes that its analyses must be considered as a whole and that selecting portions of its analyses or the factors it considered, without considering all analyses and factors, could create a misleading or incomplete view of the process underlying its analyses and opinion. Needham & Company did not attribute any specific weight to any factor or analysis considered by it. The fact that any specific analysis has been referred to in the summary above is not meant to indicate that such analysis was given greater weight than any other analysis.

In performing its analyses, Needham & Company made numerous assumptions with respect to industry performance, general business and economic conditions and other matters, many of which are beyond Amtech's or BTU's control. Any estimates contained in or underlying these analyses, including estimates of our future performance, are not necessarily indicative of actual values or predictive of future results or values, which may be significantly more or less favorable than those estimates. Additionally, analyses relating to the values of businesses or assets do not purport to be appraisals or necessarily reflect the prices at which businesses or assets may actually be sold or the prices at which any securities have traded or may trade at any time in the future. Accordingly, these analyses and estimates are inherently subject to substantial uncertainty. Needham & Company's opinion and its related analyses were only one of many factors considered by BTU's board of directors in their evaluation of the merger and should not be viewed as determinative of the views of BTU's board of directors or management with respect to the exchange ratio or the merger.

Under the terms of its engagement letter with Needham & Company, BTU has paid or agreed to pay Needham & Company fees in amounts that BTU and Needham & Company believe are customary in transactions of this nature. These fees include a retainer fee and a nonrefundable fee for rendering the Needham & Company opinion aggregating \$300,000, and a transaction fee payable upon consummation of the merger of \$600,000, against which the retainer and opinion fees would be credited. A substantial portion of Needham & Company's fees are contingent on the consummation of the merger. In addition, BTU has agreed to reimburse Needham & Company for certain of its out-of-pocket expenses and to indemnify Needham & Company and related persons against various liabilities, including certain liabilities under the federal securities laws.

Needham & Company is a nationally recognized investment banking firm. As part of its investment banking services, Needham & Company is regularly engaged in the valuation of businesses and their securities in connection with mergers and acquisitions, negotiated underwritings, secondary distributions of securities, private placements and other purposes. Needham & Company was retained by the BTU board of directors to act as its financial advisor based on Needham & Company's experience as a financial advisor in mergers and acquisitions as well as Needham & Company's familiarity with BTU and its industry generally. Needham & Company has not in the past two years provided investment banking or financial advisory services to BTU unrelated to the merger for which Needham & Company has received compensation and has not in the past two years provided investment banking or financial advisory services to Amtech for which Needham & Company has received compensation. Needham & Company may in the future provide investment banking and financial advisory services to Amtech, BTU or their

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respective affiliates unrelated to the merger, for which services Needham & Company would expect to receive compensation. In the normal course of its business, Needham & Company may actively trade the equity securities of Amtech and BTU for its own account or for the account of its customers and, therefore, may at any time hold a long or short position in those securities.

Amtech's Reasons for the Merger; Recommendation of Amtech's Board of Directors

After careful consideration, Amtech's board of directors, at a meeting held on October 20, 2014, unanimously determined that the merger agreement and all related transactions is in the best interests of Amtech and its stockholders. Accordingly, Amtech's board of directors approved the merger agreement and unanimously recommended that Amtech stockholders vote "FOR" the adoption of the merger agreement.

In reaching its decision to approve and adopt the merger agreement, the Amtech board of directors consulted with Amtech's management, as well as its financial and legal advisors, and considered a number of factors in favor of the merger, including the following material factors, which are not presented in order of priority:

- its knowledge of Amtech's business, operations, financial condition, asset quality, earnings and prospects and of BTU's business, operations, financial condition, asset quality, earnings and prospects, taking into account the results of Amtech's due diligence review of BTU;
- its belief that BTU and Amtech share compatible business models with good market position, operating margins, and longevity;
- the fact that BTU would enable Amtech to expand its existing presence in the People's Republic of China;
- the anticipated ability to retain certain key management personnel of BTU;
- the fact that Amtech's and BTU's cash management and accounting system are already compliant with GAAP and SEC reporting requirements;
- the fact that BTU stockholders would own no more than approximately 24.5% of the outstanding shares of Amtech common stock immediately following the completion of the merger, assuming approximately 3,200,000 shares of Amtech common stock are issued in the merger and based upon 9,848,253 of Amtech common stock outstanding as of October 17, 2014); and
- the financial and other terms and conditions of the merger agreement, including the fact that the exchange ratio for the merger is fixed, and that the merger agreement contains provisions designed to limit the ability of the BTU board of directors to entertain third party proposals to acquire BTU and provisions providing for payment by BTU to Amtech of a termination fee if the merger agreement is terminated under certain circumstances.

The Amtech board of directors also considered a number of potentially negative factors in its deliberations concerning the merger agreement, including:

- the need to obtain both Amtech and BTU stockholder approval to complete the merger and the risk that those or other conditions would not be satisfied;
- the possibility that other merger and acquisition opportunities would be foregone while finalizing the merger with BTU;
- the potential risks associated with integrating BTU's business, operations and workforce with those of Amtech, including the implementation of desirable improvements to BTU's risk management and internal control programs;
- the potential of environmental exposures that may require remediation;
- the tax reporting positions of BTU, particularly related to its China subsidiaries;
- the potential risk of diverting management attention and resources from the operation of the business of Amtech and towards completion of the merger and integration of operations; and
- the expenses to be incurred in working towards completion of the merger.

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The foregoing discussion of the factors considered by the Amtech board of directors is not intended to be exhaustive, but rather includes the material factors considered by the Amtech board of directors. In reaching its decision to approve and adopt the merger agreement and the transactions contemplated thereby, the Amtech board of directors did not quantify or assign any relative weights to the factors considered, and individual directors may have given different weights to different factors. The Amtech board of directors considered all these factors as a whole, including discussions with, and questioning of, Amtech management and Amtech's financial and legal advisors, and overall considered the factors to be favorable to, and to support, its determination. The Amtech board of directors considered the foregoing factors as a whole and unanimously concluded that the positive factors outweighed the negative factors, and that the factors as a whole supported a determination to approve and adopt the merger agreement.

The Amtech board of directors unanimously approved the merger agreement and determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable and fair to, and in the best interests of Amtech and its shareholders. The Amtech board of directors unanimously recommends that Amtech stockholders vote "FOR" the Amtech merger proposal.

Opinion of Stifel

The Amtech board of directors requested from Stifel Nicolaus & Company (who we refer to as "Stifel"), an opinion, as investment bankers, as to the fairness, from a financial point of view, of the exchange ratio to the holders of shares of common stock, par value \$.01 per share, of Amtech. Based on the exchange ratio of 0.3291 and Amtech's closing stock price of \$10.04 per share on October 17, 2014, the implied stock price of BTU in the merger agreement as of October 17, 2014 was \$3.30 per share. On October 20, 2014, Stifel delivered to the Amtech board of directors its written opinion that, as of the date of the opinion and subject to and based on the assumptions made, procedures followed, matters considered, limitations of the review undertaken and qualifications contained in such opinion, the exchange ratio employed in the merger agreement was fair to the holders of Amtech common stock, from a financial point of view.

The Amtech board of directors did not impose any limitations on Stifel with respect to the investigations made or procedures followed in rendering its opinion. In selecting Stifel, the Amtech board of directors considered, among other things, the fact that Stifel is a reputable investment banking firm with substantial experience advising companies in the technology sector and in providing strategic advisory services in general, and Stifel's familiarity with Amtech and its business. Stifel, as part of its investment banking services, is regularly engaged in the independent valuation of businesses and securities in connection with mergers, acquisitions, underwritings, sales and distributions of listed and unlisted securities, private placements and valuations for estate, corporate and other purposes.

The full text of the opinion is attached to this proxy statement/prospectus as Annex B and is incorporated herein by reference. The summary of the opinion contained in this proxy statement/prospectus is qualified in its entirety by reference to the full text of the opinion. Amtech stockholders are encouraged to read the opinion carefully and in its entirety for a discussion of the procedures followed, assumptions made, other matters considered and limits of the review undertaken by Stifel in connection with the opinion.

In rendering its opinion, Stifel, among other things:

- discussed the merger and related matters with Amtech's counsel and reviewed a draft of the merger agreement, dated October 19, 2014;
- reviewed a draft of the form of voting agreement to be entered into between Paul J. van der Wansem in his capacity as a stockholder of BTU with Amtech;
- reviewed the audited consolidated financial statements of Amtech contained in its Annual Reports on Form 10-K for the three years ended September 30, 2013, 2012 and 2011, and the unaudited consolidated interim financial statements of Amtech contained in its Quarterly Reports on Form 10-Q for the quarters ended December 31, 2013, March 31, 2014 and June 30, 2014;

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- reviewed the audited consolidated financial statements of BTU contained in its Annual Reports on Form 10-K for the three years ended December 31, 2013, 2012 and 2011, and the unaudited consolidated interim financial statements of BTU contained in its Quarterly Reports on Form 10-Q for the quarters ended March 30, 2014, and June 29, 2014;
- reviewed and discussed with Amtech's management and BTU's management certain other publicly available information concerning Amtech and BTU;
- held discussions with the Amtech's senior management, including estimates of merger charges and the pro forma financial impact of the merger on the combined company;
- reviewed certain non-publicly available information concerning Amtech and BTU, including internal financial analyses and forecasts prepared by their respective managements for their respective companies, as well as certain internal financial analyses and forecasts of BTU prepared by Amtech's management, and held discussions with Amtech's senior management regarding recent developments;
- reviewed and analyzed certain publicly available information concerning the terms of selected merger and acquisition transactions that it considered relevant to its analysis;
- reviewed and analyzed certain publicly available financial and stock market data relating to selected comparable public companies that it deemed relevant to its analysis;
- participated in certain discussions and negotiations between representatives of Amtech and BTU;
- reviewed the reported prices and trading activity of the equity securities of Amtech and BTU;
- conducted such other financial studies, analyses and investigations and considered such other information as it deemed necessary or appropriate for purposes of its opinion; and
- took into account its assessment of general economic, market and financial conditions and its experience in other transactions, as well as its experience in securities valuations and its knowledge of Amtech's and BTU's industries generally.

In rendering its opinion, Stifel, with Amtech's consent, relied upon and assumed, without independent verification, the accuracy and completeness of all of the financial and other information that was made available, supplied or otherwise communicated to Stifel by or on behalf of Amtech or BTU, or that was otherwise reviewed by Stifel, including, without limitation, publicly available information, and did not assume any responsibility for independently verifying any of such information. Stifel relied on such information being complete and correct in all material respects and further relied upon the assurances of the management of Amtech or BTU, as applicable, that it was unaware of any facts that would make such information incomplete or misleading. With respect to the financial forecasts supplied to Stifel by Amtech and BTU (including, without limitation, the financial forecasts regarding BTU supplied to Stifel by Amtech and potential cost savings and operating synergies which may be realized by Amtech), Stifel assumed, at the direction of Amtech, that they were reasonably prepared on the basis reflecting the best currently available estimates and judgments of the management of Amtech or BTU, as applicable, as to the future operating and financial performance of Amtech or BTU, as applicable, and that they provided a reasonable basis upon which Stifel could form its opinion. Such forecasts and projections were not prepared with the expectation of public disclosure. At the direction of Amtech, in Stifel's analysis of the future performance of BTU, Stifel utilized and relied upon the financial forecasts for BTU prepared by Amtech's management. All such projected financial information is based on numerous variables and assumptions that are inherently uncertain, including, without limitation, factors related to general economic and competitive conditions. Accordingly, actual results could vary significantly from those set forth in such projected financial information. Stifel relied on this projected information without independent verification or analyses and does not in any respect assume any responsibility for the accuracy or completeness thereof.

Stifel also assumed that there were no material changes in the assets, liabilities, financial condition, results of operations, business or prospects of either Amtech or BTU since the date of the last financial statements of each company made available to Stifel. Stifel did not make or obtain any independent evaluation, appraisal or physical inspection of either Amtech's or BTU's assets or liabilities, nor had Stifel been furnished with any such evaluation or appraisal. Stifel's opinion states that estimates of values of companies and assets do not purport to be appraisals or necessarily reflect the prices at which companies or assets may actually be sold. Because such estimates are inherently subject to uncertainty, Stifel assumes no responsibility for their accuracy.

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Stifel assumed, with the Amtech board of directors' consent, that there are no factors that would delay or subject Amtech to any adverse conditions or any necessary regulatory or governmental approval, and that all conditions to the merger will be satisfied and not waived. In addition, Stifel assumed that the merger agreement will not differ materially from the draft Stifel reviewed. Stifel also assumed that the merger will be consummated substantially on the terms and conditions described in the merger agreement, without any waiver of material terms or conditions by any party thereto and without any adjustment to the exchange ratio (beyond the adjustment provisions set forth in the merger agreement), and that obtaining any necessary regulatory approvals or satisfying any other conditions for consummation of the merger will not have an adverse effect on Amtech, BTU or the merger. Stifel assumed that the merger will be consummated in a manner that complies with the applicable provisions of the Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, and all other applicable federal and state statutes, rules and regulations. Stifel further assumed that the Company has relied upon the advice of its counsel, independent accountants and other advisors (other than Stifel) as to all legal, financial reporting, tax, accounting and regulatory matters with respect to Amtech, the merger and the merger agreement.

Stifel's opinion is limited to whether the exchange ratio is fair to the holders of Amtech common stock, from a financial point of view, and does not address any other terms, aspects or implications of the merger, including, without limitation, the form or structure of the merger, any consequences of the merger on Amtech, its stockholders, creditors or otherwise, or any terms, aspects or implications of any voting, support, stockholder or other agreements, arrangements or understandings contemplated or entered into in connection with the merger or otherwise. Stifel's opinion also does not consider, address or include: (i) any other strategic alternatives currently (or which have been or may be) contemplated by Amtech or its board of directors; (ii) the legal, tax or accounting consequences of the merger on Amtech or the holders of Amtech common stock, including, without limitation, whether or not the merger will qualify as a tax-free reorganization pursuant to Section 368 of the Internal Revenue Code of 1986, as amended; (iii) the fairness of the amount or nature of any compensation to any of Amtech's or BTU's officers, directors or employees, or class of such persons, relative to the compensation to the holders of Amtech common stock or BTU common stock; (iv) the effect of the merger on, or the fairness of the consideration to be paid to, holders of any class of securities of Amtech or BTU other than the holders of Amtech common stock, or any class of securities of any other party to any transaction contemplated by the merger agreement; (v) any advice or opinions provided by any other advisor to Amtech or BTU; or (vi) the treatment of, or effect of the merger on, any securities of Amtech other than the Amtech common stock (or the holders of any such securities). Furthermore, Stifel's opinion does not express any opinion as to the prices, trading range or volume at which Amtech's securities (including Amtech common stock) will trade following public announcement or consummation of the merger (including, without limitation, the affect that any increase or decrease in the price of Amtech common stock may have or the conclusions reached in Stifel's opinion).

Stifel's opinion is necessarily based on economic, market, financial and other conditions as they exist on, and on the information made available to Stifel by or on behalf of Amtech and BTU or their respective advisors, or information otherwise reviewed by Stifel, as of, the date of its opinion. It is understood that subsequent developments may affect the conclusion reached in Stifel's opinion and that Stifel does not have any obligation to update, revise or reaffirm its opinion.

Stifel's opinion was approved by Stifel's fairness committee. Stifel's opinion is for the information of, and directed to, Amtech's board of directors (in its capacity as such) for its information and assistance in connection with its consideration of the financial terms of the merger. Stifel's opinion does not constitute a recommendation to the Amtech board of directors as to how they should vote on the merger or to any stockholder of Amtech as to how any such stockholder should vote at any stockholders' meeting at which the merger is considered, or whether or not any stockholder of Amtech should enter into a voting, shareholders' or affiliates' agreement with respect to the merger, or exercise any dissenters' or appraisal rights that may be available to such stockholder. In addition, Stifel's opinion does not compare the relative merits of the merger with any other alternative transactions or business strategies which may have been available to the Company and does not address the underlying business decision of Amtech's board of directors or Amtech to proceed with or effect the merger.

Stifel was not requested to, and did not, explore alternatives to the merger or solicit the interest of any other parties in pursuing transactions with Amtech. Stifel did not consider any potential legislative or regulatory changes then being considered or recently enacted by the United States Congress, the SEC, or any other regulatory bodies, or any changes in accounting methods or generally accepted accounting principles that may be adopted by the SEC or the Financial Accounting Standards Board. Stifel's opinion states that it is not a solvency opinion and does not in any way address the solvency or financial condition of Amtech, BTU, or any other party.

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The following represents a brief summary of the material financial analyses performed by Stifel in connection with its opinion. Some of the summaries of financial analyses performed by Stifel include information presented in tabular format. In order to fully understand the financial analyses performed by Stifel, you should read the tables together with the text of each summary. The tables alone do not constitute a complete description of the financial analyses. Considering the information set forth in the tables without considering the full narrative description of the financial analyses, including the methodologies and assumptions underlying the analyses, could create a misleading or incomplete view of the financial analyses performed by Stifel.

Except as otherwise noted, the information utilized by Stifel in its analyses, to the extent that it was based on market data, is based on market data as it existed on or before October 17, 2014 and is not necessarily indicative of current market conditions. The analyses described below do not purport to be indicative of actual future results, or to reflect the prices at which any securities may trade in the public markets, which may vary depending upon various factors, including changes in interest rates, dividend rates, market conditions, economic conditions and other factors that influence the price of securities.

Selected Comparable Companies Analysis

BTU

Stifel compared BTU, from a financial point of view, to 14 publicly traded companies in the electronics equipment and semiconductor packaging, assembly and test industries that Stifel deemed to be relevant based on their business profiles and financial metrics. Stifel compared BTU's last 12 months (which we refer to as "LTM"), estimated calendar year 2014 and 2015 financial metrics, as provided by Amtech's management, to the LTM, estimated calendar year 2014 and 2015 financial metrics, obtained from available public sources, of the 14 companies. Stifel believes that the group of companies listed below has business models similar to those of BTU, but noted that none of these companies have the same management, composition, size, operations, financial profile, or combination of businesses as BTU:

- Fuji Machine Mfg. Co., Ltd.
- Orbotech Ltd.
- Mycronic AB
- Electro Scientific Industries, Inc.
- Camtek Ltd.
- CyberOptics Corporation
- Kulicke and Soffa Industries, Inc.
- BE Semiconductor Industries N.V.
- Xcerra Corporation
- FormFactor, Inc.
- Cohu, Inc.
- Cascade Microtech, Inc.
- inTEST Corporation
- Aehr Test Systems

Based on this information, Stifel calculated and compared the following multiples for BTU and the selected comparable companies:

- Multiples of enterprise value ("EV"), which Stifel defined as fully-diluted equity value using the treasury stock method, plus debt, preferred stock and minority interests, less cash and cash equivalents, to LTM, estimated calendar year 2014 and 2015 revenues ("EV/Revenue").

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- Multiples of EV to estimated calendar year 2014 and 2015 earnings before one-time charges, interest, taxes, stock-based compensation and depreciation and amortization (“EV/ EBITDA”).
- Multiples of fully-diluted equity value using the treasury stock method (“EQV”) to estimated calendar year 2015 adjusted net income (“Net Income”) as adjusted to exclude stock-based compensation, amortization of intangibles and one-time charges (“EQV / Net Income”).

The following table sets forth the multiples indicated by this analysis, including the first quartile and third quartile multiples relative to the selected companies and the multiples implied by the merger:

Multiple:	1st Quartile	Median	Mean	3rd Quartile	Range of Multiples Utilized in the Analysis	Proposed Transaction
LTM EV/Revenue	0.8x	1.1x	1.2x	1.4x	0.8x – 1.4x	0.6x
CY 2014 EV/Revenue	0.7x	1.0x	1.0x	1.1x	0.7x – 1.1x	0.5x
CY 2015 EV/Revenue	0.7x	0.8x	0.9x	1.0x	0.7x – 1.0x	0.5x
CY 2014 EV/EBITDA	5.4x	7.0x	8.6x	10.0x	5.4x – 10.0x	30.5x
CY 2015 EV/EBITDA	4.9x	5.5x	7.2x	7.3x	4.9x – 7.3x	5.8x
CY 2015 EQV/Net Income	8.4x	11.1x	11.3x	13.8x	8.4x – 13.8x	12.8x

This analysis resulted in a range of implied equity values for BTUI of \$3.07—\$4.57 per share.

No company utilized in the selected company analysis is identical to BTU. Accordingly, an analysis of the results of the foregoing is not mathematical; rather it involves complex considerations and judgments concerning differences in financial and operating characteristics of the companies and other factors that could affect the public trading value of BTU or any of the companies involved in the selected company analysis. In evaluating the selected companies, Stifel made judgments and assumptions with regard to industry performance, general business, economic, market and financial conditions and other matters, many of which are beyond BTU’s control, such as the impact of competition on its business and the industry generally, industry growth and the absence of any adverse material change in the financial condition and prospects of BTU or any of the companies involved in the selected company analysis or in the industry or in the financial markets in general. Mathematical analysis (such as determining the mean or median) is not in itself a meaningful method of using peer group data.

Amtech

Stifel compared Amtech, from a financial point of view, to the same 14 publicly traded companies in the electronics equipment and semiconductor packaging, assembly and test industries to which Stifel compared BTU. Stifel compared Amtech’s LTM, estimated calendar year 2014 and 2015 financial metrics, as provided by Amtech’s management, to the LTM, estimated calendar year 2014 and 2015 financial metrics, obtained from available public sources, of the 14 companies. Stifel believes that this group of companies has business models similar to those of Amtech, but noted that none of these companies have the same management, composition, size, operations, financial profile, or combination of businesses as Amtech:

Based on this information, Stifel calculated and compared the following multiples for Amtech and the selected comparable companies:

- Multiples of EV/Revenue based upon Amtech’s LTM, estimated calendar year 2014 and 2015 revenues.
- Multiples of EV/ EBITDA based upon Amtech’s estimated calendar year 2015 earnings before one-time charges, interest, taxes, stock-based compensation and depreciation and amortization.
- Multiples of EQV/Net Income based upon Amtech’s estimated calendar year 2015 adjusted Net Income as adjusted to exclude stock-based compensation, amortization of intangibles and one-time charges.

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The following table sets forth the multiples indicated by this analysis, including the first quartile and third quartile multiples relative to the selected companies and the multiples implied by Amtech's price per share as of the market close on October 17, 2014:

Multiple:	1st Quartile	Median	Mean	3rd Quartile	Range of Multiples Utilized in the Analysis	Implied by Amtech's Closing Stock Price as of October 17, 2014
LTM EV/Revenue	0.8x	1.1x	1.2x	1.4x	0.8x – 1.4x	1.6x
CY 2014 EV/Revenue	0.7x	1.0x	1.0x	1.1x	0.7x – 1.1x	1.1x
CY 2015 EV/Revenue	0.7x	0.8x	0.9x	1.0x	0.7x – 1.0x	0.6x
CY 2015 EV/EBITDA	4.9x	5.5x	7.2x	7.3x	4.9x – 7.3x	4.9x
CY 2015 EQV/ Net Income	8.4x	11.1x	11.3x	13.8x	8.4x – 13.8x	11.9x

This analysis resulted in a range of implied equity values for Amtech of \$8.59 – \$11.63 per share.

No company utilized in the selected company analysis is identical to Amtech. Accordingly, an analysis of the results of the foregoing is not mathematical; rather it involves complex considerations and judgments concerning differences in financial and operating characteristics of the companies and other factors that could affect the public trading value of Amtech or any of the companies involved in the selected company analysis. In evaluating the selected companies, Stifel made judgments and assumptions with regard to industry performance, general business, economic, market and financial conditions and other matters, many of which are beyond Amtech's control, such as the impact of competition on its business and the industry generally, industry growth and the absence of any adverse material change in the financial condition and prospects of Amtech or any of the companies involved in the selected company analysis or in the industry or in the financial markets in general. Mathematical analysis (such as determining the mean or median) is not in itself a meaningful method of using peer group data.

Selected Precedent Transactions Analysis

BTU

Based on public and other information available to Stifel, Stifel calculated and compared the multiples of (1) EV to LTM and next twelve months (which we refer to as "NTM") Revenue, (2) EV to NTM EBITDA, and (3) EQV to NTM Net Income

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(“NTM EQV/Net Income”) implied in the merger for BTU to the corresponding multiples implied in the following 20 selected acquisitions of companies in the electronics equipment and semiconductor packaging, assembly and test industries:

Announcement Date	Acquirer	Target
07/07/14	Orbotech Ltd.	SPTS Technologies Limited
12/03/13	ASM Pacific Technology Limited	DEK International GmbH
10/02/13	Cascade Microtech, Inc.	Advanced Temperature Test Systems GmbH
08/19/13	Atlas Copco AB	Edwards Group Limited
04/10/13	Electro Scientific Industries, Inc.	GSI Semi Systems Business
12/12/12	Rudolph Technologies Inc.	Azores Corp.
12/10/12	Cohu, Inc.	Ismeca Semiconductor Holding S.A.
08/13/12	Tokyo Electron Limited	FSI International, Inc.
05/18/12	Ultra Clean Holdings, Inc.	Advanced Integration Technologies
03/16/12	Tokyo Electron Limited	Nexx Systems, Inc.
03/02/12	Tokyo Electron Limited	Oerlikon Solar AG
04/11/11	Meyer Burger Technology Ltd.	Roth & Rau AG
03/28/11	Advantest Corporation	Verigy, Ltd.
01/27/10	Cascade Microtech Inc.	Suss Microtec Test Systems
04/21/09	Mycronic Laser Systems AB	MYDATA automation AB
12/08/08	Cohu, Inc.	Rasco GmbH
09/01/08	Teradyne, Inc.	Eagle Test Systems, Inc.
07/31/08	Kulicke and Soffa Industries, Inc.	Orthodyne Electronics Corp.
06/26/08	Orbotech Ltd.	Photon Dynamics, Inc.
06/22/08	LTX Corp.	Credence Systems Corporation

The following table sets forth the multiples indicated by this analysis, including the first quartile and third quartile multiples relative to the selected precedent transactions and the multiples implied by the merger:

Multiple:	1st Quartile	Median	Mean	3rd Quartile	Range of Multiples Utilized in the Analysis
LTM EV/Revenue	0.7x	1.4x	1.5x	2.0x	0.7x – 2.0x
NTM EV/Revenue	0.7x	1.2x	1.2x	1.5x	0.7x – 1.5x
NTM EV/EBITDA	7.7x	7.9x	8.9x	8.1x	7.7x – 8.1x
NTM EQV/Net Income	11.5x	13.9x	14.8x	16.4x	11.5x – 16.4x

Based on its review of the precedent transactions, Stifel applied selected multiples to the corresponding LTM and NTM Revenue, EBITDA and Net Income of BTU, in each case as provided by Amtech’s management. This analysis resulted in a range of implied equity values for BTU of \$2.98—\$5.73 per share.

No transaction used in the precedent transactions analyses is identical to the merger. Accordingly, an analysis of the results of the foregoing is not mathematical; rather, it involves complex considerations and judgments concerning differences in financial and operating characteristics of the companies and other factors that could affect the public trading value of the companies involved in the precedent transactions which in turn, affect the enterprise value and equity value of the companies involved in the transactions to which the merger is being compared. In evaluating the precedent transactions, Stifel made judgments and assumptions with regard to industry performance, general business, economic, market and financial conditions, and other matters, such as the impact of competition, industry growth and the absence of any adverse material change in the financial condition or prospects of BTU or the companies involved in the selected precedent transactions analysis or in the industry or in the financial markets in general, which could affect the public trading value of the companies involved in the selected precedent transactions analysis which, in turn, affect the enterprise value and equity value of the companies involved in the transactions to which the merger is being compared.

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Discounted Cash Flow Analysis

BTU

Stifel utilized the financial projections and estimates provided by Amtech's management to perform a discounted cash flow analysis of BTU. In conducting this analysis, Stifel assumed that BTU would perform in accordance with these projections and estimates. Stifel performed an analysis of the present value of the unlevered free cash flows that Amtech's management projected BTU will generate from 06/30/2014 to 12/31/2018. Stifel utilized illustrative terminal values in calendar year 2018 based on a multiple range of 5.5x—10.0x on projected calendar year 2018 EBITDA. This selected range of EV/EBITDA multiples was based upon the range utilized for calendar year 2014 EV/EBITDA in the BTU Selected Comparable Companies Analysis. Stifel discounted the cash flows projected for the specified period using discount rates ranging from 19.5% to 23.5%, reflecting estimates of BTU's weighted average cost of capital. This analysis resulted in a range of implied equity values for BTU of \$2.66 to \$3.78 per share.

Amtech

Stifel utilized the financial projections and estimates provided by the Company's management to perform a discounted cash flow analysis of Amtech. In conducting this analysis, Stifel assumed that Amtech would perform in accordance with these projections and estimates. Stifel performed an analysis of the present value of the unlevered free cash flows that Amtech's management projected it will generate from 06/30/2014 to 12/31/2018. Stifel utilized illustrative terminal values in calendar year 2018 based on a multiple range of 5.5x—10.0x on projected calendar year 2018 EBITDA. This selected range of EV/EBITDA multiples was based upon the range observed for calendar year 2014 EV/EBITDA in the Amtech Selected Comparable Companies Analysis. Stifel discounted the cash flows projected for the specified period using discount rates ranging from 17.5% to 19.5%, reflecting estimates of Amtech's weighted average cost of capital. This analysis resulted in a range of implied equity values for Amtech of \$11.18 to \$15.16 per share.

Discounted Equity Analysis

BTU

Stifel performed an analysis of the implied present value of the future price per share of BTU common stock, which is designed to provide an indication of the present value of a theoretical future value of a company's equity value per share as a function of the company's estimated future earnings per share (which we refer to as "EPS") and its assumed price/earnings (which we refer to as "P/E") multiple. Stifel applied a selected range of P/E multiples of 13.0x to 20.4x to estimated EPS of BTU for each of the calendar years 2015 and 2016, as provided by Amtech's management. This selected range of P/E multiples was based upon the range observed for calendar year 2014 P/E in the BTU Selected Comparable Companies Analysis. Stifel then discounted the 2015 and 2016 values back to present by using a discount rate of 21.6%, reflecting an estimate of BTU's cost of equity that was derived by application of the Capital Asset Pricing Model, which takes into account certain company-specific metrics, including a company's equity value, as well as certain financial metrics for the United States financial markets generally. This analysis resulted in a range of implied equity values for BTU of \$2.63 to \$4.13 per share.

Amtech

Stifel also performed an analysis of the implied present value of the future price per share of Amtech common stock. Stifel applied a selected range of P/E multiples of 13.0x to 20.4x to estimated EPS of Amtech for each of the calendar years 2015 and 2016, as provided by Amtech's management. This selected range of P/E multiples was based upon the range observed for calendar year 2014 P/E in the Amtech Selected Comparable Companies Analysis. Stifel then discounted the 2015 and 2016 values back to present by using a discount rate of 18.5%, reflecting an estimate of Amtech's cost of equity that was derived by application of the Capital Asset Pricing Model. This analysis resulted in a range of implied equity values for Amtech of \$8.86 to \$13.91 per share.

The foregoing description is only a summary of the material financial analyses performed by Stifel in arriving at its opinion. The summary alone does not constitute a complete description of the financial analyses Stifel employed in reaching its

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conclusions. None of the analyses performed by Stifel were assigned a greater significance by Stifel than any other, nor does the order of analyses described represent relative importance or weight given to those analyses by Stifel. No methodology employed by Stifel can be viewed individually, and if viewed in isolation could create a misleading or incomplete view of the financial analyses performed by Stifel. Additionally, no company or transaction used in any analysis as a comparison is identical to BTU, Amtech or the merger, and they all differ in material ways. Accordingly, an analysis of the results described above is not mathematical; rather it involves complex considerations and judgments concerning differences in financial and operating characteristics of the companies and other factors that could affect the public trading value of the selected companies or transactions to which they are being compared. Stifel used these analyses to determine the impact of various operating metrics on the implied enterprise values and implied per share equity values of BTU and Amtech. Each of these analyses yielded a range of implied enterprise values and implied per share equity values, and therefore, such implied enterprise value ranges and implied per share equity values developed from these analyses were viewed by Stifel collectively and not individually. Stifel made its determination as to the fairness, from a financial point of view, of the exchange ratio to the holders of Amtech common stock, as of the date of the opinion, on the basis of its experience and professional judgment after considering the results of all of the analyses performed.

Miscellaneous

Amtech agreed to pay Stifel an initial fee (which we refer to as the “Retainer Fee”) of \$50,000 upon its engagement to provide financial advisory services to Amtech and a fee (which we refer to as the “Opinion Fee”) of \$250,000 for its services as financial advisor to Amtech’s board of directors upon delivery of Stifel’s opinion (neither of which fees are contingent upon the consummation of the merger) and a fee (which we refer to as the “Transaction Fee”) for its services as financial advisor to Amtech in connection with the merger in an amount equal to \$800,000, against which the Retainer Fee and the Opinion Fee will be credited. Stifel will not receive any other significant payment or compensation contingent upon the successful consummation of the merger. In the event the merger is not consummated and Amtech receives a termination or break-up fee, then Amtech shall pay Stifel a fee (which we refer to as the “Termination Fee”) equal to 10% of such termination or break-up fee received by Amtech, less the amount of the Retainer Fee and the Opinion Fee. In addition, Amtech has agreed to reimburse Stifel for its expenses in connection with its engagement, subject to certain limitations, and to indemnify Stifel for certain liabilities arising out of its engagement.

Stifel may seek to provide investment banking services to Amtech or its affiliates, or BTU or its affiliates in the future, for which Stifel would seek customary compensation. In the ordinary course of business, Stifel and its clients may transact in the equity securities of each of BTU and Amtech and may at any time hold a long or short position in such securities.

Interests of BTU’s Directors and Executive Officers in the Merger

In considering the recommendations of BTU’s board of directors with respect to the merger, you should be aware that certain executive officers and members of the board of directors of BTU have agreements or arrangements that provide them with interests in the merger, including financial interests, that may be different from, or in addition to, the interests of the other stockholders of BTU. BTU’s board of directors was aware of these interests during its deliberations of the merits of the merger and in determining to recommend to BTU stockholders that they vote for the proposal to adopt the merger agreement and thereby approve the transactions contemplated by the merger agreement, including the merger. The amounts set forth in the discussions below regarding director and executive officer compensation are based on compensation levels as of the date of this joint proxy statement/prospectus unless otherwise specified.

BTU Stock-Based Awards

Stock Options. The executive officers hold outstanding awards of BTU stock options, some of which are currently underwater (i.e., the exercise price of such stock option exceeds the current price of a share of BTU common stock), based on the closing price of a share of BTU common stock as of November 21, 2014. The merger agreement provides that at the effective time of the merger, each option granted by BTU to purchase shares of BTU common stock under the BTU Equity Incentive Plan, whether vested or unvested, that is outstanding and unexercised shall cease to represent a right to acquire shares of BTU common stock and shall be converted automatically into an option to purchase shares of Amtech common stock with such converted option to

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continue to be subject to the same terms and conditions as were applicable to the BTU stock option under the BTU Equity Incentive Plan and the applicable award agreement thereunder as follows: (i) the number of shares of Amtech common stock to be subject to the new option will be equal to the product of the number of shares of BTU common stock subject to the existing option and the exchange ratio, and (ii) the exercise price per share of Amtech common stock under the new option will be equal to the exercise price per share of BTU common stock of the existing option divided by the exchange ratio.

The non-employee directors of BTU hold outstanding awards of BTU stock options. The vesting of these awards will accelerate prior to the merger and such awards will terminate, if not exercised, upon consummation of the merger.

RSUs. The executive officers hold restricted stock units (RSUs) of BTU Common Stock. The merger agreement provides that immediately prior to the consummation of the merger, each RSU will become a fully vested and unrestricted share of BTU Common Stock.

Equity Awards Held by BTU's Executive Officers and Directors. Based upon equity compensation holdings as of November 21, 2014, BTU's executive officers and directors hold the following equity awards, which will be treated as described above:

	Number of Shares subject to BTU stock options that will accelerate(1)	Number of Shares subject to BTU RSUs that will accelerate(1)	Estimated Total value (\$) (2)
Executive Officers			
Paul J. van der Wansem	25,750	2,500	\$ 14,123
Peter J. Tallian	—	4,250	\$ 13,945
John J. McCaffrey	—	5,750	\$ 18,866
Directors			
Bertrand Loy	12,083	—	\$ 4,480
J. Samuel Parkhill	7,500	—	\$ 4,290
Joseph F. Wrinn	12,083	—	\$ 4,480
G. Mead Wyman	12,083	—	\$ 4,480

- (1) As described above, BTU RSUs will accelerate vesting in connection with the merger. BTU options granted to Mr. van der Wansem will be accelerated pursuant to his employment agreement, as it is anticipated that his employment will be terminated in connection with the merger. Mr. Tallian's options shall be converted into options to acquire Amtech stock and will continue to vest in accordance with their existing vesting terms. Mr. McCaffrey's employment with BTU is expected to be terminated at the time of the merger and none of his unvested options will accelerate in connection therewith.
- (2) The estimated total value of the unvested BTU Stock Options that will accelerate vesting in connection with the merger (or upon a subsequent termination of employment) was determined by multiplying (A) the product of (i) the number of shares of BTU common stock estimated to be subject to each unvested BTU Stock Option as of immediately prior to March 1, 2015 (the assumed date on which the merger will occur), and that will accelerate in connection with the merger (or upon a subsequent termination of employment), and (ii) 0.3291, the exchange ratio, and (B) the excess of \$9.97 (the estimated value of one share of Amtech common stock based on the average closing price of Amtech common stock on The NASDAQ Global Market over the five (5) trading days beginning on November 14, 2014, and ending on November 20, 2014) over the quotient obtained by dividing (i) the exercise price per share of such BTU Stock Option by (ii) 0.3291 the exchange ratio. The estimated total value of the BTU RSUs that will accelerate vesting in connection with the merger (or upon a subsequent termination of employment) was determined by multiplying (A) the product of (i) the number of shares of BTU common stock estimated to be subject to the BTU RSUs, as of immediately prior to March 1, 2015, and (ii) 0.3291, the exchange ratio, and (B) \$9.97 (the estimated value of one share of Amtech common stock based on the average closing price of Amtech common stock on The NASDAQ Global Market over the five (5) trading days beginning on November 14, 2014, and ending on November 20, 2014).

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Employment and Change of Control Agreements with BTU Executive Officers

BTU previously entered into an employment agreement with each of its executive officers. BTU entered into these agreements at the time to promote stability and the continuity of senior management, and these agreements contained provisions regarding payments to be made to the executive officers upon the occurrence of certain terminations of employment and/or change of control events. Mr. van der Wansem's employment with BTU will be terminated, and he has entered into a one-year employment agreement with Amtech, which will become effective upon consummation of the merger. Mr. van der Wansem has also entered into a two-year consulting agreement with Amtech, which will become effective following the termination of the employment agreement. In connection with the merger, and as further described below, Mr. Tallian, who is expected to continue employment with Amtech following the merger, has agreed to amend his existing BTU agreement, which will become effective upon consummation of the merger. Each of these agreements was negotiated by the individual BTU executive officer with Amtech. Mr. McCaffrey's employment with BTU will terminate as of the consummation of the merger. Amtech has not entered into an agreement with Mr. McCaffrey.

Mr. van der Wansem

Employment Contract with BTU

Upon consummation of the merger, Mr. van der Wansem's employment with BTU will be terminated and he will be entitled to receive the benefits set forth below. Mr. van der Wansem's employment agreement with BTU, originally entered into in June 2005, provides as follows:

If Mr. van der Wansem's employment is terminated in the event of death or disability or if he terminates his employment with BTU for other than good reason, as defined in the agreement, then BTU will pay to him: (i) base salary through the termination date, (ii) vacation earned but not used, (iii) any bonus for the preceding year to the extent earned but not yet paid, (iv) if he has worked at least 90 days during the fiscal year, a pro-rated portion of the current year's bonus, and (v) business expenses incurred but not yet paid.

If Mr. van der Wansem is terminated by BTU for cause, as defined in the agreement, then BTU will pay to him: (i) base salary through the termination date, (ii) vacation earned but not used, (iii) any bonus for the preceding year to the extent earned but not yet paid and (iv) business expenses incurred but not yet paid.

If Mr. van der Wansem is terminated by BTU for reasons other than for cause or if he terminates his employment with BTU for good reason, then BTU will pay to him: (i) base salary through the termination date, (ii) vacation earned but not used, (iii) any bonus for the preceding year to the extent earned but not yet paid, (iv) if he has worked at least 90 days during the fiscal year, a pro-rated portion of the current year's bonus, (v) business expenses incurred but not yet paid, and (vi) an amount equal to his base salary for a period equal to twelve months. In addition, BTU will continue Mr. van der Wansem's medical and dental payments for six months after termination and his automobile allowance for three months after termination.

If a change of control occurs and if Mr. van der Wansem's employment is terminated for a reason other than for cause, BTU will pay to him: (i) base salary through the termination date, (ii) vacation earned but not used, (iii) any bonus for the preceding year to the extent earned but not yet paid, (iv) any bonus for the fiscal year of the termination, pro-rated based on the number of days during which Mr. van der Wansem was employed by BTU, (v) business expenses incurred but not yet paid and (vi) an amount equal to his annual base salary paid in a single lump-sum payment. Additionally, BTU will accelerate the exercisability of any options and cancel any restrictions on any restricted stock he holds.

If Mr. van der Wansem's employment is terminated and a change in control occurs in the following four months, BTU will pay to Mr. van der Wansem a lump sum payment reflecting his aggregate remaining severance payments that he would have been entitled to upon a termination following a change in control, as described above, and the difference between the exercise price and the closing price (on the date of the change of control) on all options held by Mr. van der Wansem that were cancelled or expired upon his termination.

Mr. van der Wansem has agreed to confidentiality provisions and to a one-year non-competition covenant, following any termination of his employment.

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In connection with the merger, Mr. van der Wansem entered into a one-year employment agreement with Amtech, which term will commence on the first day after the merger. Mr. van der Wansem's employment with BTU will be terminated immediately following the effective time of the merger. In addition, Mr. van der Wansem also entered into a two-year consulting agreement with Amtech to continue following the termination of the employment agreement.

Amtech Employment and Consulting Agreement

Amtech's Employment agreement with Mr. van der Wansem provides for his service as a member of the Management Executive Committee and the Amtech board of directors following the completion of the merger, as well as for general advisory services as requested by the Executive Chairman of Amtech for a term of one year. Amtech has also agreed to nominate Mr. van der Wansem to its board of directors for a period of three years following the merger. During the term of the agreement, Mr. van der Wansem will also be paid an annual salary of \$350,000, and will be provided with health insurance and other benefits in effect for executives of Amtech and an automobile allowance. Mr. van der Wansem will also receive a grant of 30,000 options promptly following the completion of the merger, which will vest equally over each of the first three anniversaries of the grant date subject to Mr. van der Wansem's continued service.

Under the employment agreement with Amtech, if Amtech terminates the services of Mr. van der Wansem without "cause", or if Mr. van der Wansem terminates his employment for "good reason," each as defined in the agreement, then Mr. van der Wansem will, subject to continued compliance with certain restrictive covenants, be entitled to (i) the unpaid portion of the compensation he would have received for the one-year term of the agreement, payable at such times as such compensation would be paid had he continued to perform services under the agreement and (ii) acceleration of vesting of the options granted to Mr. van der Wansem.

Mr. van der Wansem's agreement also provides that, for a period of two years following the termination of the agreement with Amtech for any reason, Mr. van der Wansem will be restricted from competing with Amtech and its affiliates, from soliciting Amtech's and its affiliates' respective customers or employees, and from engaging in certain activities in connection with acquiring the voting stock or assets of Amtech or involvement in any proxy contest involving Amtech.

In addition, Mr. van der Wansem entered into a consulting agreement with Amtech to be effective following the termination of his employment agreement, unless the employment agreement is terminated as a result of death or disability, or termination by Amtech for "cause" or other than for "cause," as defined in the employment agreement, or termination by Mr. van der Wansem for "good reason" or other than for "good reason", as defined in the employment agreement. The consulting agreement will extend for a period of two years, shall involve Mr. van der Wansem's provision of consulting, strategic or advisory services as agreed to by Amtech and Mr. van der Wansem, and shall provide compensation of \$22,083.33 per month. In the event that Mr. van der Wansem's consulting agreement is terminated other than for "cause" or if Mr. van der Wansem terminates the consulting agreement for "good reason" as those terms are defined in the consulting agreement, Mr. van der Wansem shall be entitled to (i) the unpaid portion of the compensation he would have received for the two year period of the agreement, payable at such times as such compensation would be paid had he continued to perform services under the agreement and (ii) acceleration of options granted to Mr. van der Wansem pursuant to the employment agreement.

Mr. Tallian

In connection with the merger, Mr. Tallian entered into an amendment to his employment agreement with BTU, which amendment will be effective upon consummation of the merger. Pursuant to that amendment, the following terms of employment were agreed to:

- Mr. Tallian's job title will change to General Manager of BTU, reporting to the Chief Executive Officer of Amtech.
- Mr. Tallian's base salary shall be decreased to an annualized amount equal to \$265,000.
- Mr. Tallian will be entitled to receive an annual bonus equal to 30% of base salary upon achievement by BTU of 100% of its EBITDA target for such year, increasing to up to 45% of base salary in the event BTU exceeds such target, provided that Mr. Tallian remains employed as of the date of payment of such bonus.

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- Mr. Tallian will receive an option to purchase 15,000 shares of Amtech Common Stock, such option to vest equally over four years from date of grant.
- Mr. Tallian's "double trigger" change of control severance payment is amended to not apply to the merger, but shall apply in connection with any subsequent change of control of Amtech.

Employment Contract with BTU

Upon consummation of the merger, the amendment to Mr. Tallian's employment agreement described above will become effective. Mr. Tallian's current employment agreement with BTU, which will remain in force upon consummation of the merger, subject only to being amended by the terms of the amendment described above, currently provides as follows:

- In the event that BTU terminates Mr. Tallian's employment other than for cause, as defined in the agreement, BTU will continue to pay Mr. Tallian's salary for up to 12 months, will continue to contribute to the premium cost of Mr. Tallian's medical and dental coverage during this period, and will pay a pro-rata portion of Mr. Tallian's bonus for the year of termination.
- If a change of control occurs, and (i) Mr. Tallian remains employed by BTU on the date that is six months thereafter or (ii) BTU terminates Mr. Tallian's employment other than for cause before six months thereafter, BTU will provide Mr. Tallian with either (A) a cash payment equal to the value of 7,000 shares of BTU's Common Stock at the time of the change of control or (B) at BTU's option, if BTU is the surviving corporation, 7,000 shares of BTU's Common Stock.
- In the event that within one year of a change in control BTU terminates Mr. Tallian's employment other than for cause or Mr. Tallian terminates his employment for good reason, as defined in the agreement, BTU will make a lump-sum payment to Mr. Tallian equal to 12 months of Mr. Tallian's base salary, subject to the terms and conditions set forth in the amended retention agreement, and a pro-rata portion of Mr. Tallian's bonus for the year of termination.
- Mr. Tallian also agrees to comply with certain confidentiality, standstill and non-solicit covenants following a termination of employment.

Mr. McCaffrey

Upon consummation of the merger, Mr. McCaffrey's employment with BTU will be terminated and he will be entitled to receive the benefits set forth below. Mr. McCaffrey's employment agreement with BTU provides as follows:

- In the event that BTU terminates Mr. McCaffrey's employment other than for cause, as defined in the agreement, BTU will continue to pay Mr. McCaffrey's salary for up to 12 months, depending on length of service, will continue to contribute to the premium cost of Mr. McCaffrey's medical and dental coverage during this period, and will pay a pro-rata portion of Mr. McCaffrey's bonus for the year of termination.
- If a change of control occurs, and (i) Mr. McCaffrey remains employed by BTU on the date that is six months thereafter or (ii) BTU terminates Mr. McCaffrey's employment other than for cause before six months thereafter, BTU will provide Mr. McCaffrey with either (A) a cash payment equal to the value of 7,000 shares of BTU's Common Stock at the time of the change of control or (B) at BTU's option, if BTU is the surviving corporation, 7,000 shares of BTU's Common Stock.
- In the event that within one year of a change in control BTU terminates Mr. McCaffrey's employment other than for cause or Mr. McCaffrey terminates his employment for good reason, as defined in the agreement, BTU will make a lump-sum payment to Mr. McCaffrey equal to a maximum of 12 months of Mr. McCaffrey's base salary and a pro-rata portion of Mr. McCaffrey's bonus for the year of termination.
- Mr. McCaffrey also agrees to comply with certain confidentiality, standstill and non-solicit covenants following a termination of employment.

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Merger-Related Compensation for BTU's Named Executive Officers

Golden Parachute Compensation

This section sets forth the information required by Item 402(t) of Regulation S-K regarding the compensation for each named executive officer of BTU that is based on or otherwise relates to the merger. This compensation is referred to as "golden parachute" compensation by the applicable SEC disclosure rules, and in this section we use such term to describe the merger-related compensation payable to our named executive officers. The "golden parachute" compensation payable to these individuals is subject to a nonbinding advisory vote of BTU's stockholders, as described above in "BTU Merger-Related Proposals—Proposal No. 3: BTU Merger-Related Compensation Proposal" beginning on page 42.

The terms of the merger agreement provide for the conversion of outstanding BTU stock option awards into stock option awards in respect of Amtech common stock upon the closing of the merger. For a description of the treatment of outstanding equity awards held by BTU directors and executive officers, see "The Merger—Interests of BTU's Directors and Executive Officers in the Merger" beginning on page 126.

The named executive officers are entitled to certain "double-trigger" severance payments and benefits, which are paid upon a qualifying termination of employment or other event following a change in control, in each case, pursuant to the employment and retention agreements described above in "The Merger—Interests of BTU's Directors and Executive Officers in the Merger—Employment and Change of Control Agreements with BTU Executive Officers" beginning on page 128. Compensation that may be paid or become payable to BTU's named executive officers in connection with the merger pursuant to agreements solely between the named executive officers and Amtech is not subject to the non-binding advisory vote but is described, inclusive of the potential payments and benefits under the employment agreements and services agreements with Amtech, above in "The Merger—Interests of BTU's Directors and Executive Officers in the Merger—Employment and Change of Control Agreements with BTU Executive Officers."

The following table sets forth the amount of payments and benefits that may be paid or become payable to each of the named executive officers in connection with the merger pursuant to their employment arrangements with BTU, assuming: (1) the effective time of the merger occurred on November 21, 2014 (the last practicable date prior to the filing of this proxy statement/prospectus); and (2) a per share price of BTU common stock of \$3.12, the average closing price per share over the first five business days following the announcement of the merger agreement. The amounts shown below are estimates based on multiple assumptions that may or may not actually occur, including assumptions described in this proxy statement/prospectus, and do not reflect certain compensation actions that may occur before the completion of the merger. As a result, the actual amounts to be received by a named executive officer may differ materially from the amounts set forth below.

<u>Name</u>	<u>Cash (\$)</u>	<u>Equity (\$)</u>	<u>Perquisites/ Benefits(\$)</u>	<u>Total (\$)</u>
Paul J. van der Wansem(1)	\$546,250	\$12,613	—	\$558,863
Peter J. Tallian(2)	—	\$13,260	—	\$ 13,260
John J. McCaffrey(3)	\$303,840	\$17,940	—	\$321,780

- (1) In connection with the merger and the termination of his employment in connection therewith, Mr. van der Wansem is entitled to the following cash payments under his employment agreement: (i) any bonus for the fiscal year of the termination, pro-rated based on the number of days during which Mr. van der Wansem was employed by BTU (\$109,250) (the value of the bonus is based upon the maximum potential payout to Mr. van der Wansem, which may not be the actual amount payable to Mr. van der Wansem), and (ii) an amount equal to his annual base salary paid in a single lump-sum payment (\$437,000). In connection with the merger and the termination of his employment in connection therewith, all of Mr. van der Wansem's unvested options to purchase BTU common stock will accelerate (\$4,813). As a result solely of the consummation of the merger, all of Mr. van der Wansem's unvested RSUs would be accelerated (\$7,800). Under his employment agreement, Mr. van der Wansem would also be entitled to base salary through the date of termination, a payment for vacation earned but not used through the date of termination and a payment for business expenses incurred but not reimbursed as of the termination date, which payments are not reflected in the table above. Mr. van der Wansem's vested but unexercised stock options have a value of approximately \$35,063.

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- (2) Mr. Tallian is not entitled to any payments in connection with the merger other than in connection with this continued employment as an employee of BTU. As a result solely of the consummation of the merger, all of Mr. Tallian's unvested RSUs would be accelerated (\$13,260) and all of Mr. Tallian's stock options would be converted to Amtech stock options pursuant to and in accordance with the merger agreement. Assuming a per share price of \$3.12 as set forth above, Mr. Tallian does not have any in-the-money stock options.
- (3) In connection with the merger and the termination of his employment in connection therewith, Mr. McCaffrey is entitled to the following cash payments under his employment agreement: (i) any bonus for the fiscal year of the termination, pro-rated based on the number of days during which Mr. McCaffrey was employed by BTU (\$47,000) (the value of the bonus is based upon the maximum potential payout to Mr. McCaffrey, which may not be the actual amount payable to Mr. McCaffrey), and (ii) an amount equal to his annual base salary paid in a single lump-sum payment (\$235,000). Additionally, BTU will make a cash payment equal to the value of 7,000 shares of BTU's common stock at the time of the change of control (for purposes of this table, \$3.12) (\$21,840). In connection with the merger and the termination of his employment in connection therewith, all of Mr. McCaffrey's unvested options to purchase BTU common stock will terminate. As a result solely of the consummation of the merger, all of Mr. McCaffrey's unvested RSUs would be accelerated (\$17,940). Mr. McCaffrey's vested but unexercised stock options have a value of approximately \$6,624.

Vote Required

Section 951 of the Dodd-Frank Act and Rule 14a-21(c) under the Exchange Act requires that BTU seek a non-binding advisory vote from its stockholders to approve certain "golden parachute" compensation that its "named executive officers" will receive from BTU in connection with the merger. The proposal gives BTU's stockholders the opportunity to express their views on the merger-related compensation of BTU's named executive officers. Approval requires the affirmative vote of the majority of shares present in person or represented by proxy and entitled to vote on the proposal. Accordingly, BTU is asking its stockholders to approve the following resolution on a non-binding, advisory basis:

"RESOLVED, that the compensation that may be paid or become payable to BTU's named executive officers in connection with the merger pursuant to agreements or understandings with BTU, and the agreements and understandings with BTU pursuant to which such compensation may be paid or become payable, as disclosed in the table in this proposal and as further described under the heading "The Merger—Interests of BTU's Directors and Executive Officers in the Merger—Employment and Change of Control Agreements with the BTU Executive Officers" are hereby APPROVED."

Approval of this proposal is not a condition to completion of the merger, and the vote with respect to this proposal is advisory only and will not be binding on BTU or Amtech. If the merger is completed, the "golden parachute" compensation may be paid to BTU's named executive officers even if BTU stockholders fail to approve the "golden parachute" compensation.

Public Trading Markets

Amtech common stock is listed for trading on NASDAQ under the symbol "ASYS", and BTU common stock is listed on NASDAQ under the symbol "BTUI". Upon completion of the merger, BTU common stock will no longer be quoted on NASDAQ. Following the merger, shares of Amtech common stock will continue to be traded on NASDAQ.

Under the merger agreement, Amtech will cause the shares of Amtech common stock to be issued in the merger, including with respect to BTU stock options and BTU restricted stock, to be approved for listing on NASDAQ, subject to notice of issuance, and the merger agreement provides that neither Amtech nor BTU will be required to complete the merger if such shares are not authorized for listing on NASDAQ, subject to notice of issuance.

Amtech's Dividend Policy

Amtech has never paid dividends on Amtech common stock. Amtech's present policy is to apply cash to investment in product development, acquisition or expansion; consequently, Amtech does not expect to pay dividends on Amtech common stock in the foreseeable future.

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Dissenters' Rights in the Merger

Under Section 262 of the DGCL, the holders of BTU common stock will not be entitled to appraisal rights or dissenters' rights in connection with the merger if, on the record date for the BTU special meeting, their shares are listed on a national securities exchange. BTU common stock is currently listed on NASDAQ, a national securities exchange, and is expected to continue to be so listed on the record date for the BTU special meeting. Accordingly, holders of BTU common stock are not expected to be entitled to any appraisal rights or dissenters' rights in connection with the merger.

Delisting and Deregistration of BTU Common Stock

If the merger is completed, BTU common stock will be delisted from NASDAQ and deregistered under the Exchange Act, and BTU will no longer file periodic reports with the SEC.

Litigation Relating to the Merger

Shortly after Amtech and BTU entered into the merger agreement on October 21, 2014, the parties learned that two separate putative stockholder class action complaints were filed in the Court of Chancery of the State of Delaware. The first was filed on November 4, 2014, purportedly on behalf of BTU's public stockholders, against BTU, the members of the BTU board of directors, Amtech and Merger Sub. The complaint generally alleges, among other things, that the members of BTU's board of directors breached their fiduciary duties owed to BTU's public stockholders by causing BTU to enter into the merger agreement and by approving the merger, and that Amtech and Merger Sub aided and abetted such alleged breaches of fiduciary duties. In addition, the complaint alleges that the merger agreement improperly favors Amtech and unduly restricts BTU's ability to negotiate with other potential bidders. The complaint generally seeks, among other things, declaratory and injunctive relief concerning the alleged fiduciary breaches, injunctive relief prohibiting Amtech, Merger Sub, and BTU from consummating the merger, other forms of equitable relief, and compensatory damages. BTU and Amtech believe that the claims are without merit, and each party intends to defend against the litigation vigorously on behalf of itself and on behalf of its board of directors.

The second lawsuit was filed on November 17, 2014, also purportedly on behalf of BTU's public stockholders, against BTU, members of the BTU board, Amtech and Merger Sub. The complaint generally alleges, among other things, that the members of BTU's board of directors breached their fiduciary duties owed to BTU's public stockholders by failing to engage in a competitive sale and bidding process, and that Amtech and Merger Sub aided and abetted such alleged breaches of fiduciary duties. The complaint further alleges that these fiduciary breaches gave Amtech an unfair advantage by failing to solicit other potential acquirers. The complaint generally seeks, among other things, injunctive relief prohibiting the defendants from consummating the merger, compensatory damages for alleged breaches of fiduciary duties, and other forms of equitable relief. Each of BTU and Amtech also believes these claims are without merit, and intends to defend against the litigation vigorously.

THE MERGER AGREEMENT

The following describes certain aspects of the merger, including certain material provisions of the merger agreement. The following description of the merger agreement is subject to, and qualified in its entirety by reference to, the merger agreement, which is attached to this joint proxy statement/prospectus as Annex A and is incorporated by reference into this joint proxy statement/prospectus. We urge you to read the merger agreement carefully and in its entirety, as it is the legal document governing the merger.

Structure of the Merger

Each of Amtech's and BTU's respective boards of directors has approved the merger agreement. The merger agreement provides for the merger of Merger Sub with and into BTU, with BTU surviving as a wholly owned subsidiary of Amtech.

Merger Consideration

Each share of BTU common stock issued and outstanding immediately prior to the completion of the merger, except for specified shares of BTU common stock held by BTU or Amtech, will be converted into the right to receive 0.3291 shares of Amtech common stock. This exchange ratio is fixed and will not be adjusted to reflect changes in the market price of the Amtech common stock. As a result, the value of the merger consideration will fluctuate with the market price of the Amtech common stock until the completion of the merger. Based on the closing price of Amtech's common stock on the NASDAQ STOCK MARKET, or NASDAQ, on October 21, 2014, the last trading day before public announcement of the merger, the 0.3291 exchange ratio represented approximately \$3.33 in value for each share of BTU common stock. We make no assurances as to whether or when the merger will be completed or, if completed, as to the market price of the Amtech's common stock at the time of the merger or any time thereafter. **We urge you to obtain current market quotations for Amtech (trading symbol "ASYS") and BTU (trading symbol "BTUI").**

If, before the effective time of the merger, the outstanding shares of Amtech common stock or BTU common stock are increased, decreased, changed into or exchanged for a different number of shares or different class of capital stock by reason of any reclassification, recapitalization, stock split (including reverse stock split) or combination, exchange or readjustment of shares, or any stock dividend or distribution paid in stock, the exchange ratio and any other amounts payable pursuant to the merger agreement will be appropriately adjusted to reflect such change.

Fractional Shares

Amtech will not issue any fractional shares of Amtech common stock in the merger. Instead, a BTU stockholder who otherwise would have received a fraction of a share of Amtech common stock will receive a whole share of Amtech common stock.

Governing Documents; Directors and Officers

At the effective time of the merger, the certificate of incorporation and bylaws of BTU shall be amended so as to read in their entirety as the certificate of incorporation and bylaws of the Merger Sub as in effect immediately prior to the effective time, except that references to Merger Sub's name shall be replaced by references to "BTU International, Inc.", until thereafter amended in accordance with applicable law. Also at the effective time, the number of directors on the board of directors of BTU will be three and will include J.S. Whang (Amtech's Executive Chairman), Fokko Pentinga (Amtech's President and Chief Executive Officer), and Bradley C. Anderson (Amtech's Executive Vice President, Finance, Chief Financial Officer, Treasurer, and Secretary). Mr. Paul J. van der Wansem, BTU's current President, Chief Executive Officer, and Chairman of the Board of Directors, will also be appointed to the board of directors of Amtech.

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Treatment of BTU Stock Options and Other Equity-Based Awards

Options

At the effective time of the merger, each outstanding option to purchase shares of BTU common stock will be converted into an option to purchase Amtech common stock on the same terms and conditions as were applicable prior to the merger (taking into account any acceleration or vesting by reason of the consummation of the merger and its related transactions), except that (i) the number of shares of Amtech common stock subject to the new option will be equal to the product of the number of shares of BTU common stock subject to the existing option and the exchange ratio (rounding fractional shares down to the nearest whole share), and (ii) the exercise price per share of Amtech common stock under the new option will be equal to the exercise price per share of BTU common stock of the existing option divided by the exchange ratio (rounded up to the nearest whole cent).

Restricted Stock

Immediately before the effective time of the merger, each outstanding restricted stock unit of BTU will be converted into a fully vested and unrestricted share of BTU common stock.

Closing and Effective Time of the Merger

The merger will be completed only if all conditions to the merger discussed in this joint proxy statement/prospectus and set forth in the merger agreement are either satisfied or waived.

The merger will become effective as set forth in the certificate of merger to be filed with the Secretary of State of the State of Delaware. The closing of the transactions contemplated by the merger will occur at 10:00 a.m., Mountain Standard time on a date no later than three business days after the satisfaction or waiver of the last to occur of the conditions set forth in the merger agreement, unless extended by mutual agreement of the parties. It currently is anticipated that the completion of the merger will occur in the first calendar quarter of 2015, subject to other customary closing conditions, but neither BTU nor Amtech can guarantee when or if the merger will be completed.

Conversion of Shares; Exchange of Certificates

The conversion of BTU common stock into the right to receive the merger consideration will occur automatically at the effective time of the merger. After completion of the merger, the exchange agent will exchange certificates representing shares of BTU common stock for the merger consideration to be received pursuant to the terms of the merger agreement.

Letter of Transmittal

As promptly as practicable after the completion of the merger, the exchange agent will mail to each holder of record of BTU common stock immediately prior to the effective time of the merger a letter of transmittal and instructions on how to surrender shares of BTU common stock in exchange for the merger consideration the holder is entitled to receive under the merger agreement.

If a certificate for BTU common stock has been lost, stolen or destroyed, the exchange agent will issue the merger consideration upon receipt of (1) an affidavit of that fact by the claimant and (2) if required by Amtech, the posting of a bond in an amount as Amtech may determine is reasonably necessary as indemnity against any claim that may be made against it with respect to such certificate.

After completion of the merger, there will be no further transfers on the stock transfer books of BTU of shares of BTU common stock that were issued and outstanding immediately prior to the effective time.

Withholding

Amtech and the exchange agent will be entitled to deduct and withhold from any merger consideration payable under the merger agreement to any BTU stockholder the amounts they are required to deduct and withhold under the Code or any provision

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of state, local or foreign tax law. If any such amounts are withheld and paid over to the appropriate governmental authority, these amounts will be treated for all purposes of the merger agreement as having been paid to the stockholders from whom they were withheld.

Dividends and Distributions

No dividends or other distributions declared with respect to Amtech common stock will be paid to the holder of any unsurrendered certificates of BTU common stock until the holder surrenders such certificate in accordance with the merger agreement. After the surrender of a certificate in accordance with the merger agreement, the record holder thereof will be entitled to receive any such dividends or other distributions, without any interest, which had previously become payable with respect to the whole shares of Amtech common stock which the shares of BTU common stock represented by such certificate have been converted into the right to receive under the merger agreement.

Representations and Warranties

The representations, warranties and covenants described below and included in the merger agreement were made only for purposes of the merger agreement and as of specific dates, are solely for the benefit of Amtech, Merger Sub and BTU, may be subject to limitations, qualifications or exceptions agreed upon by the parties, including those included in confidential disclosures made for the purposes of, among other things, allocating contractual risk between Amtech and BTU rather than establishing matters as facts, and may be subject to standards of materiality that differ from those standards relevant to investors. You should not rely on the representations, warranties, covenants or any description thereof as characterizations of the actual state of facts or condition of Amtech, BTU or any of their respective subsidiaries or affiliates. Moreover, information concerning the subject matter of the representations, warranties and covenants may change after the date of the merger agreement, which subsequent information may or may not be fully reflected in public disclosures by Amtech or BTU. The representations and warranties and other provisions of the merger agreement should not be read alone, but instead should be read only in conjunction with the information provided elsewhere in this joint proxy statement/prospectus and in the documents incorporated by reference into this joint proxy statement/prospectus. See “Where You Can Find More Information.”

The merger agreement contains customary representations and warranties of each of Amtech and BTU relating to their respective businesses. The representations and warranties in the merger agreement do not survive the effective time of the merger.

The merger agreement contains representations and warranties made by each of BTU and Amtech relating to a number of matters, including the following:

- corporate matters, including due organization and qualification and subsidiaries;
- capitalization;
- authority relative to execution and delivery of the merger agreement and the absence of conflicts with, or violations of, organizational documents or other obligations as a result of the merger;
- required governmental and other regulatory filings and consents and approvals in connection with the merger;
- financial statements, internal controls, books and records, and absence of undisclosed liabilities;
- broker’s fees payable in connection with the merger;
- the absence of certain changes or events;
- legal proceedings;
- tax matters;
- employee benefit matters and other labor matters;

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- SEC reports;
- compliance with applicable laws;
- certain material contracts;
- absence of agreements with regulatory authorities;
- environmental matters;
- real property;
- intellectual property;
- related and interested party transactions;
- inapplicability of takeover statutes;
- absence of action or circumstance that would prevent the merger from qualifying as a reorganization under Section 368(a) of the Internal Revenue Code;
- opinions from financial advisors;
- the accuracy of information supplied for inclusion in this joint proxy statement/prospectus and other similar documents; and
- insurance matters.

Certain representations and warranties of Amtech and BTU are qualified as to “materiality” or “material adverse effect.” For purposes of the merger agreement, a “material adverse effect,” when used in reference to either BTU or Amtech, means a material adverse effect on the business, results of operations, prospects, assets, or condition (financial or otherwise) of such party and its subsidiaries taken as a whole; provided that a material adverse effect will not be deemed to include the impact of (A) changes generally affecting the economy, financial or securities markets; (B) the announcement of the transactions contemplated by or compliance with the terms of the merger agreement; (C) any outbreak or escalation of war or any act of terrorism; (D) general conditions in the industry in which such party and its subsidiaries operate; (E) any change in laws, rules, or regulations of general applicability or the interpretation thereof or GAAP or the interpretation thereof; or (F) disclosures in such party’s exceptions to its respective disclosures; except, with respect to subclauses (A), (C), (D) or (E), to the extent that the effects of such change are materially disproportionately adverse to such party and its subsidiaries, taken as a whole, as compared to other companies in the industry in which such party and its subsidiaries operate.

Covenants and Agreements

Conduct of Businesses Prior to the Completion of the Merger

Each of BTU and Amtech has agreed that, prior to the effective time of the merger (or earlier termination of the merger agreement), subject to specified exceptions, it will, and will cause each of its subsidiaries to, (a) conduct its business in the ordinary course in all material respects, and (b) use reasonable best efforts to maintain and preserve intact its business organization, employees, advantageous business relationships (including with its customers and suppliers), permits, and to retain the services of its key officers and key employees.

Additionally, prior to the effective time of the merger (or earlier termination of the merger agreement), subject to specified exceptions, neither Amtech nor BTU may, and neither may permit any of their respective subsidiaries to, without the prior written consent of the other party (such consent not to be unreasonably withheld), undertake the following actions:

- (i) other than dividends and distributions by a subsidiary, declare, set aside or pay any dividends on, make any other distributions in respect of, or enter into any agreement with respect to the voting of, any of its capital stock; (ii) split, combine or reclassify any of its capital stock or issue or authorize the issuance of any other securities in respect of, in lieu of, or in substitution for, shares of its capital stock, except upon the exercise of stock options or settlement of stock units that are outstanding as of the date of the merger agreement in accordance with their present terms; or (iii) purchase, redeem or otherwise acquire any shares of its capital stock or other securities or any of its subsidiaries, or any rights, warrants or

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options to acquire any such shares or other securities (other than the withholding of shares of common stock to satisfy the exercise price or tax withholding upon the exercise of stock options, vesting of restricted shares or settlement of stock units, in each case that are outstanding as of the date of the merger agreement in accordance with their present terms);

- amend its articles of incorporation, bylaws or other comparable organizational documents or the organizational documents of any of its subsidiaries;
- acquire or agree to acquire by merging or consolidating with, or by purchasing any assets or any equity securities of, or by any other manner, any business, or otherwise acquire or agree to acquire any assets in each case, except for acquisitions of inventory or other assets (other than property, plant and equipment) in the ordinary course of business consistent with past practice; provided, however, that no acquisition otherwise permitted by the foregoing may be made to the extent it may reasonably be expected to prevent, materially delay or materially impede the consummation of the transactions contemplated by the merger agreement;
- sell, assign, transfer, lease, license, mortgage or otherwise encumber or subject to any lien (other than permitted liens), or otherwise dispose of any of its properties or assets or create any security interest in such assets or properties that (i) in the case of BTU, have a fair market value in excess of \$150,000 in the aggregate, or (ii) in the case of Amtech, would have or reasonably be expected to have a material adverse effect on Amtech, in each case, other than in the ordinary course of business consistent with past practice;
- except for borrowings under its existing credit agreements that are incurred in the ordinary course of business consistent with past practice (or solely with respect to BTU, indebtedness owed by any wholly owned subsidiary), incur, redeem, prepay, repurchase, defease, cancel, or modify the terms of, any indebtedness or assume, guarantee or endorse, or otherwise become responsible for the indebtedness of any person (other than any of its wholly owned subsidiaries);
- except as required by agreements or instruments in effect on the date of the merger agreement, alter in any material respect, fail to satisfy or enter into any commitment to alter in any material respect, any material interest in any corporation, association, joint venture, partnership or business entity in which it directly or indirectly holds any equity or ownership interest on the date of the merger agreement;
- take any action, or knowingly fail to take any action within its control, which action or failure to act would reasonably be expected to prevent the merger from qualifying as a “reorganization” within the meaning of Section 368(a) of the Internal Revenue Code;
- adopt or enter into a plan of complete or partial liquidation, dissolution, merger, consolidation, restructuring, recapitalization or other reorganization of itself or any of its subsidiaries (other than the merger);
- fail to comply in all material respects with the Securities Act, the Exchange Act or the Sarbanes-Oxley Act in respect of all documents filed with or furnished to the SEC; or
- commit or agree to take any of the actions contemplated above.

In addition, prior to the effective time of the merger (or earlier termination of the merger agreement), and subject to specified exceptions, BTU may not, and may not permit any of its subsidiaries to, undertake the following actions without the prior written consent of Amtech:

- issue, deliver, sell, pledge or otherwise encumber or subject to any lien any shares of its capital stock, any other voting securities, including any restricted shares of its common stock, or any securities convertible into, or any rights, warrants or options to acquire, any such shares, voting securities or convertible securities, including any stock options and unit awards (other than (i) the issuance of its common stock upon the exercise of stock options or vesting of restricted shares, in each case that are outstanding as of the date of the merger agreement in accordance with their present terms; or (ii) the issuance of up to 120,000 stock options (but, for the avoidance of doubt, not restricted stock units) to employees in the ordinary course of business consistent with past practice);
- make any loans or advances to any person other than its wholly owned subsidiaries or as a result of ordinary advances and reimbursements to employees;
- change in any material respect its accounting methods (or underlying assumptions), principles or practices affecting its assets, liabilities or business, including any reserving, renewal or residual method, practice or policy, in each case, in effect on the date of the merger agreement, except as required by changes in GAAP or regulatory accounting principles;

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- make investments in persons (other than in any of its wholly owned subsidiaries or any related entity) in excess of \$150,000 in the aggregate, whether by purchase of stock or securities, contributions to capital, property transfers, or entering into binding agreements with respect to any such investment or acquisition;
- make, change or revoke any material tax election, change an annual tax accounting period, adopt or change any material tax accounting method, file any material amended tax return, enter into any closing agreement with respect to a material amount of taxes, settle any material claim or assessment from a taxing authority or surrender any right to claim a refund of a material amount of taxes;
- except as expressly permitted, terminate or waive any material provision of any material contract other than normal renewals of such contracts without materially adverse changes, additions or deletions of terms, or enter into or renew any agreement or contract or other binding obligation of such entity or its subsidiaries containing (i) any restriction on the ability of BTU and its subsidiaries, or, after the merger, Amtech and its subsidiaries (including BTU), to conduct their businesses as presently conducted or currently contemplated to be conducted after the merger or (ii) any restriction BTU and its subsidiaries, or, after the merger, Amtech and its subsidiaries (including BTU), in engaging in any type of activity or business;
- (i) incur any capital expenditures or (ii) enter into any contract obligating BTU (or any of its subsidiaries) to make capital expenditures, except, in each case, for (x) capital expenditures made in accordance with such party's existing capital plan for 2014 as in effect as of the date of the merger agreement; or (y) to the extent not reflected on such capital plan, capital expenditures not in excess of \$150,000 in the aggregate;
- except as required by the terms of BTU benefit plans or BTU employment agreements as in effect on the date of the merger agreement or as required by applicable law, or as in the ordinary course of business consistent with past practice, (i) grant or pay to any current or former director, officer, employee or consultant of BTU or any of its subsidiaries any increase in compensation, except for annual or promotional salary or wage increases in the ordinary course of business consistent with past practice not to exceed, in the aggregate for all such increases, 10% of the aggregate wage and salary expense for the prior year to BTU and its subsidiaries on a consolidated basis; (ii) grant, pay, promise to pay, or enter into any BTU benefit plan or BTU employment agreement to pay, to any current or former director, officer, employee, consultant or service provider of BTU or any of its subsidiaries any severance, retention, change in control or termination pay or any increase in actual or potential severance, retention, change in control or termination pay; (iii) increase the compensation or benefits provided or payable under any BTU benefit plan or BTU employment agreement; (iv) modify the terms of any equity-based award granted under any BTU stock plan; (v) make any discretionary contributions or payments with respect to any BTU benefit plan or BTU employment agreement to any trust or other funding vehicle; (vi) accelerate the payment or vesting of any payment or benefit provided or to be provided to any director, officer, employee or consultant of BTU or any of its subsidiaries or otherwise pay any amounts not due such individual; (vii) enter into any new or amend or modify any existing BTU employment agreement, other than employment agreements for new hires with an annual compensation not exceeding \$150,000 in the aggregate; (viii) establish any new or amend or modify any existing BTU benefit plans; or (ix) establish, adopt or enter into any collective bargaining agreement;
- pay, discharge, settle, waive, release or assign or compromise any legal action, litigation, arbitration, suit, investigation or proceeding, other than any such payment, discharge, settlement or compromise (i) that involves solely money damages in an amount not in excess of \$150,000 in the aggregate, and that does not create binding precedent for other pending or potential legal action, litigation, arbitration or proceeding, or (ii) pursuant to the terms of any contract in effect on the date of the merger agreement;
- fail to maintain in full force and effect the material insurance policies covering such company and its subsidiaries and their respective properties, assets and business in a form and amount consistent with past practices;
- enter into any hedging contracts not in the ordinary course of business consistent with past practice;
- purchase or otherwise acquire, directly or indirectly (including by way of providing financing), any equity interests in Amtech or any of Amtech's subsidiaries; or
- commit or agree to take any of the actions contemplated above.

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Employee Benefit Matters

The merger agreement requires Amtech to provide, or cause Merger Sub to provide, each BTU employee with compensation and benefits that are the same or substantially comparable in the aggregate to those provided to such employee immediately prior to the effective time of the merger.

The merger agreement also requires Amtech (or Merger Sub) to do the following with respect to the continuing employees of BTU and its respective subsidiaries:

- to recognize all service of such employees for all purposes in any new benefit plan adopted by Amtech or Merger Sub to the same extent that such service was taken into account under the analogous BTU benefit plan prior to the completion of the merger, subject to certain limitations; and
- to use commercially reasonable efforts to cause each new or existing Amtech (or Amtech subsidiary) plan into which BTU employees are assumed, to (i) waive any preexisting condition limitations to the extent such conditions are covered under the applicable life, disability, medical, health or dental plans, (ii) honor under such plans any deductible, co-payment and out-of-pocket expenses incurred by such employees and their beneficiaries during the portion of the calendar year prior to such participation and (iii) waive any waiting period limitation or evidence of insurability requirement which would otherwise be applicable to such employee on or after the effective time for the year in which the effective time or participation in such plans, as applicable, occurs

Amtech has agreed to honor benefits vested as of the date of the merger agreement under certain BTU benefit plans and employment and change in control agreements.

Unless Amtech notifies BTU to the contrary, the merger agreement requires BTU to terminate the BTU 401(k) savings and retirement plan immediately prior to the effective time.

Director and Officer Indemnification and Insurance

The merger agreement requires Amtech and BTU to cooperate and use their best efforts to indemnify and defend any covered director or officer of BTU (or any of its subsidiaries) who is, or is threatened to be, made a party to any threatened or actual action, whether civil, criminal, or administrative, based in whole or in part on, or arising or pertaining to (i) the fact that he is or was a director or officer of BTU or any of its subsidiaries, (ii) all acts or omissions by him taken at the request of BTU or any of its subsidiaries at any time prior to the effective time, or (iii) the merger agreement or any of the transactions contemplated thereby, whether asserted or arising before or after the effective time. After the effective time, Amtech is required to indemnify and hold harmless, as and to the fullest extent permitted under applicable law and the BTU organizational documents, such indemnified parties against any losses, claims, damages, liabilities, costs, expenses (including reimbursement for reasonable fees and expenses incurred in advance of the final disposition of any such action), judgments, fines and amounts paid in settlement in connection with any such threatened or actual Action.

For a period of six years after the effective time of the merger, unless required by law, no provision in any of BTU's organizational documents affecting indemnification, advancement of expenses, or exculpation may be amended, modified, or repealed in any manner that would adversely impact the rights or protections of any parties who, at the effective time of the merger, were current or former covered directors, officers, or employees of BTU or any of its subsidiaries.

The merger agreement also requires that BTU purchase and maintain for a period of six years after completion of the merger, a six year prepaid "tail policy" on terms and conditions (in both amount and scope) providing substantially equivalent benefits as the current policies of directors', officers' and employees' liability insurance maintained by BTU with respect to acts or omissions occurring prior to the effective time that were committed by such directors, officers and employees in their capacity as such.

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Certain Additional Covenants

The merger agreement also contains additional covenants, including, among others, covenants relating to the filing of this joint proxy statement/prospectus, obtaining required consents, the listing of the shares of Amtech common stock to be issued in the merger, access to information of the other company, exemption from takeover laws, BTU's obligation to provide further assurances and corrective measures with respect to certain matters (including ERISA matters and matters relating to BTU's operations in the People's Republic of China), and public announcements with respect to the transactions contemplated by the merger agreement.

Stockholder Meetings and Recommendation of BTU's and Amtech's Boards of Directors

Each of BTU and Amtech has agreed to hold a meeting of its stockholders for the purpose of voting upon adoption of the merger agreement as promptly as reasonably practicable. The boards of directors of each of BTU and Amtech has agreed to use their respective reasonable best efforts to obtain from their respective stockholders the vote required to adopt the merger agreement and, solely with respect to Amtech's stockholders, to approve the issuance of Amtech shares as consideration for the merger, including by communicating to its stockholders its recommendation (and including such recommendation in this joint proxy statement/prospectus) that they adopt and approve the merger agreement and the transactions contemplated thereby. Unless the merger agreement is validly terminated in accordance with its terms, both Amtech and BTU are required to submit the matters set forth above to their respective stockholders for approval.

Notwithstanding any change in recommendation by the board of directors of BTU or Amtech, unless the merger agreement has been terminated in accordance with its terms, each party is required to convene a meeting of its stockholders and to submit the merger agreement to a vote of such stockholders. Amtech and BTU must adjourn or postpone such meeting if there are insufficient shares of Amtech common stock or BTU common stock, as the case may be, represented (either in person or by proxy) to constitute a quorum necessary to conduct the business of such meeting, or if on the date of such meeting BTU or Amtech, as applicable, has not received proxies representing a sufficient number of shares necessary for adoption of the merger agreement.

Agreement Not to Solicit Other Offers

BTU has agreed that it will not, and will cause its subsidiaries and its and their officers, directors, agents, advisors and representatives to not, directly or indirectly, solicit, initiate or knowingly take any action to facilitate or encourage the submission of any takeover proposal, or, subject to certain exceptions, (i) conduct or engage in any discussions or negotiations with, disclose any non-public information relating to BTU or any of its subsidiaries to, afford access to the business, properties, assets, books or records of BTU or any of its subsidiaries to, or knowingly assist, participate in, facilitate or encourage any effort by, any third party that is seeking to make, or has made, any takeover proposal, (ii) (a) amend or grant any waiver (other than any waiver, as required by law, of any "don't ask don't waive" provisions of any standstill agreements now in effect) or release under any standstill or similar agreement with respect to any class of equity securities of BTU or any of its subsidiaries or (b) approve any transaction under, or any third party becoming an "interested stockholder" under, Section 203 of the DGCL, or (iii) enter into any agreement in principle, letter of intent, term sheet, acquisition agreement, merger agreement, option agreement, joint venture agreement, partnership agreement or other Contract relating to any takeover proposal.

For purposes of the merger agreement, a "takeover proposal" means a proposal or offer from, or indication of interest in making a proposal or offer by, any person other than Amtech and its subsidiaries (including Merger Sub) relating to any (i) direct or indirect acquisition of assets of BTU or any of its subsidiaries (including any voting equity interests of subsidiaries, but excluding sales of assets done in the ordinary course of business) equal to 25% or more of the fair market value of BTU's consolidated assets or to which 25% or more of BTU's net revenues or net income on a consolidated basis are attributable, (ii) direct or indirect acquisition of 25% or more of the voting equity interests of BTU, (iii) tender offer or exchange offer that would result in any person beneficially owning (within the meaning of Section 13(d) of the Exchange Act) 25% or more of the voting equity interests of BTU, (iv) merger, consolidation, other business combination or similar transaction involving BTU or any of its subsidiaries, pursuant to which such person would own 25% or more of the consolidated assets, or net revenues of BTU, taken as a whole, or (v) liquidation or dissolution (or the adoption of a plan of liquidation or dissolution) of BTU or the declaration or payment of an extraordinary dividend (whether in cash or other property) by BTU.

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In the absence of a bona fide, unsolicited takeover proposal, and prior to the receipt of the BTU stockholder approval, BTU is required to recommend the merger to its stockholders and is prohibited from (i) withdrawing, amending, modifying, or materially qualifying, in a manner adverse to Amtech or Merger Sub, the BTU board recommendation, (ii) failing to recommend against any takeover proposal within ten business days after the commencement of such an offer, (iii) recommending a takeover proposal, and (iv) making any public statement inconsistent with the BTU board recommendation. BTU has also agreed to, and to cause its officers, directors, agents, advisors and representatives to, immediately cease and terminate any activities, discussions or negotiations conducted before the date of the merger agreement with any person other than Amtech, with respect to any acquisition proposal. In addition, BTU has agreed to (a) promptly (and in any event, within 24 hours) advise Amtech following receipt of any acquisition proposal or any inquiry which could reasonably be expected to lead to an acquisition proposal, or any request for non-public information relating to BTU or its subsidiaries, and the substance of such proposal (including the terms and conditions of and the identity of the person making such inquiry or acquisition proposal), and to keep the other party apprised of any related developments, discussions and negotiations on a current basis, including any amendments to or revisions of the terms of such inquiry or acquisition proposal, and (b) provide Amtech with at least 48 hours prior notice of any meeting of BTU's board of directors at which the board is reasonably expected to consider any takeover proposal.

However, if, prior to obtaining the BTU stockholder approval, BTU receives an unsolicited bona fide written acquisition proposal, it may (subject to giving notice and information to Amtech as described in the preceding paragraph), participate in negotiations or discussions with the third party making the unsolicited takeover proposal if the BTU board believes, in good faith and after consulting with its outside legal counsel and its financial advisor, such proposal constitutes or would reasonably be expected to result in a proposal that is a superior proposal. For purposes of the merger agreement, a "superior proposal" means one more favorable from a financial point of view to the BTU stockholders than the transactions contemplated by the merger agreement with Amtech. Once this determination is properly made, BTU may furnish nonpublic information relating to BTU or its subsidiaries pursuant to an executed confidentiality agreement, and may change its recommendation in favor of the merger agreement with Amtech to a recommendation against the merger agreement with Amtech and in favor of the superior proposal. For the avoidance of doubt, BTU can engage in these activities only if BTU's board of directors determines in good faith, after consultation with outside legal counsel, that failing to take any of the actions described above would reasonably be expected to cause the BTU board to be in breach of its fiduciary duties under applicable law.

Termination Fee

BTU will pay Amtech a termination fee if the merger agreement is terminated in the following circumstances:

- If the merger agreement is terminated by Amtech because BTU or the board of directors of BTU (A) (1) fails to recommend in this joint proxy statement/prospectus that the stockholders of BTU adopt the merger agreement, or withdraws, amends, modifies or materially qualifies such recommendation in a manner adverse to Amtech or Merger Sub, (2) recommends or endorses a takeover proposal, (3) fails to recommend against acceptance of any tender offer or exchange offer for the shares of BTU common stock constituting a takeover proposal within ten business days after the commencement of such offer, (4) makes any public statement inconsistent with the BTU board recommendation in favor of the merger; or (5) resolves or agrees to take any of the foregoing actions; (B) permits BTU to enter into, or publicly announces its intention to enter into, any agreement or any contract relating to any takeover proposal; (C) fails to reaffirm (publicly, if requested by Amtech) its recommendation in favor of the merger within ten business days after the date any takeover proposal (or material modification thereto) is first publicly disclosed; (D) receives a tender offer or exchange offer for outstanding BTU common stock by a person unaffiliated with Amtech and does not send to its stockholders, within ten business days after such tender or exchange offer is first disclosed, a statement reaffirming the BTU board recommendation in favor of the merger with Amtech and recommending that BTU stockholders reject such tender or exchange offer; or (E) publicly announces its intentions to do any of the preceding acts;
- If the merger agreement is terminated by BTU because, prior to the receipt of the BTU stockholder approval, the BTU board of directors authorizes BTU to enter into any agreement or contract relating to a superior proposal; or
- If the merger agreement is terminated (A) by Amtech because BTU has breached any representation, warranty, covenant, or agreement such that the conditions to closing the merger would not be satisfied, and such breach is incapable of being cured by the outside date (i.e., 120 days following the date this joint proxy statement/prospectus is filed with the SEC) and the BTU stockholder approval has not been obtained at the BTU stockholders meeting (or any adjournment or postponement

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thereof); provided, that Amtech gives BTU at least 30 days written notice prior to terminating the merger agreement, and provided, further, that Amtech cannot terminate the merger agreement if Amtech is then in material breach of any of its representations, warranties, covenants, or agreements; (B) by Amtech or BTU if (1) the merger has not been consummated on or before the outside date; provided, that Amtech hasn't materially breached any of its obligations in any manner that proximately causes or results in the failure of the merger to have been consummated by the outside date, and the BTU stockholder approval has not been obtained at the BTU stockholders meeting (or any adjournment or postponement thereof); or (2) by Amtech if the Amtech merger proposal is not approved by the Amtech stockholders because the BTU stockholder approval has not been obtained at the BTU stockholders meeting (or any adjournment or postponement thereof) and, in the case of termination pursuant to (A) or (B) immediately above, (i) prior to such termination (in the case of termination pursuant to clause (A) or (B)(1)), or prior to the BTU stockholders meeting (in the case of termination pursuant to clause (B)(2)), a takeover proposal shall (x) in the case of a termination pursuant to clauses (B)(1) or (B)(2) above, have been publicly disclosed and not withdrawn, or (y) in the case of a termination pursuant to clause (A) above, have been publicly disclosed or otherwise made or communicated to BTU or the BTU board of directors and not withdrawn, and (ii) within 12 months following the date of such termination of the merger agreement, BTU enters into a definitive agreement with respect to any takeover proposal, or any takeover proposal is consummated (it being understood that, for purposes of the foregoing as applied to a BTU takeover proposal, all references in the definition of takeover proposal to 25% will instead refer to "more than 50%").

Amtech will pay BTU a termination fee if the merger agreement is terminated in the following circumstances (which are analogous to those described above):

- If the merger agreement is terminated by BTU because Amtech fails to recommend in this joint proxy statement/prospectus that the stockholders of Amtech adopt the merger agreement, or withdraws, amends, modifies or materially qualifies such recommendation in a manner adverse to BTU, or makes any public statement inconsistent with the Amtech board recommendation in favor of the merger; or
- If the merger agreement is terminated (A) by BTU because Amtech has breached any representation, warranty, covenant, or agreement such that the conditions to closing the merger would not be satisfied, and such breach is incapable of being cured by the outside date and the Amtech stockholder approval has not been obtained at the Amtech stockholders meeting (or any adjournment or postponement thereof); provided, that BTU gives Amtech at least 30 days written notice prior to terminating the merger agreement, and provided, further, that BTU cannot terminate the merger agreement if BTU is then in material breach of any of its representations, warranties, covenants, or agreements; (B) by BTU or Amtech if (1) the merger has not been consummated on or before the outside date; provided, that BTU hasn't materially breached any of its obligations in any manner that proximately causes or results in the failure of the merger to have been consummated by the outside date, and the Amtech stockholder approval has not been obtained at the Amtech stockholders meeting (or any adjournment or postponement thereof); or (2) by BTU if the BTU merger proposal is not approved by the BTU stockholders because the Amtech stockholder approval has not been obtained at the Amtech stockholders meeting (or any adjournment or postponement thereof) and, in the case of termination pursuant to (A) or (B) immediately above, (i) prior to such termination (in the case of termination pursuant to clause (A) or (B)(1)), or prior to the Amtech stockholders meeting (in the case of termination pursuant to clause (B)(2)), a takeover proposal shall (x) in the case of a termination pursuant to clauses (B)(1) or (B)(2) above, have been publicly disclosed and not withdrawn, or (y) in the case of a termination pursuant to clause (A) above, have been publicly disclosed or otherwise made or communicated to Amtech or the Amtech board of directors and not withdrawn, and Amtech enters into a definitive agreement with respect to any takeover proposal, or any takeover proposal is consummated (it being understood that, for purposes of the foregoing as applied to an Amtech takeover proposal, all references in the definition of takeover proposal to 25% will instead refer to "50%"). In this case, payment of the termination fee from Amtech to BTU is required to be a condition to closing the transaction resulting from the Amtech takeover proposal that causes termination of the merger agreement with BTU.

For purposes of the merger agreement, the "termination fee" is an amount equal to \$1,320,000, payable by wire transfer of immediately available funds within two business days after termination. In addition, in the event that the merger agreement is terminated by either party because the other party's requisite stockholder approval is not obtained at the applicable stockholder meeting, then the party that failed to obtain the requisite stockholder vote shall pay to the other party an expense reimbursement fee, up to \$1,000,000. Such expense reimbursement shall also be by wire transfer of immediately available funds, within two business days after such termination.

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Expenses and Fees

Except as otherwise summarized above, all costs and expenses incurred in connection with the merger agreement and the transactions contemplated thereby will be paid by the party incurring such expenses.

Amendment, Waiver and Extension of the Merger Agreement

Subject to compliance with applicable law, the merger agreement may be amended by the parties at any time before or after approval of the matters presented in connection with merger by the stockholders of Amtech and BTU, except that after adoption of the merger agreement by the respective stockholders of Amtech or BTU, there may not be, without further approval of such stockholders, any amendment of the merger agreement that requires further approval under applicable law.

At any time prior to the completion of the merger, the parties may, to the extent legally allowed, extend the time for the performance of any of the obligations or other acts of the other party, waive any inaccuracies in the representations and warranties contained in the merger agreement or in any document delivered pursuant to the merger agreement, and waive compliance with any of the agreements or satisfaction of any conditions contained in the merger agreement, except that after adoption of the merger agreement by the respective stockholders of Amtech or BTU, there may not be, without further approval of such stockholders, any extension or waiver of the merger agreement or any portion thereof that requires further approval under applicable law.

Voting and Support Agreements

Simultaneous with the execution of the merger agreement, (i) Paul J. van der Wansem and certain persons and trusts affiliated with him, who in the aggregate own approximately 13.76% of the outstanding BTU common stock, entered into a voting and support agreement with Amtech pursuant to which Mr. van der Wansem and his affiliates who are a party thereto have agreed, among other things, to vote all of their BTU common stock in favor of the BTU merger proposal and the transactions contemplated thereby; and (ii) J.S. Whang, who owns in the aggregate approximately 1.00% of the outstanding Amtech common stock, entered into a voting and support agreement with BTU, pursuant to which such Mr. Whang agreed, among other things, to vote all of his Amtech common stock in favor of the Amtech merger proposal and the transactions contemplated thereby. Details of the voting and support agreements are provided in the summary below.

The following summary of the voting and support agreement between Amtech and Paul J. van der Wansem is subject to, and qualified in its entirety by reference to, the full text of the voting and support agreement executed by the parties. While the below summary details the material terms of the Amtech voting and support agreement with Mr. van der Wansem, the voting and support agreement between BTU and Mr. Whang contains materially and substantially similar terms to those summarized below and therefore are not summarized separately.

Pursuant to the voting and support agreement between Amtech and Paul J. van der Wansem, in his capacity as a stockholder of BTU, Mr. van der Wansem agreed to vote his shares of BTU common stock:

- in favor of the approval of the merger agreement;
- in favor of any other matter that is required to facilitate the consummation of the merger and the other transactions contemplated by the merger agreement, including without limitation any proposal to adjourn or postpone the BTU stockholder meeting, as applicable, to a later date if there are not sufficient votes to approve the merger agreement; and
- against any takeover proposal, any proposal made in opposition to or in competition with the merger, or would result in a breach of the merger agreement, or any other action involving BTU or any subsidiary of BTU that would reasonably be expected to have the effect of impeding, materially interfering with, materially delaying, materially postponing, or otherwise impairing the ability of BTU to consummate the merger.

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The voting and support agreement provides that Mr. van der Wansem will not, subject to certain exceptions, with respect to any shares of BTU common stock owned by him, take or agree or commit to do any of the following:

- sell, transfer, pledge, encumber, assign or otherwise dispose of, or enter into any contract, option or other arrangement or understanding with respect to the sale, transfer, pledge, encumbrance, assignment or other disposition of, or limitation on the voting rights of, any of his BTU shares;
- deposit any of his BTU shares into a voting trust or enter into a separate voting agreement with respect to such shares; or
- take any action, either directly or indirectly, that would cause any representation or warranty contained in his voting and support agreement to become untrue or incorrect, in each case, in any material respect, or would reasonably be expected to have the effect of preventing or disabling him from performing his obligations under the voting and support agreement.

The voting and support agreements will terminate upon the earlier of (i) the effective time of the merger, (ii) the valid termination of the merger agreement in accordance with its terms, (iii) the occurrence of an adverse recommendation change by either Amtech or BTU, and (iv) at the option of the applicable stockholder, the execution or granting of any amendment, modification, change or waiver with respect to the merger agreement subsequent to the date of the voting and support agreement that either results in any material decrease in, or material change in the form of, or imposes any material restrictions or additional material constraints on the payment of, the merger consideration.

Employment and Services Agreements

Simultaneous with the execution of the merger agreement, Amtech entered into an employment agreement with Paul J. van der Wansem, BTU's current President and Chief Executive Officer, and an amendment to an agreement regarding employment terms with Peter Tallian. These agreements set forth the terms and conditions of each such individual's employment or other relationship with Amtech and BTU, as applicable, following the effective time of the merger and will be effective upon and subject to the completion of the merger.

The principal terms of these agreements or amendments are summarized above in "The Merger—Interests of BTU's Directors and Executive Officers in the Merger" beginning on page 126.

ACCOUNTING TREATMENT

The accounting principles applicable to this transaction as described in FASB ASC 805-10-05-01 provide transactions that represent business combinations are to be accounted for under the acquisition method. The acquisition method requires all of the following steps: a) identifying the acquirer; b) determining the acquisition date; c) recognizing and measuring the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquiree; and d) recognizing and measuring goodwill or a gain from a bargain purchase.

The appropriate accounting treatment for this transaction is as a business combination under the acquisition method. On the acquisition date, as defined by ASC 805, Amtech (the acquirer) will record at fair value the identifiable assets acquired and liabilities assumed, any noncontrolling interest, and goodwill (or a gain from a bargain purchase). The results of operations for the combined company will be reported prospectively subsequent to the acquisition date.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES OF THE MERGER

The following general discussion set forth the anticipated material United States federal income tax consequences of the merger to U.S. holders (as defined below) of BTU common stock that exchange such stock for shares of Amtech common stock. This discussion does not address any tax consequences arising under the laws of any state, local or foreign jurisdiction, or under any United States federal laws other than those pertaining to income tax. This discussion is based upon the Internal Revenue Code of 1986, as amended (which we refer to as the “Code”), the U.S. Treasury regulations promulgated thereunder and judicial and administrative authorities, rulings and decisions, all as in effect as of the date of this joint proxy statement/prospectus. These authorities may change, possibly with retroactive effect, and any such change could affect the accuracy of the statements and conclusions set forth in this discussion.

The following discussion applies only to U.S. holders (as defined below) of shares of BTU common stock who hold such shares as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment). Further, this discussion does not purport to consider all aspects of U.S. federal income taxation that might be relevant to U.S. holders in light of their particular circumstances and does not apply to U.S. holders subject to special treatment under the U.S. federal income tax laws (such as, for example, dealers or brokers in securities, commodities or foreign currencies, traders in securities that elect to apply a mark-to-market method of accounting, banks and certain other financial institutions, insurance companies, mutual funds, tax-exempt organizations, holders subject to the alternative minimum tax provisions of the Code, partnerships, S corporations or other pass-through entities or investors in partnerships, regulated investment companies, real estate investment trusts, controlled foreign corporations, passive foreign investment companies, former citizens or residents of the United States, U.S. expatriates, holders whose functional currency is not the U.S. dollar, holders who hold shares of BTU common stock as part of a hedge, straddle, constructive sale or conversion transaction or other integrated investment, holders who acquired BTU common stock pursuant to the exercise of employee stock options, through a tax qualified retirement plan or otherwise as compensation, holders who exercise appraisal rights, or holders who actually or constructively own more than 5% of BTU common stock).

In addition, the discussion does not address any alternative minimum tax or any state, local or foreign tax consequences of the merger, nor does it address any tax consequences arising under the unearned income Medicare contribution tax pursuant to the Health Care and Education Reconciliation Act of 2010.

For purposes of this discussion, the term “U.S. holder” means a beneficial owner of BTU common stock that is for U.S. federal income tax purposes (1) an individual citizen or resident of the United States, (2) a corporation, or entity treated as a corporation for U.S. federal income tax purposes, organized in or under the laws of the United States or any state thereof or the District of Columbia, (3) a trust if (a) a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust or (b) such trust has made a valid election to be treated as a U.S. person for U.S. federal income tax purposes or (4) an estate, the income of which is includible in gross income for U.S. federal income tax purposes, regardless of its source.

If an entity or arrangement treated as a partnership for U.S. federal income tax purposes holds BTU common stock, the tax treatment of a partner in such partnership generally will depend on the status of the partner and the activities of the partnership. Any entity treated as a partnership for U.S. federal income tax purposes that holds BTU common stock, and any partners in such partnership, should consult their own independent tax advisors regarding the tax consequences of the merger to their specific circumstances.

Determining the actual tax consequences of the merger to you may be complex and will depend on your specific situation and on factors that are not within our control. You should consult your own independent tax advisor as to the specific tax consequences of the merger in your particular circumstances, including the applicability and effect of the alternative minimum tax and any state, local, foreign and other tax laws and of changes in those laws.

Tax Consequences of the Merger Generally

The parties intend for the merger to qualify as a “reorganization” within the meaning of Sections 368(a)(1)(A) and 368(a)(2)(E) of the Code. It is a condition to the obligations of Amtech and BTU to complete the merger that Amtech and BTU

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receive an opinion from Squire Patton Boggs (US) LLP and Pierce Atwood LLP, respectively, dated the closing date of the merger, to the effect that the merger will qualify as a “reorganization” within the meaning of Section 368(a) of the Code. These opinions will be based on facts, representations, warranties and covenants contained in representation letters provided by Amtech and BTU and on customary factual assumptions. Neither of the opinions described above will be binding on the Internal Revenue Service (which we refer to as the “IRS”) or any court. Amtech and BTU have not sought and will not seek any ruling from the IRS regarding any matters relating to the merger, and as a result, there can be no assurance that the IRS will not assert, or that a court would not sustain, a position contrary to any of the conclusions set forth below. In addition, if any of the representations or assumptions upon which those opinions are based are inconsistent with the actual facts, the U.S. federal income tax consequences of the merger could be adversely affected.

Provided the merger qualifies as a “reorganization” within the meaning of Sections 368(a)(1)(A) and 368(a)(2)(E) of the Code, upon exchanging your BTU common stock for Amtech common stock, you generally will not recognize gain or loss. The aggregate tax basis of the Amtech common stock that you receive in the merger will equal your aggregate adjusted tax basis in the shares of BTU common stock you surrender in the merger. Your holding period for the shares of Amtech common stock that you receive in the merger will include your holding period of the shares of BTU common stock that you surrender in the merger. If you acquired different blocks of BTU common stock at different times or at different prices, the Amtech common stock you receive will be allocated pro rata to each block of BTU common stock, and the basis and holding period of each block of Amtech common stock you receive will be determined on a block-for-block basis depending on the basis and holding period of the blocks of BTU common stock exchanged for such block of Amtech common stock.

This discussion of certain material U.S. federal income tax consequences is not intended to be, and should not be construed as, tax advice. Holders of BTU common stock are urged to consult their independent tax advisors with respect to the application of U.S. federal income tax laws to their particular situations as well as any tax consequences arising under the U.S. federal estate or gift tax rules, or under the laws of any state, local, foreign or other taxing jurisdiction or under any applicable tax treaty.

DESCRIPTION OF CAPITAL STOCK OF AMTECH

As a result of the merger, BTU stockholders who receive shares of Amtech common stock in the merger will become stockholders of Amtech. Your rights as stockholder of Amtech will be governed by Arizona law and the amended and restated Articles of incorporation of Amtech (which we refer to as the “Amtech articles”) and the amended and restated bylaws of Amtech (which we refer to as the (“Amtech bylaws”). The following briefly summarizes the material terms of Amtech common stock. We urge you to read the applicable provisions of the Arizona Business Corporation Act (which we refer to as the “Arizona business act”) and Amtech’s amended and restated articles of incorporation and Amtech’s amended and restated bylaws. Copies of Amtech’s and BTU’s governing documents have been filed with the SEC. To find out where copies of these documents can be obtained, see “Where You Can Find More Information” beginning on page 163.

Authorized Capital Stock

Amtech’s authorized capital stock consists of 100,000,000 shares of common stock, par value \$0.01 per share and 100,000,000 shares of preferred stock, par value 0.01 per share. As of the record date, there were [] shares of common stock issued and outstanding and no shares of Amtech preferred stock outstanding.

Common Stock

Listing

Amtech common stock is listed on NASDAQ and traded under the symbol “ASYS”. Following the merger, shares of Amtech common stock will continue to be traded on NASDAQ under the same symbol.

Dividend Rights

Payment of dividends is subject to the authorization, determination and declaration by the Amtech board of directors. Historically, Amtech has never paid dividends on Amtech common stock. Amtech’s current dividend policy is to apply cash to investment in product development, acquisition or expansion.

Voting Rights

Each share of Amtech common stock is entitled to one vote in each matter submitted to a vote at a meeting of stockholders, except with respect to the election of directors, for which stockholders are entitled to cumulative voting. Amtech stockholders may vote either in person or by proxy.

Preemptive and Other Rights

Other than as provided in the Amended and Restated Rights Agreement with Computershare Trust Company, N.A. (which we refer to as the “Rights Agreement”), the holders of Amtech common stock have no preemptive rights and have no other rights to subscribe for additional securities of Amtech under Arizona law, nor does Amtech common stock have any conversion rights or rights of redemption. Under the Rights Agreement, each right entitles the registered holder to purchase from Amtech one one-thousandth of a share of Series A Preferred attached to the then-outstanding common shares at an exercise price of \$51.60, subject to adjustment. The plan is set to expire on December 14, 2018. Upon liquidation, all holders of Amtech common stock are entitled to participate pro rata in Amtech’s assets available for distribution, subject to the rights of any other class of capital stock then outstanding.

For more information regarding the rights of holders of Amtech common stock, see “Comparison of Stockholders’ Rights” beginning on page 151.

Preferred Stock

Amtech’s amended and restated articles of incorporation authorizes Amtech’s board of directors, without further stockholder action, to issue up to 100,000,000 shares of preferred stock, which are issuable in series and on terms to be determined the

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Amtech's board of directors. Accordingly, Amtech's board of directors is authorized, without action by the stockholders, to issue preferred stock with such dividend, liquidation, conversion, voting and other rights, restrictions and limitations as it may determine. Amtech may amend from time to time the Amtech articles to increase the number of authorized shares of preferred stock. Any such amendment would require the approval of the holders of a majority of the common stock entitled to vote, without a vote of the holders of preferred stock, unless a vote of any such holders is required pursuant to the terms of any preferred stock designation. Amtech's board of directors has designated 540,000 shares as Series A Convertible Preferred Stock, but no shares of the Series A Convertible Preferred Stock are currently outstanding. As of the date of this joint proxy statement/prospectus, there are no shares of Amtech preferred stock outstanding.

COMPARISON OF STOCKHOLDERS' RIGHTS

If the merger is completed, holders of BTU common stock will receive shares of Amtech common stock in exchange for their shares of BTU common stock. Amtech is organized under the laws of the State of Arizona and BTU is organized under the laws of the State of Delaware. The following is a summary of the material differences between (1) the current rights of BTU stockholders under the DGCL and BTU's amended and restated certificate of incorporation and amended and restated bylaws and (2) the current rights of Amtech stockholders under the Arizona business act and Amtech's amended and restated articles of incorporation and Amtech's amended and restated bylaws.

Amtech and BTU believe that this summary describes the material differences between the rights of holders of Amtech common stock as of the date of this joint proxy statement/prospectus and the rights of holders of BTU common stock as of the date of this joint proxy statement/prospectus; however, it does not purport to be a complete description of those differences. Copies of Amtech's and BTU's governing documents have been filed with the SEC. To find out where copies of these documents can be obtained, see "Where You Can Find More Information" beginning on page 163.

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AUTHORIZED CAPITAL STOCK

Amtech's amended and restated articles of incorporation authorizes it to issue up to 100,000,000 shares of common stock, par value \$0.01 per share, and 100,000,000 shares of preferred stock. As of the record date for the Amtech special meeting, there were [] shares of Amtech common stock outstanding and no shares of Amtech preferred stock outstanding.

BTU's amended and restated certificate of incorporation authorizes it to issue up to 25,000,000 shares of common stock, par value \$0.01 per share, and 5,000,000 shares of preferred stock, par value \$1.00 per share. As of the record date for the BTU special meeting, there were [] shares of BTU common stock outstanding and no shares of BTU preferred stock outstanding.

VOTING LIMITATIONS

Amtech's shareholders are not subject to a voting limitation.

BTU's stockholders are not subject to a voting limitation.

SIZE OF BOARD OF DIRECTORS

Amtech's amended and restated bylaws currently provide that the size of Amtech's board of directors shall be 6, but that such number may be changed from time to time exclusively by a decision of the board of directors pursuant to a majority vote at a duly held meeting or a unanimous written consent of the Amtech board of directors. Amtech's board of directors currently has 6 directors.

BTU's amended and restated bylaws currently provide that the size of BTU's board of directors shall be one or more directors as determined by the board of directors. BTU's board of directors currently has 5 directors.

CLASSES OF DIRECTORS

Amtech's board of directors is not classified; all directors are elected annually.

BTU's board of directors is not classified; all directors are elected annually.

REMOVAL OF DIRECTORS

Amtech's stockholders may remove one or more directors at any time by a majority vote, with or without cause, but only at a duly held meeting for which such meeting's notice shall state that the

Under the DGCL, unless the certificate of incorporation states otherwise, directors may be removed with or without cause by a majority of the shares then entitled to vote in the election

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purpose or one of the purposes of the meeting is removal of the director. However, if less than the entire board is to be removed, a director shall not be removed if the number of votes sufficient to elect the director under cumulative voting is voted against the director's removal.

FILLING VACANCIES ON THE BOARD OF DIRECTORS

Vacancies, including newly created directorships that result in an increase in the size of authorized directors, may be filled by an affirmative vote of the majority of the remaining directors then in office, though not less than a quorum, or by a sole remaining director. The term of any director elected to fill a vacancy shall expire at the next annual election and until their successors are duly elected and qualified, unless sooner displaced.

SPECIAL MEETINGS OF STOCKHOLDERS

Special meetings of the stockholders of Amtech may be called at any time by the chairman of the board, the president or the board of directors, or by the written demand of at least fifty percent of all issued and outstanding shares of Amtech common stock entitled to vote at any meeting. Any written demand by shareholders shall state the purpose or purposes of the meeting, and business to be transacted at such meeting shall be confined to the purposes stated in such notice and to such additional matters as the chairman of the meeting may rule to be germane to the purposes stated in the notice.

QUORUM

Under Amtech's amended and restated bylaws, the presence in person or by proxy of the majority of the shares of a corporation issued, outstanding and entitled to vote at the meeting will constitute a quorum for all purposes. In the absence of a quorum, any meeting may be adjourned from time to time by its chairman, without notice other than by announcement at the meeting, until a quorum is formed. If an adjournment is for more than 30 days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each shareholder of record entitled to vote at the meeting.

NOTICE OF STOCKHOLDER MEETINGS

Amtech's amended and restated bylaws provide that written notice of the place, date, time and general purposes of all

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of such director. BTU's amended and restated certificate of incorporation does not state otherwise.

Under BTU's amended and restated bylaws, vacancies and any newly created directorships resulting from any increase in the number of directors may be filled by vote of the stockholders at a meeting called for the purpose, or by a majority of the directors then in office, although less than a quorum, or by a sole remaining director. When one or more directors shall resign from the board, effective at a future date, a majority of the directors then in office, including those who have resigned, shall have power to fill such vacancy or vacancies, the vote or action by writing thereon to take effect when such resignation or resignations shall become effective.

Under BTU's amended and restated bylaws, special meetings of the stockholders of BTU may be called at any time by the president or by the board of directors.

Under BTU's amended and restated bylaws, at any meeting of the stockholders, whether an original or an adjourned session, a quorum shall consist of a majority in interest of all stock issued and outstanding and entitled to vote at the meeting, except in any case where a larger quorum is required by law, by the certificate of incorporation or by the bylaws. Any meeting may be adjourned from time to time by a majority of the votes properly cast upon the question, whether or not a quorum is present.

Under BTU's amended and restated bylaws, a written notice of each meeting of stockholders stating the place, if any, day

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meetings of the stockholders must be given, not less than 10 and not more than 50 days (inclusive of the date of the meeting) before the date on which the meeting is to be held, to each stockholder of record entitled to vote at such meeting.

ADVANCE NOTICE OF STOCKHOLDER PROPOSALS

At any meeting of stockholders, proposals and persons nominated for election as directors by stockholders will be considered only if (1) advance written notice thereof has been timely given and (2) such proposals or nominations are otherwise proper for consideration under applicable law and the amended and restated articles of incorporation and amended and restated bylaws of Amtech.

Written notice of any proposal to be presented by any stockholder, or of the name of any person to be nominated by any stockholder for election as a director of Amtech at an annual meeting, must be delivered to Amtech's principal executive office not less than 120 calendar days prior to the date of the company's proxy statement released to shareholders in connection with the previous year's annual meeting; provided, however, that if Amtech did not hold an annual meeting the previous year, or if the date of this year's annual meeting has been changed more than 30 days from the date of the previous year's meeting, then the deadline is a reasonable time before the company begins to print the send its proxy materials. Such a notice must be accompanied by certain specified information, as set forth by applicable law. Written notice for a meeting other than a regularly scheduled annual meeting requires notice to be submitted a reasonable time before the Amtech begins to print and send its proxy materials.

ANTI-TAKEOVER PROVISIONS AND OTHER STOCKHOLDER PROTECTIONS

Under Section 10-2741 of the Arizona business act, Amtech is prohibited from engaging in a business combination with any interested stockholder of Amtech for a period of three years after the date the interested stockholder becomes interested, unless a

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and hour thereof and, in the case of a special meeting, the purposes for which the meeting is called, and the means of remote communication, if any, by which stockholders or proxyholders may be deemed to be present and vote at such meeting, shall be given not less than ten nor more than sixty days before the meeting, to each stockholder entitled to vote thereat, and to each stockholder who, by law, by the certificate of incorporation or by the bylaws, is entitled to notice. Such notice shall be given by the secretary or by an officer or person designated by the board of directors.

Under BTU's amended and restated bylaws, at any annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. In addition to any other applicable requirements and the other requirements of BTU's amended and restated bylaws and amended and restated certificate of incorporation, for business to be brought properly before an annual meeting by a stockholder, whether through inclusion in BTU's proxy materials or through the stockholder's independent proxy solicitation, the stockholder must have given timely notice thereof in writing to the chairman of the board, if any, the president or the secretary. To be timely, a stockholder's notice regarding the nomination of a person for election as a director or any other proposal shall be delivered to or mailed and received at the principal executive offices of BTU by the close of business on the Advance Notice Date. For the purposes of the bylaws, the "Advance Notice Date" shall be one of the following:

- (a) the date not less than 45 or more than 75 days before the anniversary date of the prior year's annual meeting, if (i) there was an annual meeting in the prior year and (ii) the date of the current year's annual meeting is not more than 30 days before or after the anniversary date of the prior year's annual meeting; or
- (b) if clause (a) does not apply, the date 90 days prior to the date of the current year's annual meeting or the 10th day following the day on which public announcement of the date of the current year's annual meeting is given or made.

Under the DGCL, a corporation can elect not to be governed by Section 203 of the DGCL, which generally protects publicly held Delaware corporations from unfair transactions and tactics by persons who acquire large blocks of stock

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disinterested committee of Amtech directors approves the business combination or a disinterested committee of Amtech directors approved the acquisition of shares that made the interested stockholder interested.

Under Section 10-2742 of the Arizona business act, Amtech is prohibited from engaging in a business combination with any interested stockholder following the three year anniversary of the interested stockholder becoming an interested stockholder of Amtech, other than in a business combination meeting one of the following requirements: (1) the consummation of the business combination is three years after the date the interested stockholder became interested, it is approved prior to the interested stockholder becoming interested, or the Amtech board of directors approved the acquisition of shares that made the interested stockholder interested prior to the acquisition date; (2) the stockholders, not including the interested stockholder, approve, by majority vote, the business combination at meeting called for that purpose no earlier than three years after the interested stockholder becomes interested; or (3) a business combination that meets certain other fair price requirements pursuant to the Arizona business act.

Under Section 10-2704 of the Arizona business act, Amtech is prohibited from purchasing, or agreeing to purchase, any shares from a beneficial owner of more than five percent of the voting power of Amtech for more than the average market price of the shares if the shares have been beneficially owned for less than three years, unless: (1) the stockholders, other than the beneficial owner, approve the purchase or (2) Amtech makes an equal offer to all holders of shares of such class and to all holders of any class into which the shares may be converted.

LIMITATION OF PERSONAL LIABILITY OF OFFICERS AND DIRECTORS

Amtech's amended and restated articles of incorporation provide that no director shall be personally liable to the corporation or its stockholders for monetary damages for breach of his or her fiduciary duty except for: (i) breaches of a director's duty of loyalty to the corporation; (ii) acts or omissions not in good faith or involving intentional misconduct or a knowing violation of law; (iii) acts arising from unlawful payments of dividends or unlawful stock purchase or redemption; or (iv) transactions from which a director derives an improper personal benefit.

INDEMNIFICATION OF DIRECTORS AND OFFICERS AND INSURANCE

Amtech's amended and restated articles of incorporation provide that Amtech shall indemnify any and all of its existing and former directors, officers, employees, and agents against all

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without prior board approval. BTU's amended and restated certificate of incorporation does not provide for any election in connection with Section 203 and, therefore, BTU is subject to the restrictions of Section 203 of the DGCL.

In general, Section 203 prohibits a publicly held Delaware corporation such as BTU from engaging in a "business combination" with an "interested" stockholder for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination or the transaction by which the person became an interested stockholder is approved in a prescribed manner. A "business combination" includes certain mergers, asset sales and other transactions resulting in a financial benefit to the interested stockholder. Subject to exceptions, an "interested" stockholder is a person who, alone or together with his affiliates and associates, owns 15 percent or more of the corporation's voting stock.

BTU's amended and restated certificate of incorporation provides that no director shall be liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except to the extent that exculpation from liability is not permitted under the DGCL as in effect at the time such liability is determined.

BTU's amended and restated bylaws provide that BTU shall indemnify each person who is or was a director or officer of BTU (including persons who serve at its request as directors,

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expenses incurred by them and each of them, including, but not limited to legal fees, judgments, penalties, and amounts paid in settlement or compromise, which may arise or be incurred, rendered, or levied in any legal action brought or threatened against any of them for or on account of any action or omission alleged to have been committed while acting within the scope of employment as director, officer, employee or agent of Amtech, whether or not any action is or has been filed against them and whether or not any settlement or compromise is approved by a court, indemnification shall be made by the corporation whether the legal action brought or threatened is by or in the right of Amtech or by any other person.

Whenever any existing or former director, officer, employee, or agent shall report to the president of the Amtech or the chairman of the board of directors that he or she has incurred or may incur expenses, including, but not limited to, legal fees, judgments, penalties, and amounts paid in settlement or compromise in a legal action brought or threatened against him or her for or on account of any action or omission alleged to have been committed by him or her while acting within the scope of his or her employment as a director, officer, employee or agent of the corporation, the board of directors shall, at its next regular or at a special meeting held within a reasonable time thereafter, determine in good faith, whether in regard to the matter involved in the action or contemplated action, such person acted, failed to act, or refused to act willfully or with gross negligence or with fraudulent or criminal intent. If the board of directors determines, in good faith, that such person did not act, fail to act, or refuse to act willfully or with gross negligence or with fraudulent or criminal intent in regard to the matter involved in the action or contemplated action, such person acted, failed to act, or refused to act willfully or with gross negligence or with fraudulent or criminal intent, indemnification shall be mandatory and shall be automatically extended as specified herein; provided, that Amtech shall have the right to refuse indemnification in any instance in which the person to whom indemnification would otherwise have been applicable shall have unreasonably refused to permit Amtech, at its own expense and through counsel of its own choosing, to defend him or her in the action.

Sections 10-851 and 10-856 of the Arizona business act provide indemnification to directors and officers so long as the individual acted in good faith and reasonably believed his or her action was in the best interests of Amtech. Amtech cannot, however, indemnify a director who is liable to Amtech or is involved in a proceeding regarding improper financial benefit. Further, pursuant to Section 10-852 of the Arizona business act, a corporation must indemnify a director who was the prevailing party in the defense of any proceeding to which the director was a party because the director is or was a director of the corporation against reasonable expenses incurred by the director

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officers, trustees, employees or agents of another organization) against expenses (including attorney's fees), judgments, fines and amounts paid in settlement to the maximum extent permitted from time to time under the DGCL. Such indemnification shall not be exclusive of other indemnification rights arising under any bylaw, agreement, vote of directors or stockholders or otherwise and shall inure to the benefit of the heirs and legal representatives of such person. BTU shall to the fullest extent not prohibited by applicable law pay the expenses (including attorneys' fees) incurred by a director in defending any proceeding in advance of the final disposition, provided, however, that to the extent required by law the payment of expenses in advance shall be made only upon receipt of an undertaking by the director to repay all amounts advanced if it should be ultimately determined that the director is not entitled to be indemnified under the bylaws or otherwise.

BTU has agreed to provide, for a period of six years after the effective date of the merger, insurance providing substantially equivalent benefits as the current policies of directors', officers' and employees' liability insurance maintained by BTU with respect to acts or omissions occurring prior to the effective time of the merger.

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in connection with the proceeding. Further, a corporation shall indemnify an outside director against liability, and shall pay expenses prior to a final disposition if the director furnishes the corporation a written affirmation that the director has acted in good faith and reasonably believed in the best interests of the corporation.

Under Section 10-857 of the Arizona business act, Amtech is permitted to purchase director and officer insurance. Amtech currently maintains director and officer insurance.

AMENDMENTS TO ARTICLES OF INCORPORATION AND BYLAWS

Under Section 10-1001 of the Arizona business act, Amtech may amend its articles of incorporation by a majority vote of those shareholders entitled to vote on such proposal.

Amtech's amended and restated bylaws provides that the bylaws may be altered, amended, supplemented, repealed or temporarily or permanently suspended, in whole or in part, or new bylaws may be adopted, at a duly held meeting of the board of directors or by unanimous written consent. This is consistent with Section 10-1020 of the Arizona business act.

ACTION BY WRITTEN CONSENT OF THE STOCKHOLDERS

Under Amtech's amended and restated bylaws, the stockholders may take any action permitted to be taken at a duly held meeting with the unanimous written consent of all of the shareholders entitled to vote with respect to the subject matter, in writing, setting forth the action so forth taken, and signed by all the shareholders entitled to vote.

STOCKHOLDER RIGHTS PLAN

On December 15, 2008, Amtech entered into The Rights Agreement with Computershare Trust Company, N.A., as rights agent, which amended and restated the terms governing the previously authorized shareholder rights to purchase fractional shares of Amtech's series A participating preferred stock currently attached to each of the outstanding common shares of Amtech. As amended, each right entitles the registered holder to purchase from Amtech one one-thousandth of a share of series A preferred at an exercise price of \$51.60, subject to adjustment. The plan is currently set to expire on December 14, 2018.

BTU

BTU's amended and restated certificate of incorporation may be amended in any manner permitted by law, with the exception that any amendment to paragraph D thereof (relating to the approval of certain business transactions, including mergers) requires the affirmative vote of the holders of at least two thirds of the outstanding shares of common stock. In addition, any amendment or repeal of Section 7 (relating to personal liability of directors for monetary damages) shall not apply to or have any effect on the liability of any director for or with respect to acts or omissions of such director occurring prior to such amendment or repeal.

BTU's amended and restated bylaws may be adopted, amended or repealed by vote of a majority of the directors in office or by vote of a majority of the stock outstanding and entitled to vote

Under BTU's amended and restated bylaws, at any time during which the common stock of the corporation is registered under Section 12 of the Exchange Act, any action by the holders of the common stock must be taken at an annual or special meeting and may not be taken by written consent.

Not applicable.

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COMPARATIVE MARKET PRICES AND DIVIDENDS

Amtech common stock is listed on the NASDAQ under the symbol “ASYS”, and BTU common stock is listed on NASDAQ under the symbol “BTUI”. The following table sets forth the high and low reported closing sale prices per share of Amtech common stock and BTU common stock, and the cash dividends declared per share for the periods indicated.

Quarter Ended:	Amtech Common Stock			BTU Common Stock		
	High	Low	Dividend	High	Low	Dividend
March 31, 2012	\$11.60	\$7.90	(1)	\$3.69	\$2.53	(1)
June 30, 2012	8.40	3.75		3.21	2.64	
September 30, 2012	4.43	3.27		2.78	2.10	
December 31, 2012	3.42	2.90		2.36	1.89	
March 31, 2013	4.85	3.24		3.45	1.96	
June 30, 2013	7.93	3.21		2.63	2.15	
September 30, 2013	7.70	5.44		3.40	2.42	
December 31, 2013	9.21	6.19		4.26	2.30	
March 31, 2014	13.74	6.87		4.11	2.52	
June 30, 2014	13.00	7.58		3.62	2.33	
September 30, 2014	12.37	8.47		4.00	2.77	
October 1, 2014 (through [], 2014)	10.13			3.20		

(1) No dividends paid.

On October 21, 2014, the last full trading day before the public announcement of the merger agreement, the closing sale price of shares of Amtech common stock as reported on NASDAQ was \$10.13. On [], 2014, the last practicable trading day before the date of this joint proxy statement/prospectus, the closing sale price of shares of Amtech common stock as reported on NASDAQ was \$[].

On October 21, 2014, the last full trading day before the public announcement of the merger agreement, the closing sale price of shares of BTU common stock as reported on NASDAQ was \$3.20. On [], 2014, the last practicable trading day before the date of this joint proxy statement/prospectus, the closing sale price of shares of BTU common stock as reported on NASDAQ was \$[].

As of [], 2014, the last date prior to printing this joint proxy statement/prospectus for which it was practicable to obtain this information for Amtech and BTU, respectively, there were approximately [] registered holders of Amtech common stock and approximately [] registered holders of BTU common stock.

The following table shows the closing sale prices of Amtech common stock and BTU common stock as reported on NASDAQ on October 21, 2014, the last full trading day before the public announcement of the merger agreement, and on [], 2014, the last practicable trading day before the date of this joint proxy statement/prospectus. The table also shows the implied value of the merger consideration payable for each share of BTU common stock, which was calculated by multiplying the closing price of Amtech common stock on those dates by the exchange ratio of 0.3291.

	Amtech Common Stock	BTU Common Stock	Implied Value of One Share of BTU Common Stock
At October 21, 2014	\$ 10.13	\$ 3.20	\$ 3.33
At [], 2014	\$ []		

Each of Amtech and BTU stockholders is advised to obtain current market quotations for Amtech common stock and BTU common stock. The market price of Amtech common stock and BTU common stock will fluctuate between the date of this joint proxy statement/prospectus and the date of completion of the merger. No assurance can be given concerning the market price of Amtech common stock or BTU common stock before or after the effective date of the merger. Changes in the market price of Amtech common stock prior to the completion of the merger will affect the market value of the merger consideration that BTU stockholders will receive upon completion of the merger.

LEGAL MATTERS

The validity of the Amtech common stock to be issued in connection with the merger will be passed upon for Amtech by Squire Patton Boggs (US) LLP (Phoenix, Arizona). Certain U.S. federal income tax consequences relating to the merger will also be passed upon for Amtech by Squire Patton Boggs (US) LLP (Phoenix, Arizona) and for BTU by Pierce Atwood LLP (Boston, Massachusetts).

EXPERTS

Amtech

The financial statements incorporated in this Registration Statement by reference to the Annual Report on Form 10-K for the year ended September 30, 2014 have been so incorporated in reliance on the report of Mayer Hoffman McCann P.C. an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

BTU

The consolidated financial statements of BTU International, Inc., as of December 31, 2013 and 2012, and for each of the years in the three-year period ended December 31, 2013, have been included herein and in the registration statement in reliance upon the reports of KPMG LLP, independent registered public accounting firm, appearing elsewhere herein, and upon the authority of said firm as experts in accounting and auditing.

DEADLINES FOR SUBMITTING STOCKHOLDER PROPOSALS

Amtech

Amtech anticipates holding its 2015 Annual Meeting of Stockholders on March 5, 2015. Any stockholder who wishes to present any proposal for stockholder action at the 2015 Annual Meeting of Stockholders must, in addition to complying with any other applicable requirements, including, without limitation, those set forth in Rule 14a-8 of the Securities Exchange Act of 1934, as amended, have submitted notice of such proposal to Amtech's Secretary, at Amtech's offices, not later than September 25, 2014, in order to be included in Amtech's proxy statement and form of proxy for that meeting. Such proposals should be addressed to the Corporate Secretary, Amtech Systems, Inc., 131 South Clark Drive, Tempe, Arizona 85281. If a stockholder proposal is introduced at the 2015 Annual Meeting of Stockholders without any discussion of the proposal in Amtech's proxy statement, and the stockholder does not notify Amtech on or before December 9, 2014, as required by SEC Rule 14(a)-4(c)(1), of the intent to raise such proposal at the 2015 Annual Meeting of Stockholders, then proxies received by Amtech for the 2015 Annual Meeting of Stockholders will be voted by the persons named in such proxies in their discretion with respect to such proposal. Notice of such proposal is to be sent to the above address.

BTU

If the merger occurs in the expected timeframe, there will be no BTU annual meeting of stockholders in 2015. In that case, stockholder proposals must be submitted to Amtech's Corporate Secretary in accordance with the procedures described above. In case the merger is not completed, any stockholder who may desire to submit a proposal under the SEC's stockholder proposal rule (Rule 14a-8) for inclusion in BTU's proxy and proxy statement for the 2015 annual meeting of BTU stockholders, must present such proposal in writing to BTU at 23 Esquire Road, North Billerica, Massachusetts 01862, Attention: Corporate Secretary, by December 15, 2014. Under BTU's bylaws, any stockholder who desires to submit a proposal outside of the process provided by the SEC's stockholder proposal rule (Rule 14a-8) or desires to nominate a director at the 2015 annual meeting of BTU stockholders must provide timely notice thereof in the manner and form required by BTU's amended and restated bylaws by April 1, 2015 (but not before March 2, 2015). If the date of the annual meeting of BTU stockholders should change, such deadlines under BTU's bylaws would also change.

VOTING AND MANAGEMENT INFORMATION

Information if Proxies, Consents, or Authorizations Are to Be Solicited

Pursuant to the terms of the merger agreement, at and after the effective time of the merger, Paul J. van der Wansem will serve as a director and executive officer of Amtech.

Name	Business Experiences and Current Directorships
Paul J. van der Wansem (Age: 75; Director of BTU Since 1979)	<p>President, Chief Executive Officer (1979-2002) of BTU; returned to position in October 2004. Chairman of the Board of Directors of BTU (1979-present).</p> <p>Prior to joining BTU, Mr. van der Wansem served as Vice President of Holec, N.V., a Dutch electronics company, President of Holec, USA, as a Management Consultant for the Boston Consulting Group, and as Adjunct Director of First National City Bank Amsterdam/New York.</p> <p>We believe Mr. van der Wansem's qualifications to serve on BTU's Board of Directors and as its Chairman include his many years of operational and strategic management experience in a global business environment, including his 34 years as BTU's Chief Executive Officer. His experience and perspective are a valuable asset to lead BTU's worldwide business with a predominantly multinational customer base and manufacturing facilities in both the United States and China.</p>

Executive Compensation

The following table sets forth information with respect to compensation paid to or accrued on behalf of Paul J. van der Wansem as of December 31, 2013 for services to BTU for the years ended December 31, 2013 and December 31, 2012.

SUMMARY COMPENSATION TABLE

Name and Principal Position	Year	Salary (\$)	Stock Awards (\$)	Option Awards \$(1)	Non-Equity Incentive Plan Compensation \$(2)	All Other Compensation (\$)	Total (\$)
Paul J. van der Wansem President, Chairman and Chief Executive Officer	2013	\$373,131	\$ —	\$44,893	\$ 13,984	\$ 21,732	\$453,740
	2012	\$391,787	\$ —	\$64,813	\$ 14,093	\$ 22,218	\$492,911

- (1) See Note 8 to the consolidated financial statements included in BTU's Form 10-K for the fiscal year ended December 31, 2013, for a discussion of the assumptions used under FASB ASC Topic 718 to value equity based compensation.
- (2) All 2013 and 2012 Non-Equity Incentive Plan Compensation was paid in the first quarter of fiscal 2014 and 2013, respectively, per the terms of the agreements. Cash incentive bonuses, which are contingent in nature, are awarded under BTU's annual Key Executive Incentive Compensation Plan. The Compensation Committee awards bonuses based on the achievement of specified levels of BTU's consolidated operating income and certain other business goals.

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Outstanding Equity Awards at 2013 Year-End

The table below sets forth information about outstanding equity awards held by Paul J. van der Wansem as of December 31, 2013.

Name	Award Grant Date	Option Awards				Stock Awards(2)	
		Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#)(1) Unexercisable	Option Exercise Price (\$)	Option Expiration Date	Number of Shares of Stock That Have Not Vested	Market Value of Shares of Stock That Have Not Vested
Paul J. van der Wansem	05/18/2007	60,000	0	\$ 11.93	05/18/2014	—	—
	05/16/2008	66,000	0	\$ 10.05	05/16/2015	—	—
	10/31/2008	33,000	0	\$ 5.01	10/31/2015	—	—
	05/15/2009	33,000	0	\$ 4.06	05/15/2016	—	—
	10/26/2009	50,000	0	\$ 5.79	10/26/2016	—	—
	05/21/2010	26,250	8,750	\$ 5.38	05/21/2017	—	—
	11/01/2010	26,250	8,750	\$ 6.99	11/01/2017	—	—
	05/20/2011	10,500	10,500	\$ 9.04	05/20/2018	—	—
	11/03/2011	10,500	10,500	\$ 3.56	11/03/2018	—	—
	06/04/2012	12,500	12,500	\$ 3.03	06/04/2019	—	—
	11/05/2012	12,500	12,500	\$ 2.00	11/05/2019	—	—
	06/03/2013	0	12,500	\$ 2.35	06/03/2020	—	—
	11/04/2013	0	18,000	\$ 3.27	11/04/2020	—	—

(1) The option awards listed above vest with respect to one-fourth of the shares on each of the first, second, third, and fourth anniversaries of the date of grant, except for the options expiring on 5/15/2016 granted under the 2009 Stock Option Exchange Program which vest in thirds on each of the first, second and third anniversaries of the date of grant, and the options expiring on 6/04/2019, 11/05/2019, 06/03/2020 and 11/04/2020 which vest one-half of the shares on each of the first and second anniversaries of the date of grant.

(2) Mr. van der Wansem did not hold any stock awards as of December 31, 2013.

All of the option awards listed above were granted under the 2003 Equity Incentive Plan (the “2003 Plan”). The 2003 Plan allows for the award of stock options to employees, directors and consultants.

Employment Contracts

For a description of Mr. van der Wansem’s agreements and arrangements with BTU, see “The Merger—Interests of BTU’s Directors and Executive Officers in the Merger” beginning on page 126.

Beneficial Ownership of Shares

The following table sets forth certain information regarding beneficial ownership as of November 19, 2014, of BTU’s Common Stock (i) by each person known by BTU to own beneficially more than 5% of BTU’s Common Stock, (ii) by each of BTU’s directors, (iii) by each Named Executive Officer of BTU listed in the Summary Compensation Table in its definitive

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proxy statement for 2014 and (iv) by all directors and executive officers of BTU as a group. Unless otherwise noted below, the address of each person is 23 Esquire Road, North Billerica, Massachusetts 01862.

	Common Stock	
	Beneficially Owned(1)	
	Number of Shares	Percent of Class
Directors and Executive Officers		
Paul J. van der Wansem(2)	2,001,744	20.15%
Joseph F. Wrinn(3)	48,153	*
G. Mead Wyman(3)	41,693	*
J. Samuel Parkhill(3)	36,421	*
Bertrand Loy(3)	23,262	*
Peter J. Tallian(3)	47,857	*
John J. McCaffrey(3)	100,700	1.04%
All directors and executive officers as a group (8 persons)(4)	2,377,530	24.05%
5% Beneficial Owners		
Austin W. Marx & David M. Greenhouse(5) 527 Madison Avenue, Suite 2600 New York, New York 10022	1,291,452	13.47%
Royce & Associates, LLC(6) 745 Fifth Avenue New York, NY 10151	968,749	10.11%
Laurence W. Lytton(7) 467 CPW New York, NY 10025	762,549	7.96%
Ameriprise Financial, Inc.(8) 145 Ameriprise Financial Center Minneapolis, MN 55474	642,381	6.70%
T. Rowe Price Associates, Inc.(9) 100 E. Pratt Street Baltimore, MD 21202	634,990	6.62%

* Less than one percent

- (1) Except as otherwise noted, each person or entity named in the table has sole voting and investment power with respect to all shares of Common Stock shown as beneficially owned by him or it.
- (2) Includes: (i) 90,344 shares of Common Stock held by trusts, of which Mr. van der Wansem is a trustee, for the benefit of certain members of Mr. van der Wansem's family (Mr. van der Wansem disclaims beneficial ownership in the shares held in these trusts); (ii) 365,000 shares held in a family limited partnership, in which Mr. van der Wansem is a general partner and a limited partner; (iii) 115,000 shares held by Mrs. van der Wansem, of which Mr. van der Wansem disclaims beneficial ownership; (iv) 60,250 shares held by a charitable foundation, of which Mr. van der Wansem is a trustee and in which he shares voting and investment power, of which Mr. van der Wansem disclaims beneficial ownership; and (v) 348,750 shares represented by options exercisable by Mr. van der Wansem within 60 days of November 21, 2014.
- (3) Includes 29,518 shares for Mr. Wrinn, 29,518 shares for Mr. Wyman, 23,998 shares for Mr. Parkhill, 23,262 shares for Mr. Loy, 39,400 shares for Mr. Tallian, and 94,700 shares for Mr. McCaffrey represented by options exercisable within 60 days of November 21, 2014.
- (4) Includes 656,346 shares represented by options exercisable within 60 days of November 21, 2014.
- (5) Information as to share ownership is as of November 18, 2014, and is based on a Form 4 filed with the SEC on November 19, 2014. Austin W. Marx and David M. Greenhouse are the controlling principals of AWM Investment Company, Inc., ("AWM"), the general partner of MGP Advisers Limited Partnership ("MGP"), the general partner of

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Special Situations Fund III QP, L.P., (“SSFQP”) and Special Situations Cayman Fund, L.P. (“Cayman”). AWM serves as the investment adviser to SSFQP and Cayman. The principal business of the fund is to invest in equity and equity-related securities and other securities of any kind or nature. Messrs. Marx and Greenhouse together with Adam C. Stettner, beneficially own a total of 1,291,452 shares of Common Stock. This amount includes 1,189,505 shares of Common Stock owned by SSFQP and 101,947 shares of Common Stock owned by Cayman. Messrs. Marx, Greenhouse and Stettner have shared voting power covering 1,291,452 shares of BTU’s Common Stock and shared dispositive power covering 1,291,452 shares of BTU’s Common Stock.

- (6) Information as to share ownership is as of October 31, 2014, and is based on a Schedule 13G/A filed with the SEC on November 6, 2014. Royce & Associates, LLC has sole voting power and sole dispositive power over 968,749 shares of BTU’s Common Stock.
- (7) Information as to share ownership is as of December 31, 2013, and is based on a Schedule 13G/A filed with the SEC on February 10, 2014. Mr. Laurence W. Lytton has sole voting power and sole dispositive power over 712,549 shares of BTU’s Common Stock and has shared voting power and shared dispositive power over 50,000 shares of BTU’s Common Stock.
- (8) Information as to share ownership is as of December 31, 2013, and is based on a Schedule 13G/A filed with the SEC on February 13, 2014. Ameriprise Financial, Inc. has shared voting power covering 406,027 shares of BTU’s Common Stock, and shared dispositive power covering 642,381 shares of BTU’s Common Stock. Within Ameriprise Financial, Inc., voting power is allocated to the following entities: Ameriprise Financial, Inc. has shared voting power covering 406,027 shares of BTU’s Common Stock and shared dispositive power covering 642,381 shares of BTU’s Common Stock. Columbia Management Investment Advisors, LLC has shared voting power covering 406,027 shares of BTU’s Common Stock, and shared dispositive power covering 642,381 shares of BTU’s Common Stock.
- (9) Information as to share ownership is as of December 31, 2013, and is based on a Schedule 13G/A filed with the SEC on February 10, 2014. T. Rowe Price Associates, Inc. has sole voting power covering 34,590 shares of BTU’s Common Stock and sole dispositive power covering 634,990 shares of BTU’s Common Stock. T. Rowe Price Small-Cap Value Fund, Inc. has sole voting power covering 596,370 shares of BTU’s Common Stock.

WHERE YOU CAN FIND MORE INFORMATION

Amtech has filed with the SEC a registration statement under the Securities Act of 1933, as amended, that registers the issuance of the shares of Amtech common stock which may possibly be issued in connection with the merger. This joint proxy statement/prospectus is a part of that registration statement and constitutes the prospectus of Amtech in addition to being a proxy statement for Amtech and BTU stockholders. The registration statement, including this joint proxy statement/prospectus and the attached exhibits, and annexes contains additional relevant information about Amtech and Amtech common stock.

Amtech and BTU also file reports, proxy statements and other information with the SEC under the Exchange Act. You may read and copy this information at the Public Reference Room of the SEC at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may obtain information on the operation of the SEC's Public Reference Room by calling the SEC at 1-800-SEC-0330. You may also obtain copies of this information by mail from the Public Reference Section of the SEC, 100 F Street, N.E., Washington, D.C. 20549, at prescribed rates, or from commercial document retrieval services.

The SEC also maintains an Internet website that contains reports, proxy statements and other information about issuers, such as Amtech and BTU, who file electronically with the SEC. The address of the site is <http://www.sec.gov>. The reports and other information filed by Amtech with the SEC are also available at Amtech's website at www.amtechsystems.com under the tab "Investors", and then under the heading "SEC Filings". The reports and other information filed by BTU with the SEC are available at BTU's website at www.btu.com under the tab "Investors", and then under the heading "Financial Information" and then under the subheading "SEC Filings". The web addresses of the SEC, Amtech and BTU are included as inactive textual references only. Except as specifically incorporated by reference into this joint proxy statement/prospectus, information on those web sites is not part of this joint proxy statement/prospectus.

The SEC allows Amtech to incorporate by reference information in this joint proxy statement/prospectus. This means that Amtech can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this joint proxy statement/prospectus, except for any information that is superseded by information that is included directly in this joint proxy statement/prospectus.

This joint proxy statement/prospectus incorporates by reference the documents listed below that Amtech previously filed with the SEC. They contain important information about Amtech and its financial condition.

Amtech SEC Filings (SEC File No. 0-11412)

Annual Report on Form 10-K
Current Reports on Form 8-K or 8-K/A

Period or Date Filed

Year ended September 30, 2014
Filed on October 23, 2014 and November 21, 2014 (other than those portions of the documents deemed to be furnished and not filed)

In addition, Amtech also incorporates by reference additional documents filed with the SEC under Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act between the date of this joint proxy statement/prospectus and the date of the Amtech special meeting provided that Amtech is not incorporating by reference any information furnished to, but not filed with, the SEC.

Except where the context otherwise indicates, Amtech has supplied all information contained or incorporated by reference in this joint proxy statement/prospectus relating to Amtech, and BTU has supplied all information contained in this joint proxy statement/prospectus relating to BTU.

Documents incorporated by reference are available from Amtech without charge, excluding any exhibits to those documents unless the exhibit is specifically incorporated by reference as an exhibit in this joint proxy statement/prospectus. You can obtain documents incorporated by reference in this joint proxy statement/prospectus by requesting them in writing or by telephone from the Amtech at the following address and phone number:

Amtech Systems, Inc.
131 South Clark Drive
Tempe, Arizona 85281
Attention: Corporate Secretary
Telephone: (480) 967-5146

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Amtech stockholders requesting documents must do so by [], 2014 to receive them before the Amtech special meeting. You will not be charged for any of these documents that you request. If you request any incorporated documents from Amtech, Amtech will mail them to you by first class mail, or another equally prompt means, within one business day after receiving your request.

Certain documents referenced herein related to BTU are available from BTU without charge. You can obtain any such documents by requesting them in writing or by telephone from BTU at the following address and phone number:

BTU International, Inc.
23 Esquire Road
North Billerica, MA 01862
Attention: Investor Relations
Telephone: (978) 667-4111

BTU stockholders requesting documents must do so by [], 2014 to receive them before the BTU special meeting. You will not be charged for any of these documents that you request. If you request any documents from BTU, BTU will mail them to you by first class mail, or another equally prompt means, within one business day after receiving your request.

Neither Amtech nor BTU has authorized anyone to give any information or make any representation about the merger or the companies that is different from, or in addition to, that contained in this joint proxy statement/prospectus or in any of the materials that have been incorporated in this joint proxy statement/prospectus. Therefore, if anyone does give you information of this sort, you should not rely on it. If you are in a jurisdiction where offers to exchange or sell, or solicitations of offers to exchange or purchase, the securities offered by this joint proxy statement/prospectus or the solicitation of proxies is unlawful, or if you are a person to whom it is unlawful to direct these types of activities, then the offer presented in this joint proxy statement/prospectus does not extend to you. The information contained in this joint proxy statement/prospectus speaks only as of the date of this joint proxy statement/prospectus unless the information specifically indicates that another date applies.

AGREEMENT AND PLAN OF MERGER

BY AND AMONG

AMTECH SYSTEMS, INC.,

BTU MERGER SUB, INC.,

AND

BTU INTERNATIONAL, INC.

Dated as of October 21, 2014

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AGREEMENT AND PLAN OF MERGER

This Agreement and Plan of Merger (this "Agreement"), is entered into as of October 21, 2014, by and among Amtech Systems, Inc., an Arizona corporation ("Parent"), BTU Merger Sub, Inc., a Delaware corporation and a direct wholly owned subsidiary of Parent ("Merger Sub"), and BTU International, Inc., a Delaware corporation (the "Company" and, collectively with Parent and Merger Sub, the "Parties").

RECITALS

WHEREAS, the Parties desire to enter into a strategic business combination transaction pursuant to which Merger Sub will be merged with and into the Company, with the Company surviving the merger on the terms and subject to the conditions set forth herein;

WHEREAS, the Board of Directors of the Company (the "Company Board") has, subject to the terms and conditions set forth in this Agreement, unanimously (a) determined that it is in the best interests of the Company and its stockholders, and declared it advisable, to enter into this Agreement with Parent and Merger Sub, (b) approved the execution, delivery and performance of this Agreement and the consummation of the strategic business combination transaction contemplated hereby, including the Merger (defined below), and (c) resolved, subject to the terms and conditions set forth in this Agreement, to recommend adoption of this Agreement by the stockholders of the Company;

WHEREAS, the respective Boards of Directors of Parent (the "Parent Board") and Merger Sub have, subject to the terms and conditions set forth in this Agreement, unanimously approved this Agreement, and have determined that it is advisable and in the best interests of their respective companies and stockholders to consummate the strategic business combination transaction provided for in this Agreement, and the Parent Board has determined to recommend to the stockholders of Parent that they approve the issuance of shares of common stock, par value \$0.01 per share, of Parent (the "Parent Common Stock") in connection with the strategic business combination transaction provided for in this Agreement (the "Parent Share Issuance");

WHEREAS, the Parties intend for federal income tax purposes that the Merger shall qualify as a reorganization under the provisions of Sections 368(a)(1)(A) and 368(a)(2)(E) of the Code and this Agreement shall constitute a "plan of reorganization" within the meaning of Section 1.368-2(g) of the Treasury Regulations (the "Tax-Free Reorganization");

WHEREAS, in connection with the execution and delivery of this Agreement by the Parties, (i) each of the stockholders of the Company identified in Appendix A have entered into a Support Agreement (each, a "Company Support Agreement") dated as of the date of this Agreement with Parent and Merger Sub, pursuant to which each of the applicable Company stockholders have agreed, among other things, to vote all of the Company Common Stock beneficially owned by it in favor of the adoption of this Agreement, the Merger and the other transactions contemplated by this Agreement, on the terms and subject to the conditions set forth in such Company Support Agreement and (ii) each of the employees of the Company identified in Appendix B (the "Key Employees") have entered into agreements (each, a "Key Employment Agreement") with Parent or one of its Subsidiaries providing for such Key Employee's continued employment following the Closing;

WHEREAS, in connection with the execution and delivery of this Agreement by the Parties, each of the stockholders of Parent identified in Appendix A have entered into a Support Agreement (each, a "Parent Support Agreement") dated as of the date of this Agreement with the Company, pursuant to which each of the applicable stockholders of Parent has agreed, among other things, to vote all of the Parent Common Stock beneficially owned by it in favor of approval of the Parent Share Issuance, on the terms and subject to the conditions set forth in such Parent Support Agreement; and

WHEREAS, the Parties desire to make certain representations, warranties, covenants and agreements in connection with the Merger and the transactions contemplated by this Agreement and also to prescribe certain conditions to the Merger.

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NOW, THEREFORE, in consideration of the foregoing and the respective representations, warranties, covenants and agreements set forth in this Agreement, and intending to be legally bound hereby, the Parties hereby agree as follows:

ARTICLE I THE MERGER

Section 1.1 The Merger. Upon the terms and subject to the conditions set forth in this Agreement, and in accordance with the Delaware General Corporation Law (the “DGCL”), Merger Sub shall be merged with and into the Company at the Effective Time (the “Merger”). Following the Merger, the separate corporate existence of Merger Sub shall cease and the Company shall continue its corporate existence under the DGCL as the surviving corporation in the Merger (the “Surviving Corporation”).

Section 1.2 Closing. Upon the terms and subject to the conditions set forth in this Agreement, the closing of the Merger (the “Closing”) will take place at 10:00 a.m. Mountain Standard time on the date that is no later than three (3) Business Days following the satisfaction or (subject to applicable Law) waiver of the conditions set forth in Article VII (excluding conditions that, by their nature, cannot be satisfied until the Closing Date, but subject to the fulfillment or waiver of those conditions), unless another time or date is agreed to by the Parties (the actual time and date of the Closing being referred to herein as the “Closing Date”). The Closing shall be held at the offices of Squire Patton Boggs (US) LLP, 1 E. Washington Street, Suite 2700, Phoenix, AZ 85004, or at such other place as the Parties may agree.

Section 1.3 Effective Time. As soon as practicable on the Closing Date, the Company shall (a) file a certificate of merger (the “Certificate of Merger”) in such form as is required by, and executed and acknowledged in accordance with, the relevant provisions of the DGCL and (b) make all other filings or recordings required under the DGCL in connection with the Merger. The Merger shall become effective at such time as the Certificate of Merger is duly filed with the Delaware Secretary of State or at such subsequent time as Parent and the Company may agree and as shall be specified in the Certificate of Merger (the date and time the Merger becomes effective being the “Effective Time”).

Section 1.4 Effects of the Merger. At and after the Effective Time, the Merger will have the effects set forth herein and in the applicable provisions of the DGCL. Without limiting the generality of the foregoing, and subject thereto, from and after the Effective Time, all property, rights, privileges, immunities, powers, franchises, licenses and authority of the Company and Merger Sub shall vest in the Surviving Corporation, and all debts, liabilities, obligations, restrictions, and duties of each of the Company and Merger Sub shall become the debts, liabilities, obligations, restrictions, and duties of the Surviving Corporation.

Section 1.5 Bylaws. At the Effective Time, the bylaws of the Surviving Corporation shall be amended so as to read in their entirety as the bylaws of the Merger Sub as in effect immediately prior to the Effective Time, except the references to Merger Sub’s name shall be replaced by references to “BTU International, Inc.” until thereafter changed or amended in accordance with the terms thereof, the certificate of incorporation of the Surviving Corporation, or as provided by applicable Law (subject to Section 6.7(b)).

Section 1.6 Certificate of Incorporation. At the Effective Time, the certificate of incorporation of the Surviving Corporation shall be amended so as to read in its entirety as the certificate of incorporation of the Merger Sub as in effect immediately prior to the Effective Time, except the references to Merger Sub’s name shall be replaced by references to “BTU International, Inc.” until thereafter amended in accordance with the terms thereof or as provided by applicable Law (subject to Section 6.7(b)).

Section 1.7 Directors and Officers. The directors and officers of Merger Sub, in each case, immediately prior to the Effective Time shall, from and after the Effective Time, be the directors and officers, respectively, of the Surviving Corporation until their successors have been duly elected or appointed and qualified or until their earlier death, resignation, or removal in accordance with the certificate of incorporation and bylaws of the Surviving Corporation.

Section 1.8 Effect on Capital Stock.

(a) At the Effective Time, as a result of the Merger and without any action on the part of the holder thereof, each share of common stock, par value \$0.01 per share, of Merger Sub issued and outstanding immediately prior to the Effective Time, shall

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be converted into one validly issued, fully paid and non-assessable share of common stock, par value \$0.01 per share, of the Surviving Corporation.

(b) At the Effective Time, by virtue of the Merger and without any action on the part of the holder thereof, each share of common stock, par value \$0.01 per share, of the Company (“Company Common Stock”) issued and outstanding immediately prior to the Effective Time (including any Company Restricted Stock which has become vested and converted into unrestricted Company Common Stock pursuant to Section 1.9(b)), but excluding any shares of Company Common Stock held directly or indirectly by the Company, all of which shall be canceled as provided in Section 1.8(d)), shall be converted into and shall thereafter represent the right to receive 0.3291 (such ratio, as may be adjusted pursuant to Section 1.11, the “Exchange Ratio”) of a validly issued, fully paid and non-assessable share of Parent Common Stock (collectively with any shares of Parent Common Stock to be issued pursuant to Section 2.4, the “Merger Consideration”).

(c) As a result of the Merger and without any action on the part of the holders thereof, at the Effective Time, all shares of outstanding Company Common Stock shall cease to be outstanding and shall be canceled and retired and shall cease to exist, and each holder of a certificate or certificates which immediately prior to the Effective Time represented shares of Company Common Stock (the “Certificates”) or book-entry shares which immediately prior to the Effective Time represented shares of Company Common Stock (the “Book-Entry Shares”) shall thereafter cease to have any rights with respect to such shares of Company Common Stock except as provided herein or by Law.

(d) Each share of Company Common Stock owned by Parent, Merger Sub or any of their Subsidiaries or held by the Company or any of its Subsidiaries (including any shares held in the treasury of the Company) at the Effective Time shall, by virtue of the Merger, cease to be outstanding and shall be canceled and retired and no stock of Parent or other consideration shall be delivered in exchange therefor.

Section 1.9 Company Stock Options and Other Equity-Based Awards.

(a) By virtue of the Merger, each option to purchase shares of Company Common Stock under the applicable Company Stock Plans that is outstanding immediately prior to the Effective Time, whether or not then vested or exercisable (collectively, the “Company Stock Options”) shall, automatically and without any required action on the part of any holder or beneficiary thereof, be assumed by Parent and shall be converted, at the Effective Time, into an option to purchase shares of Parent Common Stock (a “Parent Stock Option”), on substantially the same terms and conditions as were applicable to such Company Stock Option immediately before the Effective Time (including expiration date, vesting conditions, and exercise provisions, but taking into account any changes thereto, including the acceleration thereof, provided for in the Company Stock Plans, in an award agreement or in such Company Stock Option by reason of this Agreement or the transactions contemplated herein), except that: (i) each Parent Stock Option shall have an exercise price per share of Parent Common Stock equal to the exercise price per share of Company Common Stock for such Company Stock Option immediately prior to the Effective Time divided by the Exchange Ratio, rounded, if necessary, up to the nearest whole cent; and (ii) the number of shares of Parent Common Stock which shall be subject to each such Parent Stock Option shall be the number of shares of Company Common Stock subject to each Company Stock Option immediately prior to the Effective Time, multiplied by the Exchange Ratio, rounded, if necessary, down to the nearest whole share of Parent Common Stock; provided, however, that notwithstanding anything to the contrary in this Agreement, in all cases such conversion shall be effected in a manner consistent with the requirements of Section 424(a) of the Code (as modified by Section 409A of the Code with respect to Company Stock Options that are not intended to qualify as “incentive stock options” within the meaning of Section 422 of the Code).

(b) Effective immediately prior to the Effective Time, each restricted stock unit relating to Company Common Stock granted to any employee or director of the Company, any of its Subsidiaries or any of its predecessors under any Company Stock Plan that is outstanding immediately prior to the Effective Time (collectively, the “Company Restricted Stock”) shall, by virtue of the Merger and without any action on the part of the holder thereof, become a fully vested and unrestricted share of Company Common Stock immediately prior to the Effective Time.

(c) Prior to the Effective Time, the Parent Board (or the appropriate committee thereof) and the Company Board (or the appropriate committee thereof) shall take such action and adopt such resolutions as are required to effectuate the treatment of the

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Company Stock Options pursuant to the terms of this Section 1.9, and to take all actions reasonably required to effectuate any provision of this Section 1.9, including (i) the Parent Board (or the appropriate committee thereof) shall take all corporate action necessary or advisable to assume and continue the Company Stock Plans subject to any amendment or termination in accordance with the terms of such plans; (ii) the Parent Board (or the appropriate committee thereof) shall take all corporate action necessary or advisable to reserve for issuance a sufficient number of shares of Parent Common Stock for delivery upon exercise of a Parent Stock Option; and (iii) the Company Board (or the appropriate committee thereof) shall take all corporate action necessary or advisable to ensure that, after the Effective Time, neither the Company nor the Surviving Corporation will be required to deliver shares of Company Common Stock or any other capital stock to any person pursuant to or in settlement of Company Stock Options.

(d) As soon as practicable following the Effective Time, Parent shall file a Form S-8 registration statement (or such other appropriate form), or a post-effective amendment to a registration statement previously filed under the Securities Act, with respect to the shares of Parent Common Stock available for grant and delivery under the Company Stock Plans from and after the Effective Time and shall use its commercially reasonable efforts to maintain the effectiveness of such registration statement (and maintain the current status of the prospectus contained therein) for so long as such shares are available for grant and delivery under the Company Stock Plans.

Section 1.10 Employee Stock Purchase Plan. The Company shall take all actions necessary, subject to applicable Law, pursuant to the terms of the Company's 1988 Employee Stock Purchase Plan (the "ESPP") in order to (a)(i) ensure that no offering periods under the ESPP commence after the date hereof, and (ii) ensure that no employees of the Company are permitted to begin as a new participant in the ESPP after the date hereof, (b)(i) if necessary, shorten the offering period under the ESPP in effect at the Effective Time (the "Current Offering"), such that the Current Offering shall terminate immediately prior to the Effective Time, and (ii) ensure that no participant shall be permitted to increase elective deferrals in respect of any Current Offering period (c) if the action specified in clause (b) above is necessary, permit current participants in the ESPP to exercise, effective as of immediately prior to the Effective Time, any purchase rights existing immediately prior to the Effective Time under the ESPP, (d) refund to participants in the ESPP the funds that remain in the participants' accounts after any such purchase and (e) terminate the ESPP immediately prior to the Effective Time. The Company shall take any and all actions (but subject to compliance with the terms and conditions of awards) as may be necessary to terminate the ESPP as of the Effective Time.

Section 1.11 Certain Adjustments. Without limiting the other provisions of this Agreement, if at any time during the period between the date of this Agreement and the Effective Time, the outstanding shares of Parent Common Stock or Company Common Stock are changed into a different number of shares or different class of capital stock of the Company by reason of any reclassification, recapitalization, stock split (including reverse stock split) or combination, exchange or readjustment of shares, or any stock dividend or distribution paid in stock, the Exchange Ratio and any other amounts payable pursuant to this Agreement shall be appropriately adjusted to reflect such change.

Section 1.12 Tax Consequences. For federal income tax purposes, the Merger is intended to constitute a Tax-Free Reorganization and the Parties hereby adopt this Agreement as a "plan of reorganization" within the meaning of Sections 1.368-2(g) of the Treasury Regulations.

ARTICLE II EXCHANGE OF SHARES

Section 2.1 Exchange Agent. Prior to the Effective Time, Parent shall appoint an exchange agent reasonably acceptable to the Company (the "Exchange Agent") to act as agent pursuant to an Exchange Agent Agreement. On or as soon as reasonably practicable after the Effective Time, Parent shall deposit, or cause the Surviving Corporation to deposit, with the Exchange Agent, in trust for the benefit of holders of shares of Company Common Stock, book-entry shares (or certificates if requested) representing the Parent Common Stock issuable, pursuant to Section 1.8 in exchange for outstanding shares of Company Common Stock (including Company Restricted Stock). Any shares of Parent Common Stock deposited with the Exchange Agent shall hereinafter be referred to as the "Exchange Fund." The Exchange Fund shall not be used for any other purpose. The Surviving Corporation shall pay all charges and expenses, including those of the Exchange Agent, in connection with the

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exchange of shares for the Merger Consideration. Promptly after the Effective Time, Parent shall send, or shall cause the Exchange Agent to send, to each record holder of shares of Company Common Stock at the Effective Time, a letter of transmittal and instructions (which shall specify that the delivery shall be effected, and risk of loss and title shall pass, only upon proper delivery of the Certificates or transfer of the Book-Entry Shares to the Exchange Agent) (a "Letter of Transmittal") for use in such exchange.

Section 2.2 Exchange Procedures.

(a) As soon as reasonably practicable after the Effective Time, the Surviving Corporation shall cause the Exchange Agent to mail to each holder of record of a Certificate (i) a Letter of Transmittal which shall specify that delivery shall be effected, and risk of loss and title to the Certificates shall pass, only upon proper delivery of the Certificates to the Exchange Agent, and which letter shall be in customary form and have such other provisions as Parent may reasonably specify and (ii) instructions for effecting the surrender of such Certificates (or effective affidavits of loss in lieu thereof) in exchange for the Merger Consideration. Upon surrender of a Certificate to the Exchange Agent together with such Letter of Transmittal, duly executed and completed in accordance with the instructions thereto, and such other documents as may reasonably be required by the Exchange Agent, the holder of such Certificate shall be entitled to receive in exchange therefor (A) one or more shares of Parent Common Stock (which shall be in uncertificated book-entry form unless a physical certificate is requested) representing, in the aggregate, the whole number of shares that such holder has the right to receive pursuant to Section 1.8 (after taking into account all shares of Company Common Stock then held by such holder) and (B) one or more shares of Parent Common Stock (which shall be in uncertificated book-entry form unless a physical certificate is requested) representing, in the aggregate, the whole number of shares that such holder has the right to receive in lieu of any fractional shares of Parent Common Stock pursuant to Section 2.4.

Notwithstanding anything contained in this Agreement to the contrary, no holders of Book-Entry Shares shall be required to deliver a Certificate or an executed Letter of Transmittal to the Exchange Agent to receive the Merger Consideration that such holder is entitled to receive pursuant to this Agreement.

(b) No interest will be paid or will accrue on any cash payable pursuant to Section 2.2(d).

(c) In the event of a transfer of ownership of a Certificate representing Company Common Stock that is not registered in the stock transfer records of the Company, the Merger Consideration shall be issued or paid in exchange therefor to a Person other than the Person in whose name the Certificate so surrendered is registered if the Certificate formerly representing such Company Common Stock is properly endorsed or otherwise in proper form for transfer and the Person requesting such payment or issuance pays any transfer or other similar Taxes required by reason of the payment or issuance to a Person other than the registered holder of the Certificate or establish to the satisfaction of Parent that the Tax has been paid or is not applicable.

(d) Distributions with Respect to Unexchanged Shares All shares of Parent Common Stock to be issued pursuant to this Agreement shall be deemed issued and outstanding as of the Effective Time and whenever a dividend or other distribution is declared by Parent in respect of the Parent Common Stock, the record date for which is at or after the Effective Time, that declaration shall include dividends or other distributions in respect of all shares issuable pursuant to this Agreement; provided, however, that no dividends or other distributions declared or made in respect of the Parent Common Stock shall be paid to the holder of any unsurrendered Certificate or Book-Entry Shares until such holder surrenders such Certificate or Book-Entry Shares in accordance with this Article II. Subject to the effect of applicable Laws, following surrender of any such Certificate or Book-Entry Shares, there shall be paid to such holder of shares of Parent Common Stock issuable in exchange therefor, without interest, (a) promptly after the time of such surrender, the amount of dividends or other distributions with a record date after the Effective Time therefor paid with respect to such whole shares of Parent Common Stock; and (b) at the appropriate payment date, the amount of dividends or other distributions with a record date at or after the Effective Time but prior to such surrender and a payment date subsequent to such surrender payable with respect to such shares of Parent Common Stock.

Section 2.3 No Further Ownership Rights. All shares of Parent Common Stock issued and cash paid upon the conversion of shares of Company Common Stock in accordance with the terms of Article I and this Article II (including any cash

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paid pursuant to Section 2.2(d) shall be deemed to have been issued or paid in full satisfaction of all rights pertaining to the shares of Company Common Stock.

Section 2.4 No Fractional Shares of Parent Common Stock.

(a) No certificates or scrip or shares of Parent Common Stock representing fractional shares of Parent Common Stock or book-entry credit of the same shall be issued upon the surrender for exchange of Certificates or Book-Entry Shares, and such fractional share interests shall not entitle the owner thereof to vote or to have any rights, including without limitation dividend or distribution rights, as a stockholder of Parent or a holder of shares of Parent Common Stock.

(b) Notwithstanding anything contained in this Agreement to the contrary, each holder of shares of Company Common Stock exchanged pursuant to the Merger who would otherwise have been entitled to receive a fraction of a share of Parent Common Stock (after taking into account all Certificates or Book-Entry Shares delivered by such holder) shall receive, in lieu thereof, one whole share of Parent Common Stock (which shall be in uncertificated book-entry form unless a physical certificate is requested).

Section 2.5 Termination of Exchange Fund. Any portion of the Exchange Fund that remains unclaimed by the holders of shares of Parent Common Stock six (6) months after the Effective Time shall be returned to Parent, upon demand, and any such holder who has not exchanged shares of Company Common Stock for the Merger Consideration in accordance with Section 2.2 prior to that time shall thereafter look only to Parent for payment of the Merger Consideration. Notwithstanding the foregoing, Parent shall not be liable to any holder of shares of Company Common Stock for any amounts paid to a public official pursuant to applicable abandoned property, escheat or similar Laws. Any amounts remaining unclaimed by holders of shares of Company Common Stock two (2) years after the Effective Time (or such earlier date, immediately prior to such time when the amounts would otherwise escheat to or become property of any Governmental Entity) shall become, to the extent permitted by applicable Law, the property of Parent free and clear of any claims or interest of any Person previously entitled thereto.

Section 2.6 No Liability. None of Parent, Merger Sub, the Company, the Surviving Corporation or the Exchange Agent shall be liable to any Person in respect of any Merger Consideration from the Exchange Fund delivered to a public official pursuant to any applicable abandoned property, escheat or similar Law.

Section 2.7 Lost Certificates. If any Certificate shall have been lost, stolen or destroyed, upon the making of an affidavit of that fact by the Person claiming such Certificate to be lost, stolen or destroyed and, if required by Parent, the posting by such Person of a bond, in such reasonable amount as Parent may direct, as indemnity against any claim that may be made against it with respect to such Certificate, the Exchange Agent will issue, in exchange for such lost, stolen or destroyed Certificate, the Merger Consideration to be paid in respect of the shares of Company Common Stock formerly represented by such Certificate (and unpaid dividends and distributions, if any, on shares of Parent Common Stock to which such holders are entitled pursuant to Section 2.2(d)) as contemplated under this Article II.

Section 2.8 Withholding Rights. Each of the Exchange Agent, Parent, Merger Sub and the Surviving Corporation shall be entitled to deduct and withhold from the consideration otherwise payable to any Person pursuant to this Agreement such amounts as may be required to be deducted and withheld with respect to the making of such payment under the Code, or any provision of state, local or foreign Tax Law. To the extent that amounts are so deducted and withheld by the Exchange Agent, Parent, Merger Sub, or the Surviving Corporation, as the case may be, such withheld amounts shall be remitted to the applicable Governmental Entity and such amounts shall be treated for all purposes of this Agreement as having been paid to the Person in respect of which the Exchange Agent, Parent, Merger Sub, or the Surviving Corporation, as the case may be, made such deduction and withholding.

Section 2.9 Further Assurances. After the Effective Time, the officers and directors of the Surviving Corporation will be authorized to execute and deliver, in the name and on behalf of the Company or Merger Sub, any deeds, bills of sale, assignments or assurances and to take and do, in the name and on behalf of the Company or Merger Sub, any other actions and things to vest, perfect or confirm of record or otherwise in the Surviving Corporation any and all right, title and interest in, to and

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under any of the rights, properties or assets acquired or to be acquired by the Surviving Corporation as a result of, or in connection with, the Merger.

Section 2.10 Stock Transfer Books. The stock transfer books of the Company shall be closed at the close of business on the day on which the Effective Time occurs and there shall be no further registration of transfers of shares of Company Common Stock thereafter on the records of the Company. On or after the Effective Time, any Certificates presented to the Exchange Agent or Parent for any reason shall be converted into the Merger Consideration with respect to the shares of Company Common Stock formerly represented thereby (including any shares of Parent Common Stock to which the holders thereof are entitled pursuant to Section 2.4).

**ARTICLE III
REPRESENTATIONS AND WARRANTIES OF THE COMPANY**

Except (i) as disclosed in the Company SEC Documents filed since June 30, 2014 but prior to the date of this Agreement (but excluding any disclosures contained under the heading “Risk Factors” or “forward looking statements” or any other disclosures included in such filings to the extent that they are forward-looking statements or cautionary, nonspecific, predictive or forward-looking in nature) or (ii) as set forth in the Company Disclosure Letter delivered by the Company to Parent prior to or concurrently with the execution of this Agreement (the “Company Disclosure Letter”), the Company hereby represents and warrants to Parent and Merger Sub as follows:

Section 3.1 Organization, Standing and Power; Organizational Documents; Subsidiaries.

(a) Each of the Company and its Subsidiaries is a corporation, limited liability company or other legal entity duly organized, validly existing and in good standing (with respect to jurisdictions that recognize the concept of good standing) under the Laws of its jurisdiction of organization, and has the requisite corporate, limited liability company or other organizational, as applicable, power and authority to own, lease and operate its assets and to carry on its business as presently conducted, except with respect to the Company’s Subsidiaries, where the failure to be so qualified or in good standing, or to have such power or authority when taken together with all other such failures, has not, and would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect. Each of the Company and its Subsidiaries is duly qualified or licensed to do business as a foreign corporation, limited liability company or other legal entity and is in good standing (with respect to jurisdictions that recognize the concept of good standing) in each jurisdiction where the character of the assets and properties owned, leased or operated by it or the nature of its business makes such qualification or license necessary, except where the failure to be so qualified or licensed or to be in good standing, would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect.

(b) The Company has delivered or made available to Parent a true and correct copy of the Organizational Documents of the Company and each of its Subsidiaries. Neither the Company nor any of its Subsidiaries is in violation of any of the provisions of the Organizational Documents. The Company has delivered or made available to Parent true, correct and complete copies of the minute books of the Company and each of its Subsidiaries from May 21, 2011 through the date of this Agreement. Such minute books contain a correct and complete copy of the minutes or written consents of all meetings of the directors, members, partners or shareholders, as applicable, or any committees thereof (or, in the case of any minutes or written consents that have not been finalized, drafts thereof), and such minutes or written consents record, in all material respects, all meetings or material corporate actions held or taken through the date of this Agreement by such directors, members, partners or shareholders, as applicable, or any committees thereof.

(c) Section 3.1(c)(i) of the Company Disclosure Letter lists each of the Subsidiaries of the Company as of the date hereof and its place of organization. Section 3.1(c)(ii) of the Company Disclosure Letter sets forth, for each Subsidiary that is not, directly or indirectly, wholly owned by the Company, (x) the number and type of any capital stock of, or other equity or voting interests in, such Subsidiary that is outstanding as of the date hereof and (y) the number and type of shares of capital stock of, or other equity or voting interests in, such Subsidiary that, as of the date hereof, are owned, directly or indirectly, by the Company and any other Person. All of the outstanding shares of capital stock of, or other equity or voting interests in, each Subsidiary of

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the Company that is owned directly or indirectly by the Company have been validly issued, were issued free of pre-emptive rights and are fully paid and non-assessable, and are free and clear of all Liens, including any restriction on the right to vote, sell or otherwise dispose of such capital stock or other equity or voting interests, except for any Liens (x) imposed by applicable securities Laws or (y) arising pursuant to the Organizational Documents of any non-wholly owned Subsidiary of the Company. Except for the capital stock of, or other equity or voting interests in, its Subsidiaries, the Company does not own, directly or indirectly, any capital stock of, or other equity or voting interests in, any Person.

Section 3.2 Capital Structure.

(a) **Capital Stock.** The authorized capital stock of the Company consists of: (i) 25,000,000 shares of Company Common Stock, par value \$0.01 per share and (ii) 5,000,000 shares of preferred stock, par value \$1.00 per share, of the Company (the "Company Preferred Stock"). As of the close of business on October 17, 2014 (the "Capitalization Date"), (x) 9,574,343 shares of Company Common Stock were issued and outstanding, (y) 1,367,967 shares of Company Common Stock were issued and held by the Company in its treasury and (z) no shares of Company Preferred Stock were issued and outstanding or held by the Company in its treasury, and since the Capitalization Date and through the date hereof, no additional shares of Company Common Stock or Company Preferred Stock have been issued other than the issuance of shares of Company Common Stock upon the exercise or settlement of Company Equity Awards. All of the outstanding shares of capital stock of the Company are, and all shares of capital stock of the Company which may be issued as contemplated or permitted by this Agreement will be, when issued, duly authorized and validly issued, fully paid and non-assessable and not subject to any pre-emptive rights. No Subsidiary of the Company owns any shares of the Company.

(b) **Stock Awards.**

- (i) As of the Capitalization Date, an aggregate of 1,396,469 shares of Company Common Stock were subject to issuance pursuant to Company Stock Options or Company Stock Awards granted under the plans listed in Section 3.2(b) of the Company Disclosure Letter (the plans referred to immediately above and the award or other applicable agreements entered into thereunder, in each case as amended, are collectively referred to herein as the "Company Stock Plans"), and from the Capitalization Date through the date hereof, no Company Equity Awards have been granted. Section 3.2(b)(i) of the Company Disclosure Letter sets forth as of the Capitalization Date a list of each outstanding Company Equity Award granted under the Company Stock Plans and (A) the name of the holder of such Company Equity Award, (B) the number of shares of Company Common Stock subject to such outstanding Company Equity Award, (C) the exercise price, purchase price or similar pricing of such Company Equity Award, (D) the date on which such Company Equity Award was granted or issued, (E) the applicable vesting schedule, and the extent to which such Company Equity Award is vested and exercisable as of the date hereof, and (F) with respect to Company Stock Options, the date on which such Company Stock Option expires. All shares of Company Common Stock subject to issuance under the Company Stock Plans, upon issuance in accordance with the terms and conditions specified in the instruments pursuant to which they are issuable, will be duly authorized, validly issued, fully paid and non-assessable.
- (ii) Except for the Company Stock Plans and as set forth in Section 3.2(b)(ii) of the Company Disclosure Letter, there are no Contracts to which the Company is a party obligating the Company to accelerate the vesting of any Company Equity Award as a result of the transactions contemplated by this Agreement (whether alone or upon the occurrence of any additional or subsequent events). Other than the Company Equity Awards, as of the date hereof, there are no outstanding (A) securities of the Company or any of its Subsidiaries convertible into or exchangeable for Voting Debt or shares of capital stock of the Company, (B) options, warrants or other agreements or commitments to acquire from the Company or any of its Subsidiaries, or obligations of the Company or any of its Subsidiaries to issue, any Voting Debt or shares of capital stock of (or securities convertible into or exchangeable for shares of capital stock of) the Company or (C) restricted shares, restricted stock units, stock appreciation rights, performance shares, profit participation rights, contingent value rights, "phantom" stock or similar securities or rights that are derivative of, or provide economic benefits based, directly or indirectly, on the value or price of, any shares of capital stock of the Company, in each case that have been issued by the Company or its Subsidiaries (the items in clauses (A), (B) and (C)).

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together with the capital stock of the Company, being referred to collectively as “Company Securities”). All outstanding shares of Company Common Stock, all outstanding Company Equity Awards, and all outstanding shares of capital stock, voting securities or other ownership interests in any Subsidiary of the Company, have been issued or granted, as applicable, in compliance in all material respects with all applicable securities Laws.

- (iii) Except for withholding in accordance with the terms of the Company’s equity incentive plans and grant agreements, there are no outstanding Contracts requiring the Company or any of its Subsidiaries to repurchase, redeem or otherwise acquire any Company Securities or Company Subsidiary Securities. Neither the Company nor any of its Subsidiaries is a party to any voting agreement with respect to any Company Securities or Company Subsidiary Securities.

(c) **Voting Debt.** No bonds, debentures, notes or other indebtedness issued by the Company or any of its Subsidiaries (i) having the right to vote on any matters on which stockholders or equityholders of the Company or any of its Subsidiaries may vote (or which is convertible into, or exchangeable for, securities having such right), or (ii) the value of which is directly based upon or derived from the capital stock, voting securities or other ownership interests of the Company or any of its Subsidiaries, are issued or outstanding (collectively, “Voting Debt”).

(d) **Company Subsidiary Securities.** As of the date hereof, there are no outstanding (i) securities of the Company or any of its Subsidiaries convertible into or exchangeable for Voting Debt, capital stock, voting securities or other ownership interests in any Subsidiary of the Company, (ii) options, warrants or other agreements or commitments to acquire from the Company or any of its Subsidiaries, or obligations of the Company or any of its Subsidiaries to issue, any Voting Debt, capital stock, voting securities or other ownership interests in (or securities convertible into or exchangeable for capital stock, voting securities or other ownership interests in) any Subsidiary of the Company, or (iii) restricted shares, restricted stock units, stock appreciation rights, performance shares, profit participation rights, contingent value rights, “phantom” stock or similar securities or rights that are derivative of, or provide economic benefits based, directly or indirectly, on the value or price of, any capital stock or voting securities of, or other ownership interests in, any Subsidiary of the Company, in each case that have been issued by a Subsidiary of the Company (the items in clauses (i), (ii) and (iii), together with the capital stock, voting securities or other ownership interests of such Subsidiaries, being referred to collectively as “Company Subsidiary Securities”).

Section 3.3 Corporate Authority.

(a) The Company has all requisite corporate power and authority and has taken all corporate action necessary in order to execute, deliver and perform its obligations under this Agreement and to consummate the transactions contemplated hereby, subject only to the adoption of this Agreement by the affirmative vote of the holders of at least two-thirds of the outstanding capital stock of the Company entitled to vote thereon (the “Company Stockholder Approval”), and to the filing and recording of the Certificate of Merger under the provisions of the DGCL. The Company Stockholder Approval is the only vote of the holders of any class or series of capital stock of the Company necessary to adopt, approve or authorize this Agreement, the Merger and the other transactions contemplated by this Agreement. This Agreement has been duly authorized and validly executed and delivered by the Company and, assuming due authorization, execution and delivery by Parent and Merger Sub, constitutes a legal, valid and binding obligation of the Company enforceable against the Company in accordance with its terms, subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and similar Laws of general applicability relating to or affecting creditors’ rights and to general equity principles (the “Bankruptcy and Equity Exception”).

(b) As of the date of this Agreement, the Company Board, by resolution duly adopted at a meeting duly called and held, has (i) approved and declared advisable this Agreement and the Merger and the other transactions contemplated by this Agreement; (ii) resolved to recommend adoption of this Agreement to the stockholders of the Company; and (iii) directed that this Agreement be submitted to the stockholders of the Company for adoption.

(c) Assuming the accuracy of the representations and warranties of Parent and Merger Sub set forth in Section 4.20, no “fair price,” “moratorium,” “control share acquisition” or other similar anti-takeover statute or regulation (each, a “Takeover Statute”) or any anti-takeover provision in the Company’s certificate of incorporation and bylaws is, or at the Effective Time will

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be, applicable to the Company Common Stock, the Merger or the other transactions contemplated by this Agreement. Assuming the accuracy of the representations and warranties of Parent and Merger Sub set forth in Section 4.20, the Company Board has taken all action so that Parent will not be prohibited from entering into a “business combination” with the Company (as such term is used in Section 203 of the DGCL) as a result of the execution of this Agreement, or the consummation of the Merger or the other transactions contemplated hereby, without any further action on the part of the Company stockholders or the Company Board.

Section 3.4 Governmental Filings; No Violations, Etc.

(a) Except for the reports, registrations, consents, approvals, permits, authorizations, notices and/or filings (i) pursuant to Section 1.3, (ii) under the Securities Act and the Securities Exchange Act of 1934, as amended (the “Exchange Act”), (iii) required to be made with NASDAQ, (iv) for or pursuant to other applicable foreign securities Law approvals, state securities, takeover and “blue sky” Laws, and (v) as set forth in Section 3.4(a) of the Company Disclosure Letter, no notices, reports or other filings are required to be made by the Company with, nor are any registrations, consents, approvals, permits or authorizations required to be obtained by the Company from any Governmental Entity, in connection with the execution and delivery of this Agreement by the Company and the consummation by the Company of the Merger and the other transactions contemplated by this Agreement, except those that the failure to make or obtain would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect.

(b) None of the execution, delivery or performance of this Agreement by the Company, the consummation by the Company of the Merger or any other transaction contemplated by this Agreement, or the Company’s compliance with any of the provisions of this Agreement will (with or without notice or lapse of time, or both), (i) subject to obtaining the Company Stockholder Approval, conflict with or violate any provision of the Company’s certificate of incorporation or bylaws or any equivalent organizational or governing documents of any of the Company’s Subsidiaries; (ii) conflict with or violate any Law or Order applicable to the Company or any of its Subsidiaries or any of their respective properties or assets; or (iii) except as set forth in Section 3.4(b)(iii) of the Company Disclosure Schedule, require any consent or approval under, violate, conflict with, result in any breach of or any loss of any benefit under, or constitute a default under, or result in termination or give to others any right of termination, vesting, amendment, acceleration or cancellation of, or result in the creation of a Lien, other than Permitted Liens, upon any of the respective properties or assets of the Company or any of its Subsidiaries pursuant to, any Contract, permit or other instrument or obligation to which the Company or any of its Subsidiaries is a party or by which they or any of their respective properties or assets may be bound or affected, except, with respect to clauses (ii) and (iii), for any such conflicts, violations, consents, approvals, authorizations, permits, breaches, losses, defaults, other occurrences or Liens which would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect.

Section 3.5 Company Reports: Financial Statements.

(a) Since January 1, 2011, the Company has timely filed or otherwise furnished (as applicable) all registration statements, prospectuses, forms, reports, definitive proxy statements, schedules, statements and other documents (including exhibits and all other information incorporated by reference) required to be filed by it under the Securities Act or the Exchange Act, as the case may be, together with all certifications required pursuant to the Sarbanes-Oxley Act of 2002 (the “Sarbanes-Oxley Act”) (such documents and any other documents filed by the Company or any of its Subsidiaries with the Securities and Exchange Commission (the “SEC”), including exhibits and other information incorporated therein as they have been supplemented, modified or amended since the time of filing, collectively, the “Company SEC Documents”). As of their respective filing dates (or, if amended or superseded by a filing prior to the date of this Agreement, then on the date of such filing), the Company SEC Documents (i) did not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading and (ii) complied in all material respects with the applicable requirements of the Exchange Act or the Securities Act, as the case may be, the Sarbanes-Oxley Act and the applicable rules and regulations of the SEC thereunder. None of the Company’s Subsidiaries is required to make any filings with the SEC. All of the audited consolidated financial statements and unaudited consolidated interim financial statements of the Company included in the Company SEC Documents (together with the related notes and schedules thereto, collectively, the “Company Financial Statements”) (A) have been prepared from, and are in accordance with, the books and records of the Company and the Company’s Subsidiaries in all material respects,

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(B) have been prepared in accordance with GAAP applied on a consistent basis during the periods involved (except as may be indicated in the notes thereto or, in the case of interim financial statements, for normal and recurring year-end adjustments) and (C) fairly present in all material respects the consolidated financial position and the consolidated results of operations, cash flows and changes in stockholders' equity of the Company and its Subsidiaries as of the dates and for the periods referred to therein.

(b) Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer and each former principal financial officer of the Company, as applicable) has made all certifications required by Rule 13a-14 or 15d-14 under the Exchange Act and Sections 302 and 906 of the Sarbanes-Oxley Act with respect to the Company SEC Documents, and the statements contained in such certifications are true and accurate in all material respects. For purposes of this Agreement, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Sarbanes-Oxley Act. Neither the Company nor any of its Subsidiaries has outstanding (nor has arranged or modified since the enactment of the Sarbanes-Oxley Act) any "extensions of credit" (within the meaning of Section 402 of the Sarbanes-Oxley Act) to directors or executive officers (as defined in Rule 3b-7 under the Exchange Act) of the Company or any of its Subsidiaries. The Company is otherwise in compliance with all applicable provisions of the Sarbanes-Oxley Act and the applicable listing and corporate governance rules of NASDAQ, except for any non-compliance that would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect.

(c) The Company and each of its Subsidiaries has established and maintains a system of "internal controls over financial reporting" (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) that is sufficient to provide reasonable assurance (i) regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, (ii) that receipts and expenditures of the Company and its Subsidiaries are being made only in accordance with authorizations of management and the Company Board, and (iii) regarding prevention or timely detection of the unauthorized acquisition, use or disposition of the Company's and its Subsidiaries' assets that could have a material effect on the Company's financial statements.

(d) The Company's "disclosure controls and procedures" (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act), as required by Rules 13a-15(a) and 15d-15(a) of the Exchange Act, are designed to ensure that all information (both financial and non-financial) required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the SEC, and that all such information is accumulated and communicated to the Company's management as appropriate to allow timely decisions regarding required disclosure and to make the certifications of the chief executive officer and chief financial officer of the Company required under the Exchange Act with respect to such reports. The Company has disclosed, based on its most recent evaluation of such disclosure controls and procedures prior to the date of this Agreement, to the Company's auditors and the audit committee of the Company Board (i) any significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting that could adversely affect in any material respect the Company's ability to record, process, summarize and report financial information, including those matters set forth on Section 3.5(d) of the Company Disclosure Letter, and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal controls over financial reporting. For purposes of this Agreement, the terms "significant deficiency" and "material weakness" shall have the meaning assigned to them in Public Company Accounting Oversight Board Auditing Standard 2, as in effect on the date of this Agreement.

(e) To the Company's Knowledge, none of the Company SEC Documents (other than confidential treatment requests) is the subject of ongoing SEC review. The Company has made available to Parent true and complete copies of all written comment letters from the staff of the SEC received since January 1, 2011 through the date of this Agreement relating to the Company SEC Documents and all written responses of the Company thereto through the date of this Agreement other than with respect to requests for confidential treatment. As of the date of this Agreement, there are no outstanding or unresolved comments in comment letters received from the SEC staff with respect to any Company SEC Documents other than confidential treatment requests. As of the date of this Agreement, there are no SEC inquiries or investigations, other governmental inquiries or investigations, or internal investigations pending or threatened, in each case regarding any accounting practices of the Company.

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Section 3.6 Absence of Certain Changes. Since December 31, 2013, except in connection with the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby, the business of the Company and each of its Subsidiaries has been conducted in the ordinary course of business and there has not been or occurred:

(a) any Company Material Adverse Effect or any event, condition, change or effect that could reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect; or

(b) any event, condition, action or effect that, if taken during the period from the date of this Agreement through the Effective Time, would constitute a breach of Section 5.1.

Section 3.7 No Undisclosed Material Liabilities. There are no liabilities or obligations of the Company or any of its Subsidiaries, whether accrued, absolute, determined or contingent, except for (a) liabilities or obligations disclosed and provided for in the balance sheets included in the Company Financial Statements (or in the notes thereto) filed and publicly available prior to the date of this Agreement; (b) liabilities or obligations incurred in accordance with or in connection with this Agreement; (c) liabilities or obligations incurred since December 31, 2013 in the ordinary course of business consistent with past practice; and (d) liabilities or obligations that have not had and would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect. Neither the Company nor any of its Subsidiaries is a party to, or has any commitment to become a party to, any joint venture, off-balance sheet partnership or any similar Contract or arrangement (including any Contract relating to any transaction or relationship between or among the Company and any of its Subsidiaries, on the one hand, and any unconsolidated Affiliate, including any structured finance, special purpose or limited purpose entity or Person, on the other hand), or any “off-balance sheet arrangements” (as defined in Item 303(a) of Regulation S-K under the Exchange Act), where the result, purpose, or effect of such Contract or arrangement is to avoid disclosure of any material transaction involving, or material liabilities of, the Company or any of its Subsidiaries, in the Company Financial Statements or other Company SEC Documents.

Section 3.8 Litigation.

(a) As of the date of this Agreement, except as set forth in Section 3.8(a) of the Company Disclosure Letter, there are no civil, criminal or administrative actions, suits, claims, hearings, arbitrations, investigations or proceedings (collectively, “Actions”) pending or, to the Company’s Knowledge, threatened against the Company or any of its Subsidiaries or any of their respective assets or properties or, to the Knowledge of the Company, any executive officer or director of the Company or any of its Subsidiaries in their capacities as such, other than any such Action that (i) does not involve an amount in controversy in excess of \$100,000, or (ii) does not seek material injunctive or other material non-monetary relief. None of the Company or any of its Subsidiaries is subject to any order, writ, assessment, decision, injunction, decree, ruling or judgment of a Governmental Entity (“Order”), whether temporary, preliminary or permanent, which would reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect. As of the date hereof, there are no SEC inquiries or investigations, other governmental inquiries or investigations or internal investigations pending or, to the Knowledge of the Company, threatened, in each case regarding any accounting practices of the Company or any of its Subsidiaries or any malfeasance by any executive officer of the Company.

(b) For the avoidance of doubt, the provisions of this Section 3.8 do not apply to Environmental Laws, Environmental Permits or Hazardous Materials, as representations and warranties made by the Company and its Subsidiaries with regard to all environmental matters, including Environmental Laws, Environmental Permits and Hazardous Materials are solely and exclusively made in Section 3.16 of this Agreement.

Section 3.9 Compliance with Laws.

(a) The Company and each of its Subsidiaries is and, since December 31, 2013, has been in compliance with all Laws or Orders applicable to the Company or any of its Subsidiaries or by which the Company or any of its Subsidiaries or any of their respective businesses or properties is bound, except where any such failure to be in compliance has not had, or would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect. To the Company’s Knowledge, no investigation or review by any Governmental Entity with respect to the Company or any of its Subsidiaries is pending or threatened, nor has any Governmental Entity indicated an intention to conduct the same which, in each case, would reasonably be expected to have a Company Material Adverse Effect. The Company is in material compliance with the Foreign Corrupt Practices Act of 1977, as amended (the “FCPA”), and any rules and regulations thereunder, as well as other anti-corruption laws to which it may be subject.

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None of the Company or any of its Subsidiaries, or, to the Company's Knowledge, any director, officer, agent, employee or other Person associated with or acting on behalf of the Company or its Subsidiaries, has, directly or indirectly, provided anything of value to any foreign official, as that term is defined in the FCPA, in connection with obtaining, retaining or otherwise securing an improper advantage in connection with the business of the Company or its Subsidiaries.

(b) For the avoidance of doubt, the provisions of this Section 3.9 do not apply to Environmental Laws, Environmental Permits or Hazardous Materials, as representations and warranties made by the Company and its Subsidiaries with regard to all environmental matters, including Environmental Laws, Environmental Permits and Hazardous Materials are solely and exclusively made in Section 3.16.

Section 3.10 Properties. Except as would not have a Company Material Adverse Effect, the Company and its Subsidiaries, as the case may be, (i) holds good and valid title to all of the properties and assets reflected in the December 31, 2013 balance sheet included in the Company SEC Documents as being owned by the Company or one of its Subsidiaries or acquired after the date thereof that are material to the Company's business on a consolidated basis (except for properties and assets sold or otherwise disposed of since the date thereof in the ordinary course of business) (collectively, with respect to real property, the "Owned Real Property"), free and clear of all Liens, except for Permitted Liens and other matters described in Section 3.10(a) of the Company Disclosure Letter; (ii) holds the Owned Real Property, or any portion thereof or interest therein, free of any outstanding options or rights of first refusal or offer to purchase or lease; (iii) is the lessee or permittee of all leasehold estates reflected in the December 31, 2013 financial statements included in the Company SEC Documents or acquired after the date thereof that are material to the Company's business on a consolidated basis (except for leases that have expired by their terms since the date thereof or been assigned, terminated or otherwise disposed of in the ordinary course of business) (collectively, with respect to real property, the "Leased Real Property"); (iv) is in possession of the Leased Real Property, and each lease underlying the Leased Real Property is valid and in full force and effect, constitutes a valid and binding obligation of the Company or the applicable Subsidiary of the Company, subject to the Bankruptcy and Equity Exception; and (v) has not received any written notice of termination or cancellation of or of a breach or default in connection with the Company Leased Real Property.

Section 3.11 Contracts.

(a) As of the date of this Agreement, except as set forth in Section 3.11(a) of the Company Disclosure Letter, neither the Company nor any of its Subsidiaries is a party to or bound by any:

(i) "material contract" (as such term is defined in Item 601(b)(10) of Regulation S-K under the Securities Act), whether or not filed by the Company with the SEC;

(ii) employment or consulting Contract (in each case with respect to which the Company has continuing obligations as of the date hereof) with any current or former (x) executive officer of the Company, (y) member of the Company Board, or (z) Company Employee providing for an annual base salary in excess of \$150,000;

(iii) Contract providing for indemnification or any guaranty by the Company or any Subsidiary thereof, in each case that is material to the Company and its Subsidiaries, taken as a whole, other than (x) any guaranty by the Company or a Subsidiary thereof of any of the obligations of (A) the Company or another wholly owned Subsidiary thereof or (B) any Subsidiary (other than a wholly owned Subsidiary) of the Company that was entered into in the ordinary course of business pursuant to or in connection with a customer Contract, or (y) any Contract providing for indemnification of customers or other Persons pursuant to Contracts entered into in the ordinary course of business;

(iv) Contract that purports to limit in any material respect the right of the Company or any of its Subsidiaries (or, at any time after the consummation of the Merger, Parent or any of its Subsidiaries) (x) to engage in any line of business, or (y) to compete with any Person or operate in any geographical location;

(v) Contract relating to the disposition or acquisition, directly or indirectly (by merger or otherwise), by the Company or any of its Subsidiaries after the date of this Agreement of assets with a fair market value in excess of \$250,000;

(vi) Contract that contains any provision that requires the purchase of all of the Company's or any of its Subsidiaries' requirements for a given product or service from a given Third Party, which product or service is material to the Company and its Subsidiaries, taken as a whole;

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(vii) Contract that obligates the Company or any of its Subsidiaries to conduct business on an exclusive or preferential basis with any Third Party or upon consummation of the Merger will obligate Parent, the Surviving Corporation or any of their respective Subsidiaries to conduct business on an exclusive or preferential basis with any Third Party;

(viii) Contracts relating to Indebtedness for borrowed money or any guarantee of any Indebtedness for borrowed money (other than in respect of Indebtedness for borrowed money of a wholly owned Subsidiary of the Company) in excess of \$250,000;

(ix) Contracts where the Company or any of its Subsidiaries has received or expects to receive \$250,000 or more in revenues pursuant to such agreements in the current fiscal year;

(x) Contracts with respect to the receipt of any goods and services involving a payment of \$250,000 or more per annum;

(xi) Employee collective bargaining agreement or other Contract with any labor union;

(xii) Joint venture, alliance, partnership or limited liability company agreements or similar Contracts relating to the formation, creation, operation, management or control of any joint venture, alliance, partnership or limited liability company that (A) is material to the Company, any of its Subsidiaries or any of its Subsidiaries; (B) is material to any investment in, or other commitment to, any Related Entity of the Company; or (C) would reasonably be expected to require the Company or its Subsidiaries to make expenditures in excess of \$250,000 or more in the current fiscal year;

(xiii) Contracts that would prevent, materially delay or materially impede the consummation of the transactions contemplated by this Agreement;

(xiv) Contract which is not otherwise described in clauses (i)-(xiii) above that is material to the Company and its Subsidiaries, taken as a whole; or

(xv) Contracts material to the Company's Intellectual Property.

(b) All Contracts to which the Company or any of its Subsidiaries is a party to or bound by as of the date of this Agreement that are of the type described in clause (a) above are referred to herein as the "Company Material Contracts." Except, in each case, as has not, and would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect, (i) all Company Material Contracts are valid and binding on the Company and/or the relevant Subsidiary of the Company that is a party thereto and, to the Company's Knowledge, each other party thereto, subject to the Bankruptcy and Equity Exception, (ii) all Company Material Contracts are in full force and effect, (iii) the Company and each of its Subsidiaries has performed all material obligations required to be performed by them under the Company Material Contracts to which they are parties, (iv) to the Company's Knowledge, each other party to a Company Material Contract has performed all material obligations required to be performed by it under such Company Material Contract and (v) no party to any Company Material Contract has given the Company or any of its Subsidiaries written notice of its intention to cancel, terminate, change the scope of rights under or fail to renew any Company Material Contract and neither the Company nor any of its Subsidiaries, nor, to the Company's Knowledge, any other party to any Company Material Contract, has repudiated in writing any material provision thereof. Neither the Company nor any of its Subsidiaries has Knowledge of, or has received written notice of, any violation of or default under (or any condition which with the passage of time or the giving of notice would cause such a violation of or default under or permit termination, modification or acceleration under) any Company Material Contract or any other Contract to which the Company or any of its Subsidiaries is a party or by which the Company, any of its Subsidiaries or any of their respective material properties or assets is bound, except for violations or defaults that are not, individually or in the aggregate, reasonably likely to result in a Company Material Adverse Effect.

Section 3.12 Employee Benefit Plans.

(a) Section 3.12(a) of the Company Disclosure Letter, sets forth a true, complete and correct list of each material "employee benefit plan" as defined in Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended, and

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the regulations promulgated thereunder (“ERISA”) (whether or not subject to ERISA), and any other material plan, policy, program, practice, agreement, understanding or arrangement (whether written or oral) providing compensation or other benefits to any current or former director, officer, employee or consultant (or to any dependent or beneficiary thereof) of the Company or any ERISA Affiliate, which are now maintained, sponsored or contributed to by the Company or any ERISA Affiliate, or under which the Company or any ERISA Affiliate has any material obligation or liability, whether actual or contingent, including all incentive, bonus, deferred compensation, vacation, holiday, cafeteria, medical, disability, stock purchase, stock option, stock appreciation, phantom stock, restricted stock, restricted stock unit, stock-based compensation, change-in-control, retention, employment, consulting, personnel or severance policies, programs, practices, Contracts or arrangements (each, a “Company Benefit Plan”). For purposes of this Agreement, the term “Foreign Benefit Plans” shall mean those Company Benefit Plans maintained, sponsored or contributed to primarily for the benefit of current or former employees of the Company or any ERISA Affiliate who are or were regularly employed outside the United States. Not more than twenty (20) Business Days after the date of this Agreement, the Company shall deliver a true, complete and correct list of each Foreign Benefit Plan to Parent. For purposes of this Section 3.12 and Section 4.11, “ERISA Affiliate” shall mean any entity (whether or not incorporated) that, together with any other entity, is considered under common control and treated as one employer under Section 414(b) of the Code. The Company has no express or implied commitment to terminate or modify or change any Company Benefit Plan, other than with respect to a termination, modification or change required by this Agreement, ERISA or the Code or which would not, individually or in the aggregate, reasonably be expected to have a Company Material Adverse Effect.

(b) Except as set forth in Section 3.12(b) of the Company Disclosure Letter, with respect to each Company Benefit Plan (including each Foreign Benefit Plan to the extent applicable), the Company has made available to Parent true, complete and correct copies of the following (as applicable): (i) the written document evidencing such Company Benefit Plan or, with respect to any such plan that is not in writing, a written description of the material terms thereof; (ii) the summary plan description; (iii) the most recent annual report, financial statement and/or actuarial report; (iv) the most recent determination letter from the Internal Revenue Service (the “IRS”); (v) the most recent Form 5500 required to have been filed, including all schedules thereto; (vi) any related trust agreements, insurance contracts or other funding arrangements; (vii) any notices to or from the IRS, Department of Labor, Pension Benefit Guaranty Corporation (“PBGC”) or any other Governmental Entity relating to any unresolved compliance issues in respect of any such Company Benefit Plan; and (viii) all material amendments, modifications or supplements to any Company Benefit Plan.

(c) Except as set forth in Section 3.12(c) of the Company Disclosure Letter, each Company Benefit Plan has been administered in all material respects in accordance with its terms, applicable Law (including Section 409A of the Code) and any applicable collective bargaining agreement, including, in all material respects, timely filing of all Tax, annual reporting and other governmental filings required by ERISA and the Code and timely contribution (or, if not yet due, proper financial reporting) of any amounts required to be made under the terms of any of the Company Benefit Plans. With respect to the Company Benefit Plans, no event has occurred and there exists no condition or set of circumstances in connection with which the Company or any of its Subsidiaries would be subject to any liability that, individually or in the aggregate, would reasonably be expected to be material to the Company and its Subsidiaries, taken as a whole. Each Company Benefit Plan that is intended to be “qualified” under Section 401 of the Code has received a favorable determination letter from the IRS to such effect and, to the Company’s Knowledge, no fact, circumstance or event has occurred or exists since the date of such determination letter that would reasonably be expected to adversely affect the qualified status of any such Company Benefit Plan. None of the Company or any of its Subsidiaries has received notice of and, to the Company’s Knowledge, there are no audits or investigations by any Governmental Entity with respect to, or other Actions against or involving any Company Benefit Plan or asserting rights or claims to benefits under any Company Benefit Plan (other than routine claims for benefits payable in the normal course). Other than as set forth in Section 3.12(c) of the Company Disclosure Letter, each Company Benefit Plan subject to ERISA that provides retiree healthcare or life insurance benefits in the United States provides by its terms that it may be amended or terminated without material liability to the Company or any of its Subsidiaries at any time after the Effective Time (other than as required by applicable Law).

(d) Except as set forth in Section 3.12(d) of the Company Disclosure Letter, no Company Benefit Plan is a “multiemployer plan” (as defined in Sections 3(37) and 4001(a)(3) of ERISA) or a “multiple employer plan” within the meaning of Sections 4063/4064 of ERISA or Section 413(c) of the Code and neither the Company nor any ERISA Affiliate has sponsored or contributed to or been required to contribute to, or has any liability with respect to, a “multiemployer plan” or “multiple employer plan.”

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(e) Except as set forth in Section 3.12(e) of the Company Disclosure Letter, neither the Company nor any ERISA Affiliate maintains or contributes to, or in the past has maintained or contributed to, any “employee benefit plan” within the meaning of Section 3(3) of ERISA that is subject to Section 412 of the Code or Section 302 or Title IV of ERISA. With respect to each plan set forth in Section 3.12(e) of the Company Disclosure Letter that is subject to Section 412 of the Code or Section 302 of Title IV of ERISA, except to the extent that the event or condition in question would not give rise to a Company Material Adverse Effect, (i) there does not exist any accumulated funding deficiency within the meaning of Section 412 of the Code or Section 302 of ERISA, whether or not waived; (ii) there has been no “reportable event” within the meaning of Section 4043 of ERISA and the regulations thereunder which required a notice to the PBGC which has not been fully and accurately reported in a timely fashion, as required, or which, whether or not reported, would constitute grounds for the PBGC to institute involuntary termination proceedings with respect to any Company Benefit Plan that is subject to Title IV of ERISA; (iii) all premiums to the PBGC have been timely paid in full; (iv) there has not been a partial termination; and (v) none of the following events has occurred: (A) the filing of a notice of intent to terminate, (B) the treatment of an amendment to such a Company Benefit Plan as a termination under Section 4041 of ERISA or (C) the commencement of proceedings by the PBGC to terminate such a Company Benefit Plan and, to the Company’s Knowledge, no condition exists that presents a substantial risk that such proceedings will be instituted or which would constitute grounds under Section 4042 of ERISA for the termination of, or the appointment of a trustee to administer, any such plan.

(f) Except as set forth in Section 3.12(f) of the Company Disclosure Letter, the execution of this Agreement or the consummation of the Merger will not constitute an event that, either alone or in conjunction with any other event, will or may result in (i) any payment, acceleration, termination, forgiveness of Indebtedness, vesting, distribution, increase in compensation or benefits or obligation to fund benefits with respect to any current or former employee or other personnel of the Company or any of its Subsidiaries, (ii) any amount failing to be deductible by reason of Section 280G of the Code or (iii) the provision of any reimbursement of excise Taxes under Section 4999 of the Code or any income Taxes under the Code.

(g) (i) Each Foreign Benefit Plan has been established, maintained and administered in compliance with its terms and all applicable Laws and Orders of any controlling Governmental Entity; (ii) each Foreign Benefit Plan required to be registered has been registered and has been maintained in good standing with applicable regulatory authorities; and (iii) each Foreign Benefit Plan required to be funded and/or book reserved is funded and/or book reserved, as appropriate, in accordance with applicable Law.

Section 3.13 Labor Matters. Each of the Company and its Subsidiaries is in material compliance with all applicable Laws of the United States, or of any state or local government or any subdivision thereof or of any foreign government respecting employment and employment practices, terms and conditions of employment, wages and hours and occupational safety and health, including without limitation the Immigration Reform and Control Act, the Worker Adjustment Retraining and Notification Act, any Laws respecting employment discrimination, harassment, retaliation, disability rights or benefits, equal opportunity, plant closure or mass or group layoff or separation issues, affirmative action, workers’ compensation, employee benefits, severance payments, COBRA, labor relations, collective bargaining, employee leave issues, wage and hour standards, occupational safety and health requirements and unemployment insurance and related matters. Except as specifically identified on Section 3.13 of the Company Disclosure Letter, neither the Company nor any of its Subsidiaries is a party to or bound by any labor union or collective bargaining agreement. There is no unfair labor practice charge pending or, to the Company’s Knowledge, threatened which if determined adversely to the Company or its Subsidiaries would reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect. To the Company’s Knowledge, there are no organizational campaigns, petitions or other activities or proceedings of any labor union, workers’ council or labor organization (a) seeking to represent employees of the Company or any of its Subsidiaries or recognition by the Company or any of its Subsidiaries as the representative of a collective bargaining unit with respect to any of the employees of the Company or any of its Subsidiaries or (b) compelling the Company or any of its Subsidiaries to bargain with any such labor union, works council or labor organization. There are no material strikes, slowdowns, walkouts, work stoppages or other labor-related controversies pending or, to the Company’s Knowledge, threatened, and neither the Company nor any of its Subsidiaries has experienced any such strike, slowdown, walkout, work stoppage or other labor-related controversy within the past three (3) years.

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Section 3.14 Tax.

(a) (i) All federal and state Tax Returns and all other material Tax Returns that were or are required to be filed on or before the Closing Date by the Company or its Subsidiaries have been or will be timely filed on or before the Closing Date, and all such Tax Returns are or will be true, correct and complete in all material respects and were or will be prepared in substantial compliance with all Applicable Laws; (ii) all Taxes due and owing by the Company or its Subsidiaries (whether or not shown on the Tax Returns referred to in clause (i)) have been or will be timely paid in full on or before the Closing Date; (iii) all deficiencies asserted in writing or assessments made in writing by the relevant Taxing Authority in connection with any of the Tax Returns referred to in clause (i) have been or will be timely paid in full on or before the Closing Date; and (iv) no issues that have been raised in writing by the relevant Taxing Authority in connection with any of the Tax Returns referred to in clause (i) are pending as of the date of this Agreement, or, if pending, have been specifically identified by the Company to Parent and adequately reserved for in the Company Financial Statements. Neither the Company nor any of its Subsidiaries currently is the beneficiary of any extension of time within which to file any Tax Return.

(b) No federal, state, local or non-U.S. tax audits or administrative or judicial Tax proceedings are pending or being conducted with respect to the Company or any of its Subsidiaries. Neither the Company nor its Subsidiaries has received from any federal, state, local or non-U.S. Taxing Authority (including jurisdictions where the Company or its Subsidiaries have not filed Tax Returns) any (i) written notice indicating an intent to open an audit or other review; (ii) request for information related to Tax matters; or (iii) notice of deficiency or proposed adjustment for any amount of Tax proposed, asserted or assessed by any Taxing Authority against the Company or any of its Subsidiaries. Section 3.14(b) of the Company Disclosure Letter lists all Tax Returns filed by the Company and its Subsidiaries for taxable periods ended on or after December 31, 2012, indicates those Tax Returns that have been audited and indicates those Tax Returns that currently are the subject of audit. Parent has received (or had made available to it) correct and complete copies of all federal and state income Tax Returns filed by the Company and each of its Subsidiaries for taxable periods ended on or after December 31, 2012 and all examination reports and statements of deficiencies related to federal and state income Tax assessed against or agreed to by the Company or any of its Subsidiaries with respect to those taxable periods.

(c) There are no Liens on the Company's or any of its Subsidiaries' assets that arose in connection with any failure (or alleged failure) to pay any Tax other than Liens for Taxes not yet due and payable or which the validity thereof is being contested in good faith by appropriate proceedings and for which adequate accruals or reserves have been established in accordance with GAAP in the Company Financial Statements.

(d) Neither the Company nor any of its Subsidiaries has waived any statute of limitations in respect of income Taxes or agreed to any extension of time with respect to an income Tax assessment or deficiency.

(e) The Company and its Subsidiaries have withheld and paid all Taxes required to have been withheld and paid in connection with any amounts paid or owing to any employee, independent contractor, creditor, shareholder or other Third Party.

(f) Except as listed on Section 3.14(f) of the Company Disclosure Letter, neither the Company nor any of its Subsidiaries is (or has been) a party to any Tax allocation or sharing agreement. Neither the Company nor any of its Subsidiaries (A) has been a member of an Affiliated Group filing a consolidated federal Tax Return (other than a group the common parent of which was the Company); or (B) has any liability for Taxes of any Person (other than the Company or any of its Subsidiaries) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local, or non-U.S. law) as a transferee, successor, by contract or otherwise. Any Tax allocation or sharing agreement that is listed on Section 3.14(f) of the Company Disclosure Letter will be terminated as of the Closing Date and will have no further effect for any taxable year (whether the current year, a future year or a past year). As of the Closing Date, the Company and its Subsidiaries shall have no further liability or claim under such Tax allocation or sharing agreements.

(g) Except as listed on Schedule 3.14(g) of the Company Disclosure Letter, there are no joint ventures, partnerships, limited liability companies, or other arrangements or contracts to which the Company or any Subsidiary is a party and that could be treated as a partnership for federal income Tax purposes.

(h) Neither the Company nor any Subsidiary has, nor has it ever had, a "permanent establishment" in any foreign country, as such term is defined in any applicable Tax treaty or convention between the United States and such foreign country, nor has it otherwise taken steps that have exposed, or will expose, it to the taxing jurisdiction of a foreign country.

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(i) No claim has been made in the last five (5) years by a Taxing Authority in a jurisdiction where the Company or any Subsidiary does not file Tax Returns that the Company (or such Subsidiary) is or may be subject to taxation by that jurisdiction nor is there any factual or legal basis for any such claim.

(j) Neither the Company nor any Subsidiary has, in the last five (5) years, distributed stock of another corporation, or had its stock distributed by another corporation, in a transaction that was purported or intended to be governed in whole or in part by Section 355 or 361 of the Code.

(k) Neither the Company nor any Subsidiary is or has been a United States real property holding corporation (as defined in Section 897(c)(2) of the Code) during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code.

(l) Neither the Company nor any Subsidiary participates in or cooperates with (or has at any time participated in or cooperated with) an international boycott within the meaning of Section 999 of the Code.

(m) Neither the Company nor any Subsidiary has engaged in any transaction that, as of the date hereof, is a “listed transaction” under Treasury Regulations Section 1.6011-4(b)(2). The Company and each Subsidiary have disclosed in their Tax Returns all information required by the provisions of the Treasury Regulations issued under Section 6011 of the Code with respect to any “reportable transaction” as that term is defined in Section 6707A(c) of the Code.

(n) No gain recognition agreements have been entered into by either the Company or any Subsidiary, and, except as listed on Section 3.14(n) of the Company Disclosure Letter, neither the Company nor any of its Subsidiaries has obtained a private letter ruling or closing agreements from the Internal Revenue Service (or any comparable ruling from any other Taxing Authority).

(o) Neither the Company nor any Subsidiary is or has at any time been (A) a “controlled foreign corporation” as defined by Section 957 of the Code; (B) a “personal holding company” as that term has been defined from time to time in Section 542 of the Code; (C) a “passive foreign investment company” nor has the Company or any Subsidiary at any time held directly, indirectly, or constructively shares of any “passive foreign investment company” as that term has been defined from time to time in Section 1296 or 1297 of the Code.

(p) The Company and each Subsidiary is in full compliance with all the terms and conditions of any Tax exemption or other Tax reduction agreement or order of a foreign or state government and the consummation of the transactions contemplated by this Agreement and will not have any adverse effect on the continued validity and effectiveness of any such Tax exemption or other Tax reduction agreement or order.

(q) Except as listed on Section 3.14(q) of the Company Disclosure Letter, there is no agreement, contract or arrangement to which the Company or any Subsidiary is a party that could, individually or collectively, result in the payment of any amount that would not be deductible by reason of Sections 280G (as determined without regard to Section 280G(b)(4) or any corresponding provision of state, local or non-U.S. Tax law), 162 (other than 162(a)), or 404 of the Code.

(r) Neither the Company nor any Subsidiary has been, nor will any of them be, required to include any item of income in, or exclude any item of deduction from, taxable income for any Tax period (or portion thereof) ending after the Closing Date (i) pursuant to Section 481 of the Code or any comparable provision under state or foreign Tax Laws as a result of transactions, events, or accounting methods employed prior to the transactions contemplated hereby, (ii) as a result of any installment sale or open transaction disposition made on or prior to the Closing Date, (iii) as a result of any prepaid amount received on or prior to the Closing Date; (iv) as a result of an election under Section 108(i) of the Code; or (v) intercompany transaction or excess loss account described in Treasury Regulations under Section 1502 of the Code (or any corresponding or similar provision of state, local or non-U.S. income Tax law).

(s) The Company and its Subsidiaries have complied in all material respects with all applicable unclaimed property Laws. Without limiting the generality of the foregoing, the Company and each Subsidiary has established and followed procedures to identify any unclaimed property and, to the extent required by Law, remit such unclaimed property to the

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applicable Governmental Entity. The Company's and each Subsidiary's records are adequate to permit a Governmental Entity or other outside auditor to confirm the foregoing representations.

(t) All transactions for taxable years for which the statute of limitations is still open (including but not limited to sales of goods, loans, and provision of services) between (i) the Company or any Subsidiary and (ii) any other Person that is controlled directly or indirectly by the Company (within the meaning of Section 482 of the Code) were effected on arms'-length terms and for fair market value consideration.

(u) The unpaid Taxes of the Company and each Subsidiary (i) did not exceed the reserve for Tax liability (other than any reserve for deferred Taxes established to reflect timing differences between book and Tax income) set forth on the face of the Company Financial Statements (rather than in any notes thereto) and (ii) will not exceed that reserve as adjusted for the passage of time through the Closing Date in accordance with the past custom and practice of the Company and each Subsidiary in filing its Tax Returns. Since the filing of the Company Financial Statements, neither the Company nor any Subsidiary has incurred any liability for Taxes arising from extraordinary gains or losses, as that term is used in GAAP, outside the ordinary course of business consistent with past custom and practice.

(v) The Company operates at least one significant historic business line, or owns at least a significant portion of its historic business assets, in each case within the meaning of Treasury Regulations Section 1.368-1(d).

(w) The Company has provided or otherwise made available to Parent all of the Company's and its Subsidiaries' books and records with respect to Tax matters pertinent to the Company or its Subsidiaries relating to any Tax periods commencing on or before the Closing Date including all Tax opinions relating to and in the audit files of the Company or its Subsidiaries that have been received since December 31, 2011.

Section 3.15 Intellectual Property.

(a) Except as, individually or in the aggregate, would not reasonably be expected to have a Company Material Adverse Effect, (i) the Company and each of its Subsidiaries owns, or is licensed to use (in each case, free and clear of any Liens, other than Permitted Liens), all Intellectual Property used in its business as currently conducted; (ii) the conduct of its business as currently conducted, including the use of any Intellectual Property by the Company or its Subsidiaries, does not infringe on, misappropriate or otherwise violate the rights of any Person and is in accordance with any applicable license pursuant to which the Company or any Subsidiary acquired the right to use any Intellectual Property; (iii) no Person is challenging, infringing on, misappropriating or otherwise violating any right of the Company or any of its Subsidiaries with respect to any Intellectual Property owned by the Company or its Subsidiaries; and (iv) neither the Company nor any of its Subsidiaries has received any written notice or otherwise has Knowledge of any pending claim, Order or proceeding with respect to any Intellectual Property used by the Company or its Subsidiaries and no Intellectual Property owned by the Company or its Subsidiaries is being used or enforced in a manner that would reasonably be expected to result in the abandonment, cancellation or unenforceability of such Intellectual Property.

(b) The Company and its Subsidiaries have taken all commercially reasonable steps to protect the confidentiality and value of all material trade secrets and any other material confidential information that are owned, used or held by the Company or its Subsidiaries in confidence, including entering into licenses and Contracts that require licensees, contractors, or other Persons with access to trade secrets or other confidential information to safeguard and maintain the secrecy and confidentiality of such trade secrets. To the Company's Knowledge, such trade secrets have not been used, disclosed to or discovered by any Person except pursuant to a valid and appropriate non-disclosure agreement, license or any other appropriate Contract which has not been breached.

(c) The consummation of the transactions contemplated by this Agreement will not diminish or terminate the ownership of or rights in any material Intellectual Property owned or used by the Company or its Subsidiaries in their respective businesses as currently conducted and, after the Closing Date, the Company and its Subsidiaries will have the right to use such Intellectual Property on the same basis as prior to the consummation of the transactions contemplated by this Agreement.

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Section 3.16 Environmental Matters.

(a) The Company and its Subsidiaries are, and have been for the past five (5) years, in material compliance with all Environmental Laws, and any past material noncompliance by the Company and its Subsidiaries with Environmental Laws has been resolved.

(b) (i) Each of the Company and its Subsidiaries has, as applicable, developed and submitted or obtained, maintained and materially complied with all Environmental Permits that are required for the conduct and operation of its business, and the Company or any applicable Subsidiary of the Company has not received any written notice that any such Environmental Permit is not in full force and effect; and (ii) to the Company's Knowledge, no such Environmental Permit is or will be subject to review, revision, major modification, voidance or prior consent by any Governmental Entity as a result of the consummation of the transactions contemplated by this Agreement.

(c) Except as set forth in Section 3.16(c) of the Company Disclosure Letter, none of the Company or any of its Subsidiaries has received any written notice of any violation of, or liability under, Environmental Laws or Environmental Permits or with respect to Hazardous Materials in the last five (5) years or that remains open or not fully resolved or otherwise terminated.

(d) Except as set forth in Section 3.16(c) of the Company Disclosure Letter, there are no pending or, to the Company's Knowledge, threatened, civil, criminal or administrative Actions, notices of violation, arbitrations, which, in each instance, is alleged against the Company or any of its Subsidiaries or related to the Owned Real Property or the Leased Real Property or any other property previously owned or operated by the Company or any of its Subsidiaries for which the Company or any of its Subsidiaries retains any liabilities.

(e) Neither the Company nor any of its Subsidiaries has Released or received a written notice of a Release of Hazardous Materials and, to the Company's Knowledge, none of them has other notice of a Release of any Hazardous Materials on, at, or from the Owned Real Property or the Leased Real Property, except for any release (i) that is (A) in compliance with Environmental Laws or Environmental Permits and (B) occurring in a manner or in quantities or locations that would not require any investigation or remediation of soil or groundwater or any other environmental media, including in an offshore environment, under Environmental Laws, or (ii) that would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect.

(f) Except as set forth in Section 3.16(c) of the Company Disclosure Letter, neither the Company nor any of its Subsidiaries has transported or disposed of, or arranged for the transport or disposal of any Hazardous Material at or to any off-site location which, to the Company's Knowledge, has resulted in, or would reasonably be expected to result in, a liability to the Company.

(g) The Company has provided to Parent true and complete copies of, or access to, correct and complete copies of (i) all Environmental Permits currently in effect; and (ii) results of any material reports, assessments, studies, analyses, tests, correspondence or monitoring, possessed or initiated by the Company or any of its Subsidiaries pertaining to Hazardous Materials in, on or under their Owned Real Property or Leased Real Property, or concerning compliance by the Company or any of its Subsidiaries with Environmental Laws.

Section 3.17 Insurance. Except as has not had, and would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect, (a) each insurance policy under which the Company or any of its Subsidiaries is an insured or otherwise the principal beneficiary of coverage (each an "Insurance Policy") is in full force and effect, all premiums due thereon have been paid in full and the Company and its Subsidiaries are in compliance with the terms and conditions of such Insurance Policy; (b) neither the Company nor any of its Subsidiaries is in breach or default under any Insurance Policy; and (c) no event has occurred which, with notice or lapse of time, would constitute such breach or default, or permit termination or modification, under any Insurance Policy.

Section 3.18 Regulatory Matters: Permits.

(a) Each of the Company and its Subsidiaries holds all licenses, permits, franchises, variances, registrations, exemptions, Orders and other governmental authorizations, consents, approvals and clearances with, and has submitted notices to,

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all Governmental Entities necessary for the lawful operating of the businesses of the Company or any of its Subsidiaries as currently conducted (the “Company Permits”), and to the Company’s Knowledge all such Company Permits are valid, and in full force and effect. Since January 1, 2013, there has not occurred any violation of, default (with or without notice or lapse of time or both) under, or event giving to others any right of termination, amendment or cancellation of, with or without notice or lapse of time or both, any Company Permit. The Company and each of its Subsidiaries are in compliance in all material respects with the terms of all Company Permits, and no event has occurred that would reasonably be expected to result in the revocation, cancellation, non-renewal or adverse modification of any Company Permit.

(b) For the avoidance of doubt, the provisions of this Section 3.18 do not apply to Environmental Laws, Environmental Permits or Hazardous Materials, as representations and warranties made by the Company and its Subsidiaries with regard to all environmental matters, including Environmental Laws, Environmental Permits and Hazardous Materials, are solely and exclusively made in Section 3.16 of this Agreement.

Section 3.19 Interested Party Transactions. Except as disclosed in Section 3.19 of the Company Disclosure Letter, since January 1, 2013, there have been no transactions, agreements, arrangements or understandings between the Company or any of its Subsidiaries on the one hand, and the Affiliates of the Company on the other hand (other than the Company’s Subsidiaries), that would be required to be disclosed under Item 404 of Regulation S-K under the Exchange Act and that has not been so disclosed.

Section 3.20 Company Information. The information relating to the Company or any Subsidiary of the Company to be included or incorporated by reference in the Joint Proxy Statement and the Form S-4 will not, at the time the Form S-4 is declared effective, the time the Joint Proxy Statement is first mailed to stockholders of the Company and Parent and the time of the Company Stockholder Meeting and the Parent Stockholder Meeting, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances in which they are made, not misleading. The information relating to the Company or any Subsidiary of the Company that is provided or to be provided by the Company or its Representatives for inclusion in any document (other than the Form S-4) filed with any other Governmental Entity in connection with the transactions contemplated by this Agreement will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances in which they are made, not misleading. All documents that the Company is responsible for filing with the SEC in connection with the Merger or the other transactions contemplated hereby (including the Joint Proxy Statement and the Form S-4) (except for such portions thereof that relate only to Parent, Merger Sub or any of their Subsidiaries) will comply as to form and substance in all material respects with the provisions of the Securities Act and the Exchange Act.

Section 3.21 Company Ownership of Parent Securities. Prior to the Parent Board approving this Agreement, the Merger and the other transactions contemplated hereby for purposes of the applicable provisions of the DGCL, neither the Company nor any of its Subsidiaries, alone or together with any other Person, was at any time, or became, an “interested stockholder” (as such term is defined in Section 203 of the DGCL) thereunder or has taken any action that would cause any anti-takeover statute under the DGCL or other applicable state Law to be applicable to this Agreement, the Merger, or any of the transactions contemplated hereby. None of the Company or any of its Subsidiaries has any direct or indirect beneficial ownership, or sole or shared voting power, with respect to any shares of Parent Common Stock.

Section 3.22 Opinion of Financial Advisor. The Company has received the opinion of Needham & Company, LLC, financial advisor to the Company (the “Company Financial Advisor”), to the effect that, as of the date of this Agreement, and based upon and subject to the factors and assumptions set forth therein, the Exchange Ratio is fair to the Company’s stockholders from a financial point of view.

Section 3.23 Brokers and Finders. Neither the Company nor any of its Subsidiaries has employed any broker or finder or incurred any liability for any brokerage fees, commissions or finder’s fees in connection with the Merger or the other transactions contemplated by this Agreement, except that the Company has retained the Company Financial Advisor, and the Company has heretofore made available to Parent a true and complete copy of all agreements between the Company and the Company Financial Advisor pursuant to which such firm would be entitled to any payment relating to the Merger and the other transactions contemplated by this Agreement.

Section 3.24 Related Entity Representations. Neither the Company nor any of its Subsidiaries has any Related Entity.

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Section 3.25 Tax-Free Reorganization. Neither the Company nor any of its Subsidiaries has taken any action, and the Company is not aware of any fact or circumstance, that would reasonably be expected to prevent the Merger from qualifying as a Tax-Free Reorganization.

Section 3.26 No Additional Representations.

(a) Except for the representations and warranties made in this Article III, neither the Company nor any other Person makes any express or implied representation or warranty with respect to the Company or its Subsidiaries or Related Entities or their respective businesses, operations, assets, liabilities, conditions (financial or otherwise) in connection with this Agreement or the transactions contemplated hereby, and the Company hereby disclaims any such other representations or warranties. In particular, without limiting the foregoing disclaimer, neither the Company nor any other Person makes or has made any representation or warranty to Parent, Merger Sub, or any of their Affiliates or Representatives with respect to (i) any financial projection, forecast, estimate, budget or prospect information relating to the Company, any of its Subsidiaries or Related Entities or their respective businesses; or (ii) except for the representations and warranties made by the Company in this Article III, any oral or written information presented to Parent, Merger Sub or any of their Affiliates or Representatives in the course of their due diligence investigation of the Company, the negotiation of this Agreement or in the course of the transactions contemplated hereby.

(b) The Company acknowledges and agrees that it has (i) had the opportunity to meet with the management of Parent and to discuss the business, assets and liabilities of Parent and its Subsidiaries and Related Entities; (ii) been afforded the opportunity to ask questions of and receive answers from officers of Parent; and (iii) conducted its own independent investigation of Parent and its Subsidiaries and Related Entities, their respective businesses, assets, liabilities and the transactions contemplated by this Agreement.

(c) Notwithstanding anything contained in this Agreement to the contrary, the Company acknowledges and agrees that none of Parent, Merger Sub or any other Person has made or is making any representations or warranties relating to Parent or its Subsidiaries (including Merger Sub) or Related Entities whatsoever, express or implied, beyond those expressly given by Parent and Merger Sub in Article IV, including any implied representation or warranty as to the accuracy or completeness of any information regarding Parent furnished or made available to the Company, or any of its Representatives. Without limiting the generality of the foregoing, the Company acknowledges that no representations or warranties are made with respect to any projections, forecasts, estimates, budgets or prospect information that may have been made available to the Company or any of its Representatives.

ARTICLE IV REPRESENTATIONS AND WARRANTIES OF PARENT AND MERGER SUB

Except (i) as disclosed in the Parent SEC Documents filed since June 30, 2014 but prior to the date of this Agreement (but excluding any disclosures contained under the heading “Risk Factors” or “forward looking statements” or any other disclosures included in such filings to the extent that they are forward-looking statements or cautionary, nonspecific, predictive or forward-looking in nature) or (ii) as set forth in the Parent Disclosure Letter delivered by Parent to the Company prior to or concurrent with the execution of this Agreement (the “Parent Disclosure Letter”), each of Parent and Merger Sub hereby represents and warrants to the Company as follows:

Section 4.1 Organization, Good Standing and Qualification.

(a) Each of Parent and Merger Sub is a corporation duly organized, validly existing and in good standing (with respect to jurisdictions that recognize the concept of good standing) under the Laws of its jurisdiction of organization and has all requisite corporate or similar power and authority to own, lease and operate its properties and assets and to carry on its business as presently conducted, except where the failure to be so qualified or in good standing, or to have such power or authority when taken together with all other such failures, has not, and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect. Each of Parent and Merger Sub is duly qualified or licensed to do business and is in

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good standing (with respect to jurisdictions that recognize the concept of good standing) as a foreign corporation in each jurisdiction where the ownership, leasing or operation of its assets or properties or conduct of its business requires such qualification, except where the failure to be so organized, qualified or in good standing, or to have such power or authority when taken together with all other such failures, has not, and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

(b) Parent has delivered or made available to Company a true and correct copy of the Organizational Documents for Parent and Merger Sub. Each of Parent and Merger Sub is not in violation of any of the provisions of its Organizational Documents.

(c) Section 4.1(c)(i) of the Parent Disclosure Letter lists each Subsidiary of Parent as of the date hereof and its place of organization. Section 4.1(c)(ii) of the Parent Disclosure Letter sets forth, for each Subsidiary that is not, directly or indirectly, wholly owned by the Parent, (x) the number and type of any capital stock of, or other equity or voting interests in, such Subsidiary that is outstanding as of the date hereof and (y) the number and type of shares of capital stock of, or other equity or voting interests in, such Subsidiary that, as of the date hereof, are owned, directly or indirectly, by the Parent and any other Person. Except for the capital stock of, or other equity or voting interests in, its Subsidiaries, the Parent does not own, directly or indirectly, any capital stock of, or other equity or voting interests in, any Person.

Section 4.2 Capital Structure.

(a) **Capital Stock.** The authorized capital stock of Parent consists of: (i) 100,000,000 shares of Parent Common Stock and (ii) 100,000,000 shares of preferred stock, par value \$0.01 per share. As of the Capitalization Date, (x) 9,848,253 shares of Parent Common Stock were issued and outstanding, (y) zero shares were issued and held by Parent in its treasury and (z) zero shares of Parent's preferred stock were issued and outstanding or held by Parent in its treasury. All of the outstanding shares of Parent's Common Stock and Preferred Stock are, and all shares of capital stock of the Merger Sub which may be issued or exchanged as contemplated or permitted by this Agreement will be, when issued, duly authorized and validly issued, fully paid and non-assessable. All of the issued and outstanding capital stock of Merger Sub is, and at the Effective Time will be, owned by Parent.

(b) **Stock Awards.**

- (i) As of the Capitalization Date, an aggregate of 1,098,527 shares of Parent Common Stock were subject to issuance pursuant to stock options or stock awards granted by Parent under the plans listed in Section 4.2(b) of the Parent Disclosure Letter (the plans referred to immediately above and the award or other applicable agreements entered into thereunder, in each case as amended, are collectively referred to herein as the "Parent Stock Plans").
- (ii) Except for securities or rights issued pursuant to the Parent Stock Plans and as set forth in Section 4.2(b)(ii) of the Parent Disclosure Letter, there are no outstanding (A) securities of Parent or any of its Subsidiaries convertible into or exchangeable for shares of capital stock of Parent, (B) options, warrants or other agreements or commitments to acquire from Parent or any of its Subsidiaries, or obligations of Parent or any of its Subsidiaries to issue, any shares of capital stock of (or securities convertible into or exchangeable for shares of capital stock of) Parent or (C) restricted shares, restricted stock units, stock appreciation rights, performance shares, profit participation rights, contingent value rights, "phantom" stock or similar securities or rights that are derivative of, or provide economic benefits based, directly or indirectly, on the value or price of, any shares of capital stock of Parent, in each case that have been issued by Parent or its Subsidiaries.

Section 4.3 Corporate Authority.

(a) Each of Parent and Merger Sub has all requisite corporate power and authority and has taken all corporate action necessary in order to execute, deliver and perform its obligations under this Agreement and to consummate the transactions contemplated hereby, subject, only to the adoption of this Agreement by the affirmative vote of the holders of a majority of the outstanding capital stock of the Company entitled to vote thereon (the "Parent Stockholder Approval"), and to the filing and

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recording of the Certificate of Merger under the provisions of the DGCL. Parent, as the sole stockholder of Merger Sub, will adopt and approve this Agreement and the transactions contemplated hereby immediately following execution of this Agreement by the Parties hereto. The Parent Stockholder Approval is the only vote of the holders of any class or series of capital stock of the Parent or Merger Sub necessary to adopt, approve or authorize this Agreement, the Merger, the Parent Share Issuance and the other transactions contemplated by this Agreement. This Agreement has been duly authorized and validly executed and delivered by Parent and Merger Sub and, assuming due authorization, execution and delivery by the Company, constitutes a legal, valid and binding obligation of Parent and Merger Sub enforceable against Parent and Merger Sub in accordance with its terms, subject to the Bankruptcy and Equity Exception.

(b) As of the date of this Agreement, the Parent Board, by resolution duly adopted at a meeting duly called and held, has (i) approved and declared advisable this Agreement, the Merger, the Parent Share Issuance and the other transactions contemplated by this Agreement; (ii) resolved to recommend approval of the Parent Share Issuance to the stockholders of Parent; and (iii) directed that the Parent Share Issuance be submitted to the stockholders of Parent for approval.

(c) Assuming the accuracy of the representations and warranties of the Company set forth in Section 3.21 no Takeover Statute or any anti-takeover provision in Parent's certificate of incorporation and bylaws is, or at the Effective Time will be, applicable to the Parent Common Stock, the Merger or the other transactions contemplated by this Agreement. Assuming the accuracy of the representations and warranties of the Company set forth in Section 3.21, the Parent Board has taken all action so that the Company will not be prohibited from entering into a "business combination" with Parent (as such term is used in Section 203 of the DGCL) as a result of the execution of this Agreement, or the consummation of the Merger or the other transactions contemplated hereby, without any further action on the part of Parent stockholders or the Parent Board.

(d) The Parent Rights Agreement and the rights issued thereunder are not applicable to (and no consequences thereunder are triggered by) the execution and announcement of this Agreement and each of the Company Support Agreements and Parent Support Agreements, and the consummation of the transactions contemplated thereby, including the Merger.

Section 4.4 Governmental Filings: No Violations, Etc

(a) Except for the reports, registrations, consents, approvals, permits, authorizations, notices and/or filings (i) pursuant to Section 1.3, (ii) under the Securities Act and the Exchange Act, (iii) required to be made with NASDAQ, (iv) for or pursuant to other applicable foreign securities Law approvals, state securities, takeover and "blue sky" Laws, and (v) as set forth in Section 4.4(a) of the Parent Disclosure Letter, no notices, reports or other filings are required to be made by Parent or Merger Sub with, nor are any registrations, consents, approvals, permits or authorizations required to be obtained by Parent or Merger Sub from, any Governmental Entity, in connection with the execution and delivery of this Agreement by Parent or Merger Sub and the consummation by Parent or Merger Sub of the Merger and the other transactions contemplated by this Agreement, except those that the failure to make or obtain would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

(b) None of the execution, delivery or performance of this Agreement by Parent or Merger Sub, the consummation by Parent of the Merger or any other transaction contemplated by this Agreement, or Parent's or Merger Sub's compliance with any of the provisions of this Agreement will (with or without notice or lapse of time, or both), (i) subject to obtaining the Parent Stockholder Approval, conflict with or violate any provision of Parent's or Merger Sub's certificate of incorporation or bylaws or any equivalent organizational or governing documents of any of Parent's or Merger Sub's Subsidiaries; (ii) conflict with or violate any Law or Order applicable to Parent, Merger Sub, or any of their Subsidiaries or any of their respective properties or assets; or (iii) except as set forth in Section 4.4(b)(iii) of the Parent Disclosure Letter, require any consent or approval under, violate, conflict with, result in any breach of or any loss of any benefit under, or constitute a default under, or result in termination or give to others any right of termination, vesting, amendment, acceleration or cancellation of, or result in the creation of a Lien, other than Permitted Liens, upon any of the respective properties or assets of Parent or any of its Subsidiaries pursuant to, any Contract, permit or other instrument or obligation to which Parent, Merger Sub or any of their Subsidiaries is a party or by which they or any of their respective properties or assets may be bound or affected, except, with respect to clauses (ii) and (iii), for any such conflicts, violations, consents, approvals, authorizations, permits, breaches, losses, defaults, other occurrences or Liens which would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

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Section 4.5 Parent Reports; Financial Statements

(a) Except as set forth in Section 4.5(a) of the Parent Disclosure Letter, since January 1, 2011, each of Parent and Merger Sub has timely filed or otherwise furnished (as applicable) all registration statements, prospectuses, forms, reports, definitive proxy statements, schedules, statements and other documents (including exhibits and other information incorporated by reference) required to be filed by it under the Securities Act or the Exchange Act, as the case may be, together with all certifications required pursuant to the Sarbanes-Oxley Act (such documents and any other documents filed by Parent or any of its Subsidiaries with the SEC, including exhibits and other information incorporated therein as they have been supplemented, modified or amended since the time of filing, collectively, the “Parent SEC Documents”). As of their respective filing dates (or, if amended or superseded by a filing prior to the date of this Agreement, then on the date of such filing), the Parent SEC Documents (i) did not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading and (ii) complied in all material respects with the applicable requirements of the Exchange Act or the Securities Act, as the case may be, the Sarbanes-Oxley Act and the applicable rules and regulations of the SEC thereunder. All of the audited consolidated financial statements and unaudited consolidated interim financial statements of Parent included in the Parent SEC Documents (together with the related notes and schedules thereto, collectively, the “Parent Financial Statements”) (A) have been prepared from, and are in accordance with, the books and records of Parent and Parent’s Subsidiaries in all material respects, (B) have been prepared in accordance with GAAP applied on a consistent basis during the periods involved (except as may be indicated in the notes thereto or, in the case of interim financial statements, for normal and recurring year-end adjustments) and (C) fairly present in all material respects the consolidated financial position and the consolidated results of operations, cash flows and changes in stockholders’ equity of Parent and its Subsidiaries as of the dates and for the periods referred to therein.

(b) Each of the principal executive officer and the principal financial officer of Parent (or each former principal executive officer and each former principal financial officer of the Company, as applicable) has made all certifications required by Rule 13a-14 or 15d-14 under the Exchange Act and Sections 302 and 906 of the Sarbanes-Oxley Act with respect to Parent SEC Documents, and the statements contained in such certifications are true and accurate in all material respects. Neither the Parent nor any of its Subsidiaries has outstanding (nor has arranged or modified since the enactment of the Sarbanes-Oxley Act) any “extensions of credit” (within the meaning of Section 402 of the Sarbanes-Oxley Act) to directors or executive officers (as defined in Rule 3b-7 under the Exchange Act) of Parent or any of its Subsidiaries. The Parent is otherwise in compliance with all applicable provisions of the Sarbanes-Oxley Act and the applicable listing and corporate governance rules of NASDAQ, except for any non-compliance that would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

(c) Parent and each of its Subsidiaries has established and maintains a system of “internal controls over financial reporting” (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) that is sufficient to provide reasonable assurance (i) regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, (ii) that receipts and expenditures of Parent and its Subsidiaries are being made only in accordance with authorizations of management and the Parent Board, and (iii) regarding prevention or timely detection of the unauthorized acquisition, use or disposition of Parent’s and its Subsidiaries’ assets that could have a material effect on Parent’s financial

(d) Parent’s “disclosure controls and procedures” (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act), as required by Rules 13a-15(a) and 15d-15(a) of the Exchange Act, are designed to ensure that all information (both financial and non-financial) required to be disclosed by Parent in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the SEC, and that all such information is accumulated and communicated to the Parent’s management as appropriate to allow timely decisions regarding required disclosure and to make the certifications of the chief executive officer and chief financial officer of Parent required under the Exchange Act with respect to such reports. Parent has disclosed, based on its most recent evaluation of such disclosure controls and procedures prior to the date of this Agreement, to Parent’s auditors and the audit committee of Parent Board and on Section 4.5(d) of the Parent Disclosure Letter (i) any significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting that could adversely affect in any material respect the Parent’s ability to record, process, summarize and report financial information, and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in Parent’s internal controls over financial reporting.

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(e) To Parent's Knowledge, none of the Parent SEC Documents (other than confidential treatment requests) is the subject of ongoing SEC review. Parent has made available to the Company true and complete copies of all written comment letters from the staff of the SEC received since January 1, 2011 through the date of this Agreement relating to the Parent SEC Documents and all written responses of Parent thereto through the date of this Agreement other than with respect to requests for confidential treatment. As of the date of this Agreement, there are no outstanding or unresolved comments in comment letters received from the SEC staff with respect to any Parent SEC Documents other than confidential treatment requests. As of the date of this Agreement, there are no SEC inquiries or investigations, other governmental inquiries or investigations or internal investigations pending or threatened, in each case regarding any accounting practices of Parent.

Section 4.6 Absence of Certain Changes. Since December 31, 2013, except in connection with the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby, the business of the Parent and each of its Subsidiaries has been conducted in the ordinary course of business and there has not been or occurred:

- a. any Parent Material Adverse Effect or any event, condition, change or effect that could reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect; or
- b. any event, condition, action or effect that, if taken during the period from the date of this Agreement through the Effective Time, would constitute a breach of Section 5.1.

Section 4.7 No Undisclosed Material Liabilities. There are no liabilities or obligations of Parent or any of its Subsidiaries, whether accrued, absolute, determined or contingent, except for (a) liabilities or obligations disclosed and provided for in the balance sheets included in the Parent Financial Statements (or in the notes thereto) filed and publicly available prior to the date of this Agreement; (b) liabilities or obligations incurred in accordance with or in connection with this Agreement; (c) liabilities or obligations incurred since December 31, 2013 in the ordinary course of business consistent with past practice; and (d) liabilities or obligations that have not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect. Neither Parent nor any of its Subsidiaries is a party to, or has any commitment to become a party to, any joint venture, off-balance sheet partnership or any similar Contract or arrangement (including any Contract relating to any transaction or relationship between or among Parent and any of its Subsidiaries, on the one hand, and any unconsolidated Affiliate, including any structured finance, special purpose or limited purpose entity or Person, on the other hand), or any "off-balance sheet arrangements" (as defined in Item 303(a) of Regulation S-K under the Exchange Act), where the result, purpose or effect of such Contract or arrangement is to avoid disclosure of any material transaction involving, or material liabilities of, Parent or any of its Subsidiaries, in the Parent Financial Statements or the Parent SEC Documents.

Section 4.8 Litigation.

(a) As of the date of this Agreement, except as set forth in Section 4.8(a) of the Parent Disclosure Letter, there are no Actions pending or, to Parent's Knowledge, threatened against Parent or any of its Subsidiaries or any of their respective assets or properties or, to the Knowledge of Parent, any executive officer or director of Parent or any of its Subsidiaries in their capacities as such, other than any such Action that (i) does not involve an amount in controversy in excess of \$100,000, or (ii) does not seek material injunctive or other material non-monetary relief. None of Parent or any of its Subsidiaries is subject to any Order, whether temporary, preliminary or permanent, which would reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect. As of the date hereof, there are no SEC inquiries or investigations, other governmental inquiries or investigations or internal investigations pending or, to the Knowledge of Parent, threatened, in each case regarding any accounting practices of Parent or any malfeasance by any executive officer of Parent.

(b) For the avoidance of doubt, the provisions of this Section 4.8 do not apply to Environmental Laws, Environmental Permits or Hazardous Materials, as representations and warranties made by Parent and its Subsidiaries with regard to all environmental matters, including Environmental Laws, Environmental Permits and Hazardous Materials are solely and exclusively made in Section 4.15 of this Agreement.

Section 4.9 Compliance with Laws.

(a) Parent and each of its Subsidiaries is in compliance with all Laws or Orders, except where any such failure to be in compliance has not had, or would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse

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Effect. To Parent's Knowledge, no investigation or review by any Governmental Entity with respect to Parent or any of its Subsidiaries is pending or threatened, nor has any Governmental Entity indicated an intention to conduct the same which, in each case, would reasonably be expected to have a Parent Material Adverse Effect. To Parent's Knowledge, Parent is in material compliance with the FCPA and any rules and regulations thereunder, as well as any other anti-corruption laws to which it may be subject. Neither Parent nor, to Parent's Knowledge, any director, officer, agent, employee or other Person associated with or acting on behalf of Parent, has, directly or indirectly, provided anything of value to any foreign official, as that term is defined in the FCPA, in connection with obtaining, retaining or otherwise securing an improper advantage in connection with the business of Parent.

(b) For the avoidance of doubt, the provisions of this Section 4.9 do not apply to Environmental Laws, Environmental Permits or Hazardous Materials, as representations and warranties made by Parent and its Subsidiaries with regard to all environmental matters, including Environmental Laws, Environmental Permits and Hazardous Materials are solely and exclusively made in Section 4.15.

Section 4.10 Properties. Except as would not have, or would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, Parent or one of its Subsidiaries, as the case may be, (i) holds good and valid title to all of the properties and assets reflected in the December 31, 2013 balance sheet included in the Parent SEC Documents as being owned by Parent or one of its Subsidiaries or acquired after the date thereof that are material to Parent's business on a consolidated basis (except for properties and assets sold or otherwise disposed of since the date thereof in the ordinary course of business) (collectively, with respect to real property, the "Parent Owned Real Property"), free and clear of all Liens, except for Permitted Liens and other matters described in Section 4.10(a) of the Parent Disclosure Letter; (ii) holds the Parent Owned Real Property, or any portion thereof or interest therein, free of any outstanding options or rights of first refusal or offer to purchase or lease; (iii) is the lessee or permittee of all leasehold estates reflected in the December 31, 2013 financial statements included in the Parent SEC Documents or acquired after the date thereof that are material to Parent's business on a consolidated basis (except for leases that have expired by their terms since the date thereof or been assigned, terminated or otherwise disposed of in the ordinary course of business) (collectively, with respect to real property, the "Parent Leased Real Property"); (iv) is in possession of the Parent Leased Real Property, and each lease underlying the Parent Leased Real Property is valid and in full force and effect, constitutes a valid and binding obligation of Parent or the applicable Subsidiary of Parent, subject to the Bankruptcy and Equity Exception; and (v) has not received any written notice of termination or cancellation of or of a breach or default in connection with the Parent Leased Real Property.

Section 4.11 Employee Benefit Plans.

(a) Section 4.11(a) of the Parent Disclosure Letter, sets forth a true, complete and correct list of each material "employee benefit plan" as defined in Section 3(3) of ERISA (whether or not subject to ERISA), and any other material plan, policy, program, practice, agreement, understanding or arrangement (whether written or oral) providing compensation or other benefits to any current or former director, officer, employee or consultant (or to any dependent or beneficiary thereof) of Parent or any ERISA Affiliate, which are now maintained, sponsored or contributed to by Parent or any ERISA Affiliate, or under which Parent or any ERISA Affiliate has any material obligation or liability, whether actual or contingent, including all incentive, bonus, deferred compensation, vacation, holiday, cafeteria, medical, disability, stock purchase, stock option, stock appreciation, phantom stock, restricted stock, restricted stock unit, stock-based compensation, change-in-control, retention, employment, consulting, personnel or severance policies, programs, practices, Contracts or arrangements (each, a "Parent Benefit Plan"). Parent has no express or implied commitment to terminate or modify or change any Parent Benefit Plan, other than with respect to a termination, modification or change required by ERISA or the Code or which would not, individually or in the aggregate, reasonably be expected to have a Parent Material Adverse Effect.

(b) Except as set forth in Section 4.11(b) of the Parent Disclosure Letter, with respect to each Parent Benefit Plan (including each Foreign Benefit Plan to the extent applicable), Parent has made available to the Company true, complete and correct copies of the following (as applicable): (i) the written document evidencing such Parent Benefit Plan or, with respect to any such plan that is not in writing, a written description of the material terms thereof; (ii) the summary plan description; (iii) the most recent annual report, financial statement and/or actuarial report; (iv) the most recent determination letter from the IRS; (v) the most recent Form 5500 required to have been filed, including all schedules thereto; (vi) any related trust agreements,

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insurance contracts or other funding arrangements; (vii) any notices to or from the IRS, PBGC or any other Governmental Entity relating to any unresolved compliance issues in respect of any such Parent Benefit Plan; and (viii) all material amendments, modifications or supplements to any Parent Benefit Plan.

(c) Except as set forth in Section 4.11(c) of the Parent Disclosure Letter, each Parent Benefit Plan has been administered in all material respects in accordance with its terms, applicable Law (including Section 409A of the Code) and any applicable collective bargaining agreement, including, in all material respects, timely filing of all Tax, annual reporting and other governmental filings required by ERISA and the Code and timely contribution (or, if not yet due, proper financial reporting) of any amounts required to be made under the terms of any of the Parent Benefit Plans. With respect to the Parent Benefit Plans, no event has occurred and there exists no condition or set of circumstances in connection with which Parent or any of its Subsidiaries would be subject to any liability that, individually or in the aggregate, would reasonably be expected to be material to Parent and its Subsidiaries, taken as a whole. Each Parent Benefit Plan that is intended to be “qualified” under Section 401 of the Code has received a favorable determination letter from the IRS to such effect and, to Parent’s Knowledge, no fact, circumstance or event has occurred or exists since the date of such determination letter that would reasonably be expected to adversely affect the qualified status of any such Parent Benefit Plan. None of Parent or any of its Subsidiaries has received notice of and, to Parent’s Knowledge, there are no audits or investigations by any Governmental Entity with respect to, or other Actions against or involving any Parent Benefit Plan or asserting rights or claims to benefits under any Parent Benefit Plan (other than routine claims for benefits payable in the normal course).

Section 4.12 Labor Matters. Parent is in material compliance with all applicable Laws of the United States, or of any state or local government or any subdivision thereof or of any foreign government respecting employment and employment practices, terms and conditions of employment, wages and hours and occupational safety and health, including without limitation the Immigration Reform and Control Act, the Worker Adjustment Retraining and Notification Act, any Laws respecting employment discrimination, harassment, retaliation, disability rights or benefits, equal opportunity, plant closure or mass or group layoff or separation issues, affirmative action, workers’ compensation, employee benefits, severance payments, COBRA, labor relations, collective bargaining, employee leave issues, wage and hour standards, occupational safety and health requirements and unemployment insurance and related matters. Except as specifically identified on Section 4.12 of the Parent Disclosure Letter, neither Parent nor any of its Subsidiaries is a party to or bound by any labor union or collective bargaining agreement. There is no unfair labor practice charge pending or, to Parent’s Knowledge, threatened which if determined adversely to Parent or its Subsidiaries would reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

Section 4.13 Tax.

(a) (i) All federal and state Tax Returns and all other material Tax Returns that were or are required to be filed on or before the Closing Date by the Parent or its Subsidiaries have been or will be timely filed on or before the Closing Date, and all such Tax Returns are or will be true, correct and complete in all material respects and were or will be prepared in substantial compliance with all Applicable Laws; (ii) all Taxes due and owing by the Parent or its Subsidiaries (whether or not shown on the Tax Returns referred to in clause (i)) have been or will be timely paid in full on or before the Closing Date; (iii) all deficiencies asserted in writing or assessments made in writing by the relevant Taxing Authority in connection with any of the Tax Returns referred to in clause (i) have been or will be timely paid in full on or before the Closing Date; and (iv) no issues that have been raised in writing by the relevant Taxing Authority in connection with any of the Tax Returns referred to in clause (i) are pending as of the date of this Agreement, or, if pending, have been specifically identified by the Parent to the Company and adequately reserved for in the Parent Financial Statements. Neither the Parent nor any of its Subsidiaries currently is the beneficiary of any extension of time within which to file any Tax Return.

(b) No federal, state, local or non-U.S. tax audits or administrative or judicial Tax proceedings are pending or being conducted with respect to the Parent or any of its Subsidiaries. Neither the Parent nor its Subsidiaries has received from any federal, state, local or non-U.S. Taxing Authority (including jurisdictions where the Parent or its Subsidiaries have not filed Tax Returns) any (i) written notice indicating an intent to open an audit or other review; (ii) request for information related to Tax matters; or (iii) notice of deficiency or proposed adjustment for any amount of Tax proposed, asserted or assessed by any Taxing Authority against the Company or any of its Subsidiaries. Section 4.13(b) of the Parent Disclosure Letter lists all Tax Returns filed by the Parent and its Subsidiaries for taxable periods ended on or after December 31, 2012, indicates those Tax Returns that

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have been audited and indicates those Tax Returns that currently are the subject of audit. The Company has received (or had made available to it) correct and complete copies of all federal and state income Tax Returns filed by the Parent and each of its Subsidiaries for taxable periods ended on or after December 31, 2012 and all examination reports and statements of deficiencies related to federal and state income Tax assessed against or agreed to by the Parent or any of its Subsidiaries with respect to those taxable periods.

(c) There are no Liens on the Parent's or any of its Subsidiaries' assets that arose in connection with any failure (or alleged failure) to pay any Tax other than Liens for Taxes not yet due and payable or which the validity thereof is being contested in good faith by appropriate proceedings and for which adequate accruals or reserves have been established in accordance with GAAP in the Parent Financial Statements.

(d) Neither the Parent nor any of its Subsidiaries has waived any statute of limitations in respect of income Taxes or agreed to any extension of time with respect to an income Tax assessment or deficiency.

(e) The Parent and its Subsidiaries have withheld and paid all Taxes required to have been withheld and paid in connection with any amounts paid or owing to any employee, independent contractor, creditor, shareholder or other Third Party.

(f) Except as listed on Section 4.13(f) of the Parent Disclosure Letter, neither the Parent nor any of its Subsidiaries is (or has been) a party to any Tax allocation or sharing agreement. Neither the Parent nor any of its Subsidiaries (A) has been a member of an Affiliated Group filing a consolidated federal Tax Return (other than a group the common parent of which was the Parent); or (B) has any liability for Taxes of any Person (other than the Parent or any of its Subsidiaries) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local, or non-U.S. law) as a transferee, successor, by contract or otherwise. Any Tax allocation or sharing agreement that is listed on Section 4.13(f) of the Parent Disclosure Letter will be terminated as of the Closing Date and will have no further effect for any taxable year (whether the current year, a future year or a past year). As of the Closing Date, Parent and its Subsidiaries shall have no further liability or claim under such Tax allocation or sharing agreements.

(g) Except as listed on Section 4.13(g) of the Parent Disclosure Letter, there are no joint ventures, partnerships, limited liability companies, or other arrangements or contracts to which the Parent or any Subsidiary is a party and that could be treated as a partnership for federal income Tax purposes.

(h) Neither the Parent nor any Subsidiary has, nor has it ever had, a "permanent establishment" in any foreign country, as such term is defined in any applicable Tax treaty or convention between the United States and such foreign country, nor has it otherwise taken steps that have exposed, or will expose, it to the taxing jurisdiction of a foreign country.

(i) No claim has been made in the last five (5) years by a Taxing Authority in a jurisdiction where the Parent or any Subsidiary does not file Tax Returns that the Company (or such Subsidiary) is or may be subject to taxation by that jurisdiction nor is there any factual or legal basis for any such claim.

(j) Neither the Parent nor any Subsidiary has, in the last five (5) years, distributed stock of another corporation, or had its stock distributed by another corporation, in a transaction that was purported or intended to be governed in whole or in part by Section 355 or 361 of the Code.

(k) Neither the Parent nor any Subsidiary is or has been a United States real property holding corporation (as defined in Section 897(c)(2) of the Code) during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code.

(l) Neither the Parent nor any Subsidiary participates in or cooperates with (or has at any time participated in or cooperated with) an international boycott within the meaning of Section 999 of the Code.

(m) Neither the Parent nor any Subsidiary has engaged in any transaction that, as of the date hereof, is a "listed transaction" under Treasury Regulations Section 1.6011-4(b)(2). The Parent and each Subsidiary have disclosed in their Tax

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Returns all information required by the provisions of the Treasury Regulations issued under Section 6011 of the Code with respect to any “reportable transaction” as that term is defined in Section 6707A(c) of the Code.

(n) No gain recognition agreements have been entered into by either the Parent or any Subsidiary, and, except as listed on Section 4.13(n) of the Parent Disclosure Letter, neither the Parent nor any of its Subsidiaries has obtained a private letter ruling or closing agreements from the Internal Revenue Service (or any comparable ruling from any other Taxing Authority).

(o) Neither the Parent nor any Subsidiary is or has at any time been (A) a “controlled foreign corporation” as defined by Section 957 of the Code; (B) a “personal holding company” as that term has been defined from time to time in Section 542 of the Code; (C) a “passive foreign investment company” nor has the Parent or any Subsidiary at any time held directly, indirectly, or constructively shares of any “passive foreign investment company” as that term has been defined from time to time in Section 1296 or 1297 of the Code.

(p) The Parent and each Subsidiary is in full compliance with all the terms and conditions of any Tax exemption or other Tax reduction agreement or order of a foreign or state government and the consummation of the transactions contemplated by this Agreement and will not have any adverse effect on the continued validity and effectiveness of any such Tax exemption or other Tax reduction agreement or order.

(q) Except as listed on Section 4.13(q) of the Parent Disclosure Letter, there is no agreement, contract or arrangement to which Parent or any of its Subsidiaries is a party that could, individually or collectively, result in the payment of any amount that would not be deductible by reason of Sections 280G (as determined without regard to Section 280G(b)(4) or any corresponding provision of state, local or non-U.S. Tax law), 162 (other than 162(a)), or 404 of the Code.

(r) Neither the Parent nor any Subsidiary has been, nor will any of them be, required to include any item of income in, or exclude any item of deduction from, taxable income for any Tax period (or portion thereof) ending after the Closing Date (i) pursuant to Section 481 of the Code or any comparable provision under state or foreign Tax Laws as a result of transactions, events, or accounting methods employed prior to the transactions contemplated hereby, (ii) as a result of any installment sale or open transaction disposition made on or prior to the Closing Date, (iii) as a result of any prepaid amount received on or prior to the Closing Date; (iv) as a result of an election under Section 108(i) of the Code; or (v) intercompany transaction or excess loss account described in Treasury Regulations under Section 1502 of the Code (or any corresponding or similar provision of state, local or non-U.S. income Tax law).

(s) The Parent and its Subsidiaries have complied in all material respects with all applicable unclaimed property Laws. Without limiting the generality of the foregoing, the Parent and each Subsidiary has established and followed procedures to identify any unclaimed property and, to the extent required by Law, remit such unclaimed property to the applicable Governmental Entity. The Parent’s and each Subsidiary’s records are adequate to permit a Governmental Entity or other outside auditor to confirm the foregoing representations.

(t) All transactions for taxable years for which the statute of limitations is still open (including but not limited to sales of goods, loans, and provision of services) between (i) the Parent or any Subsidiary and (ii) any other Person that is controlled directly or indirectly by the Company (within the meaning of Section 482 of the Code) were effected on arms’-length terms and for fair market value consideration.

(u) The unpaid Taxes of the Parent and each Subsidiary (i) did not exceed the reserve for Tax liability (other than any reserve for deferred Taxes established to reflect timing differences between book and Tax income) set forth on the face of the Parent Financial Statements (rather than in any notes thereto) and (ii) will not exceed that reserve as adjusted for the passage of time through the Closing Date in accordance with the past custom and practice of the Parent and each Subsidiary in filing its Tax Returns. Since the filing of the Parent Financial Statements, neither the Parent nor any Subsidiary has incurred any liability for Taxes arising from extraordinary gains or losses, as that term is used in GAAP, outside the ordinary course of business consistent with past custom and practice.

(v) The Parent operates at least one significant historic business line, or owns at least a significant portion of its historic business assets, in each case within the meaning of Treasury Regulations Section 1.368-1(d).

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(w) The Parent has provided or otherwise made available to the Company all of the Parent's and its Subsidiaries' books and records with respect to Tax matters pertinent to the Parent or its Subsidiaries relating to any Tax periods commencing on or before the Closing Date including all Tax opinions relating to and in the audit files of the Parent or its Subsidiaries that have been received since December 31, 2011.

Section 4.14 Intellectual Property.

(a) Except as, individually or in the aggregate, would not reasonably be expected to have a Parent Material Adverse Effect, (i) Parent and each of its Subsidiaries owns, or is licensed to use (in each case, free and clear of any Liens, other than Permitted Liens), all Intellectual Property used in its business as currently conducted; (ii) the conduct of its business as currently conducted, including the use of any Intellectual Property by Parent or its Subsidiaries, does not infringe on, misappropriate or otherwise violate the rights of any Person and is in accordance with any applicable license pursuant to which Parent or any Subsidiary acquired the right to use any Intellectual Property; (iii) no Person is challenging, infringing on, misappropriating or otherwise violating any right of Parent or any of its Subsidiaries with respect to any Intellectual Property owned by Parent or its Subsidiaries; and (iv) neither Parent nor any of its Subsidiaries has received any written notice or otherwise has Knowledge of any pending claim, Order or proceeding with respect to any Intellectual Property used by Parent or its Subsidiaries and no Intellectual Property owned by Parent or its Subsidiaries is being used or enforced in a manner that would reasonably be expected to result in the abandonment, cancellation or unenforceability of such Intellectual Property.

(b) Parent and its Subsidiaries have taken all commercially reasonable steps to protect the confidentiality and value of all material trade secrets and any other material confidential information that are owned, used or held by Parent or its Subsidiaries in confidence, including entering into licenses and Contracts that require licensees, contractors, or other Persons with access to trade secrets or other confidential information to safeguard and maintain the secrecy and confidentiality of such trade secrets. To Parent's Knowledge, such trade secrets have not been used, disclosed to or discovered by any Person except pursuant to a valid and appropriate non-disclosure agreement, license or any other appropriate Contract which has not been breached.

(c) The consummation of the transactions contemplated by this Agreement will not diminish or terminate the ownership of or rights in any material Intellectual Property owned or used by Parent or its Subsidiaries in their respective businesses as currently conducted and after the Closing Date Parent and its Subsidiaries will have the right to use such Intellectual Property on the same basis as prior to the consummation of the transactions contemplated by this Agreement.

Section 4.15 Environmental Matters.

(a) Parent and its Subsidiaries are, and have been for the past five (5) years, in material compliance with all Environmental Laws, and any past material noncompliance by Parent and its Subsidiaries with Environmental Laws has been resolved.

(b) Each of Parent and its Subsidiaries has, as applicable, developed and submitted or obtained, maintained and materially complied with all Environmental Permits that are required for the conduct and operation of its business and Parent or any applicable Subsidiary of Parent has not received any written notice that any such Environmental Permit is not in full force and effect; and, to Parent's Knowledge, no such Environmental Permit is or will be subject to review, revision, major modification, voidance or prior consent by any Governmental Entity as a result of the consummation of the transactions contemplated by this Agreement.

(c) None of Parent or any of its Subsidiaries has received any written notice of any violation of, or liability under, Environmental Laws or Environmental Permits or with respect to Hazardous Materials in the last five (5) years that remains open or not fully resolved or otherwise terminated.

(d) Except as set forth in Section 4.15(d) of the Parent Disclosure Letter, there are no pending or, to Parent's Knowledge, threatened civil, criminal or administrative Actions, notices of violation, arbitrations or demand letters pursuant to Environmental Laws or Environmental Permits or with respect to Hazardous Materials, which, in each instance, is alleged against Parent or any of its Subsidiaries or related to the Parent Owned Real Property or the Parent Leased Real Property or any other

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property previously owned or operated by Parent or any of its Subsidiaries for which Parent or any of its Subsidiaries retains any liabilities.

(e) Neither Parent nor any of its Subsidiaries has Released or received a written notice of a Release of Hazardous Materials and, to Parent's Knowledge, none of them has other notice of a Release of any Hazardous Materials on, at, or from the Parent Owned Real Property or the Parent Leased Real Property except for any release (i) that is (A) in compliance with Environmental Laws or Environmental Permits and (B) occurring in a manner or in quantities or locations that would not require any investigation or remediation of soil or groundwater or any other environmental media, including in an offshore environment, under Environmental Laws, or (ii) that would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

(f) Neither Parent nor any of its Subsidiaries has transported or disposed of, or arranged for the transport or disposal of any Hazardous Material at or to any off-site location which, to Parent's Knowledge, has resulted in, or would reasonably be expected to result in, a liability to Parent.

(g) Parent has provided to the Company true and complete copies of, or access to, correct and complete copies of (i) all Environmental Permits currently in effect; and (ii) results of any material reports, assessments, studies, analyses, tests, correspondence or monitoring, possessed or initiated by Parent or any of its Subsidiaries pertaining to Hazardous Materials in, on or under Parent Owned Real Property or Parent Leased Real Property, or concerning compliance by Parent or any of its Subsidiaries with Environmental Laws.

Section 4.16 Insurance. Except as has not had, and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, (a) each insurance policy under which Parent or any of its Subsidiaries is an insured or otherwise the principal beneficiary of coverage (collectively, the "Parent Insurance Policies") is in full force and effect, all premiums due thereon have been paid in full and Parent and its Subsidiaries are in compliance with the terms and conditions of such Parent Insurance Policy; (b) neither Parent nor any of its Subsidiaries is in breach or default under any Parent Insurance Policy; and (c) no event has occurred which, with notice or lapse of time, would constitute such breach or default, or permit termination or modification, under any Insurance Policy.

Section 4.17 Regulatory Matters: Permits.

(a) Each of Parent and its Subsidiaries holds all licenses, permits, franchises, variances, registrations, exemptions, Orders and other governmental authorizations, consents, approvals and clearances with, and has submitted notices to, all Governmental Entities necessary for the lawful operating of the businesses of Parent or any of its Subsidiaries as currently conducted (the "Parent Permits"), and all such Parent Permits are valid, and in full force and effect. Since January 1, 2013, there has not occurred any violation of, default (with or without notice or lapse of time or both) under, or event giving to others any right of termination, amendment or cancellation of, with or without notice or lapse of time or both, any Parent Permit. Parent and each of its Subsidiaries are in compliance in all material respects with the terms of all Parent Permits, and no event has occurred that would reasonably be expected to result in the revocation, cancellation, non-renewal or adverse modification of any Parent Permit, in each case, except as has not had, and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

(b) For the avoidance of doubt, the provisions of this Section 4.17 do not apply to Environmental Laws, Environmental Permits or Hazardous Materials, as representations and warranties made by the Company and its Subsidiaries with regard to all environmental matters, including Environmental Laws, Environmental Permits and Hazardous Materials, are solely and exclusively made in Section 4.15 of this Agreement.

Section 4.18 Interested Party Transactions. Except as disclosed in Section 4.18 of the Parent Disclosure Letter, since January 1, 2013, there have been no transactions, agreements, arrangements or understandings between Parent or any of its Subsidiaries on the one hand, and the Affiliates of Parent on the other hand (other than Parent's Subsidiaries), that would be required to be disclosed under Item 404 of Regulation S-K under the Exchange Act and that has not been so disclosed.

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Section 4.19 Parent Information. The information relating to Parent or any Subsidiary of Parent to be included or incorporated by reference in the Joint Proxy Statement and the Form S-4 will not, at the time the Form S-4 is declared effective, the time the Joint Proxy Statement is first mailed to stockholders of the Company and Parent and the time of the Company Stockholder Meeting and the Parent Stockholder Meeting, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances in which they are made, not misleading. The information relating to Parent or any Subsidiary of Parent that is provided or to be provided by Parent or its Representatives for inclusion in any document (other than the Form S-4) filed with any other Governmental Entity in connection with the transactions contemplated by this Agreement will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances in which they are made, not misleading. All documents that Parent is responsible for filing with the SEC in connection with the Merger or the other transactions contemplated hereby (including the Joint Proxy Statement and the Form S-4) (except for such portions thereof that relate only to the Company or any of its Subsidiaries) will comply as to form and substance in all material respects with the provisions of the Securities Act and the Exchange Act.

Section 4.20 Parent Ownership of Company Securities. Prior to the Company Board approving this Agreement, the Merger and the other transactions contemplated hereby for purposes of the applicable provisions of the DGCL, neither Parent nor Merger Sub or any of their respective Subsidiaries, alone or together with any other Person, was at any time, or became, an "interested stockholder" (as such term is defined in Section 203 of the DGCL) thereunder or has taken any action that would cause any anti-takeover statute under the DGCL or other applicable state Law to be applicable to this Agreement, the Merger, or any of the transactions contemplated hereby. None of Parent or any of its Subsidiaries has any direct or indirect beneficial ownership, or sole or shared voting power, with respect to any shares of Company Common Stock.

Section 4.21 Opinion of Financial Advisor. Parent has received the opinion of Stifel Nicolaus & Company, Incorporated, financial advisor to Parent (the "Parent Financial Advisor"), to the effect that, as of the date of this Agreement, and based upon and subject to the factors and assumptions set forth therein, the Exchange Ratio is fair to Parent from a financial point of view.

Section 4.22 Brokers and Finders. Neither Parent nor any of its Subsidiaries has employed any broker or finder or incurred any liability for any brokerage fees, commissions or finder's fees in connection with the Merger or the other transactions contemplated by this Agreement, except that Parent has retained the Parent Financial Advisor, and Parent has heretofore made available to the Company a true and complete copy of all agreements between Parent and the Parent Financial Advisor pursuant to which such firm would be entitled to any payment relating to the Merger and the other transactions contemplated by this Agreement.

Section 4.23 Tax-Free Reorganization. Neither Parent nor any of its Subsidiaries has taken any action, and Parent is not aware of any fact or circumstance, that would reasonably be expected to prevent the Merger from qualifying as a Tax-Free Reorganization.

Section 4.24 Related Entity Representations.

Parent has no Related Entities.

Section 4.25 No Additional Representations.

(a) Except for the representations and warranties made in this Article IV, neither Parent nor Parent's Subsidiaries nor any other Person makes any express or implied representation or warranty with respect to Parent or its Subsidiaries or Related Entities or their respective businesses, operations, assets, liabilities, conditions (financial or otherwise) in connection with this Agreement or the transactions contemplated hereby, and Parent hereby disclaims any such other representations or warranties. In particular, without limiting the foregoing disclaimer, none of Parent, its Subsidiaries, or any other Person makes or has made any representation or warranty to the Company or any of its Affiliates or Representatives with respect to (i) any financial projection, forecast, estimate, budget or prospect information relating to Parent or any of its Subsidiaries or Related Entities or their respective businesses; or (ii) except for the representations and warranties made by Parent in this Article IV, any oral or written

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information presented to the Company or any of its Affiliates or Representatives in the course of their due diligence investigation of Parent, the negotiation of this Agreement or in the course of the transactions contemplated hereby.

(b) Each of Parent and Merger Sub acknowledges and agrees that it has (i) had the opportunity to meet with the management of the Company and to discuss the business, assets and liabilities of the Company and its Subsidiaries and Related Entities; (ii) been afforded the opportunity to ask questions of and receive answers from officers of the Company; and (iii) conducted its own independent investigation of the Company and its Subsidiaries and Related Entities, their respective businesses, assets, liabilities and the transactions contemplated by this Agreement.

(c) Notwithstanding anything contained in this Agreement to the contrary, each of Parent and Merger Sub acknowledges and agrees that neither the Company or any other Person has made or is making any representations or warranties relating to the Company or its Subsidiaries or Related Entities whatsoever, express or implied, beyond those expressly given by the Company in Article III, including any implied representation or warranty as to the accuracy or completeness of any information regarding the Company furnished or made available to Parent, Merger Sub, or any of their Representatives. Without limiting the generality of the foregoing, each of Parent and Merger Sub acknowledges that no representations or warranties are made with respect to any projections, forecasts, estimates, budgets or prospect information that may have been made available to Parent, Merger Sub or any of their Representatives.

ARTICLE V COVENANTS RELATING TO CONDUCT OF BUSINESS

Section 5.1 Conduct of Businesses Prior to the Effective Time. From the date of this Agreement, except as (a) expressly contemplated or permitted by this Agreement, (b) required by applicable Law, (c) as consented to in writing by Parent or the Company, as applicable (such consent not to be unreasonably withheld, delayed or conditioned), or (d) set forth in Section 5.1 of the Company Disclosure Letter or Parent Disclosure Letter, as applicable, each of Parent and the Company shall, and shall cause each of its respective Subsidiaries to, (i) conduct its business in all material respects in the usual, regular and ordinary course in substantially the same manner as heretofore conducted; and (ii) to the extent consistent with clause (i), use reasonable best efforts to maintain and preserve intact its business organization, employees, advantageous business relationships (including with its customers and suppliers), Company Permits or Parent Permits, as applicable, and retain the services of its key officers and key employees.

Section 5.2 Company Forbearances. Without limiting the generality of Section 5.1 above, except as set forth in Section 5.2 of the Company Disclosure Letter, and except as expressly contemplated or permitted by this Agreement or as required by applicable Law, the Company shall not, and shall not permit any of its Subsidiaries to, without the prior written consent of Parent (such consent not to be unreasonably withheld, delayed or conditioned):

(a) (i) other than dividends and distributions by a direct or indirect Subsidiary to the Company or any direct or indirect wholly owned Subsidiary of the Company, declare, set aside or pay any dividends on, make any other distributions in respect of, or enter into any agreement with respect to the voting of, any of its capital stock; (ii) split, combine or reclassify any of its capital stock or issue or authorize the issuance of any other securities in respect of, in lieu of, or in substitution for, shares of its capital stock, except upon the exercise of stock options or settlement of stock units that are outstanding as of the date of this Agreement in accordance with their present terms; or (iii) purchase, redeem or otherwise acquire any shares of its capital stock or other securities or any of its Subsidiaries, or any rights, warrants or options to acquire any such shares or other securities (other than the withholding of shares of common stock to satisfy the exercise price or Tax withholding upon the exercise of stock options, vesting of restricted shares or settlement of stock units, in each case that are outstanding as of the date of this Agreement in accordance with their present terms and the Company's practices as of the date of this Agreement);

(b) issue, deliver, sell, pledge or otherwise encumber or subject to any Lien any shares of its capital stock, any other voting securities, including any restricted shares of its common stock, or any securities convertible into, or any rights, warrants or options to acquire, any such shares, voting securities or convertible securities, including any stock options and unit awards (other than (i) the issuance of its common stock upon the exercise of stock options or vesting of restricted shares, in each case that are

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outstanding as of the date of this Agreement in accordance with their present terms; or (ii) the issuance of up to 120,000 stock options (but, for the avoidance of doubt, not restricted stock units) to employees in the ordinary course of business consistent with past practice);

(c) amend its articles of incorporation, bylaws or other comparable Organizational Documents or the Organizational Documents of any of its Subsidiaries;

(d) acquire or agree to acquire by merging or consolidating with, or by purchasing any assets or any equity securities of, or by any other manner, any business or any Person, or otherwise acquire or agree to acquire any assets in each case, except for acquisitions of inventory or other assets (other than property, plant and equipment) in the ordinary course of business consistent with past practice; provided, however, that no acquisition otherwise permitted by the foregoing may be made to the extent it may reasonably be expected to prevent, materially delay or materially impede the consummation of the transactions contemplated by this Agreement;

(e) sell, assign, transfer, lease, license, mortgage or otherwise encumber or subject to any Lien (other than Permitted Liens), or otherwise dispose of any of its properties or assets or create any security interest in such assets or properties that have a fair market value in excess of \$150,000 in the aggregate, in each case, other than in the ordinary course of business consistent with past practice;

(f) except for borrowings under the Company's Credit Agreements that are incurred in the ordinary course of business consistent with past practice, or Indebtedness owed by any wholly owned Subsidiary to the Company or any other wholly owned Subsidiary of the Company, incur, redeem, prepay, repurchase, defease, cancel, or modify the terms of, any Indebtedness or assume, guarantee or endorse, or otherwise become responsible for the Indebtedness of any Person (other than any of its wholly owned Subsidiaries);

(g) make any loans or advances to any Person other than its wholly owned Subsidiaries or as a result of ordinary advances and reimbursements to employees;

(h) change in any material respect its accounting methods (or underlying assumptions), principles or practices affecting its assets, liabilities or business, including any reserving, renewal or residual method, practice or policy, in each case, in effect on the date of this Agreement, except as required by changes in GAAP or regulatory accounting principles;

(i) make investments in Persons (other than in any of its wholly owned Subsidiaries or any Related Entity) in excess of \$150,000 in the aggregate, whether by purchase of stock or securities, contributions to capital, property transfers, or entering into binding agreements with respect to any such investment or acquisition;

(j) make, change or revoke any material Tax election, change an annual Tax accounting period, adopt or change any material Tax accounting method, file any material amended Tax Return, enter into any closing agreement with respect to a material amount of Taxes, settle any material claim or assessment from a Taxing Authority or surrender any right to claim a refund of a material amount of Taxes;

(k) except as expressly permitted by any other provision of this Section 5.2 or as set forth in Section 5.2 of the Company Disclosure Letter, terminate or waive any material provision of any Company Material Contract other than normal renewals of such Contracts without materially adverse changes, additions or deletions of terms, or enter into or renew any agreement or contract or other binding obligation of the Company or its Subsidiaries containing (i) any restriction on the ability of the Company and its Subsidiaries, or, after the Merger, Parent and its Subsidiaries (including the Company), to conduct their businesses as presently conducted or currently contemplated to be conducted after the Merger or (ii) any restriction on the Company or its Subsidiaries, or, after the Merger, Parent and its Subsidiaries (including the Company), in engaging in any type of activity or business;

(l) (i) incur any capital expenditures or (ii) enter into any Contract obligating the Company (or any of its Subsidiaries) to make capital expenditures, except, in each case, for (A) capital expenditures made in accordance with such Party's existing

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capital plan for 2014 as in effect as of the date of this Agreement (which plan is set forth in Section 5.2 of the Company Disclosure Letter); or (B) to the extent not reflected on such capital plan, capital expenditures not in excess of \$150,000 in the aggregate;

(m) except as required by agreements or instruments in effect on the date of this Agreement, alter in any material respect, fail to satisfy or enter into any commitment to alter in any material respect, any material interest in any corporation, association, joint venture, partnership or business entity in which the Company directly or indirectly holds any equity or ownership interest on the date of this Agreement;

(n) except as required by the terms of Company Benefit Plans or Company Employment Agreements as in effect on the date of this Agreement or as required by applicable Law or as provided by this Agreement, or as in the ordinary course of business consistent with past practice, (i) grant or pay to any current or former director, officer, employee or consultant of the Company or any of its Subsidiaries any increase in compensation, except for annual or promotional salary or wage increases in the ordinary course of business consistent with past practice not to exceed, in the aggregate for all such increases, 10% of the aggregate wage and salary expense for the prior year to the Company and its Subsidiaries on a consolidated basis; (ii) grant, pay, promise to pay, or enter into any Company Benefit Plan or Company Employment Agreement to pay, to any current or former director, officer, employee, consultant or service provider of the Company or any of its Subsidiaries any severance, retention, change in control or termination pay or any increase in actual or potential severance, retention, change in control or termination pay; (iii) increase the compensation or benefits provided or payable under any Company Benefit Plan or Company Employment Agreement; (iv) modify the terms of any equity-based award granted under any Company Stock Plan; (v) make any discretionary contributions or payments with respect to any Company Benefit Plan or Company Employment Agreement to any trust or other funding vehicle; (vi) accelerate the payment or vesting of any payment or benefit provided or to be provided to any director, officer, employee or consultant of the Company or any of its Subsidiaries or otherwise pay any amounts not due such individual; (vii) enter into any new or amend or modify any existing Company Employment Agreement (or agreement that would be a Company Employment Agreement if in effect on the date of this Agreement), other than employment agreements for new hires with an annual compensation not exceeding \$150,000 in the aggregate; (viii) establish any new or amend or modify any existing Company Benefit Plans (or plans that would be a Company Benefit Plan if in effect on the date of this Agreement); or (ix) establish, adopt or enter into any collective bargaining agreement;

(o) except as set forth in Section 5.2 of the Company Disclosure Letter, pay, discharge, settle, waive, release or assign or compromise any legal action, litigation, arbitration, suit, investigation or proceeding, other than any such payment, discharge, settlement or compromise (i) that involves solely money damages in an amount not in excess of \$150,000 in the aggregate, and that does not create binding precedent for other pending or potential legal action, litigation, arbitration or proceeding, or (ii) pursuant to the terms of any Contract in effect on the date of this Agreement (copies of which have been provided to Parent prior to the date of this Agreement);

(p) take any action, or knowingly fail to take any action within its control, which action or failure to act would reasonably be expected to prevent the Merger from qualifying as a "reorganization" within the meaning of Section 368(a) of the Code;

(q) adopt or enter into a plan of complete or partial liquidation, dissolution, merger, consolidation, restructuring, recapitalization or other reorganization of the Company or any of its Subsidiaries (other than the Merger);

(r) fail to maintain in full force and effect the material insurance policies covering the Company and its Subsidiaries and their respective properties, assets and business in a form and amount consistent with past practices;

(s) enter into any hedging Contracts not in the ordinary course of business consistent with past practice;

(t) fail to comply in all material respects with the Securities Act, the Exchange Act or the Sarbanes-Oxley Act in respect of all Company SEC Documents filed with or furnished to, as applicable, the SEC;

(u) purchase or otherwise acquire, directly or indirectly (including by way of providing financing), any Equity Interests in Parent or any of Parent's Subsidiaries;

or

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(v) commit or agree to take any of the actions contemplated by Section 5.2(a) through Section 5.2(u) above.

Section 5.3 Parent Forbearances. Without limiting the generality of Section 5.1 above, except as set forth in Section 5.3 of the Parent Disclosure Letter, and except as expressly contemplated or permitted by this Agreement or as required by applicable Law, Parent shall not, and shall not permit any of its Subsidiaries to, without the prior written consent of the Company (such consent not to be unreasonably withheld, delayed or conditioned):

(a) (i) declare, set aside or pay any dividends on, make any other distributions in respect of, or enter into any agreement with respect to the voting of, any of its capital stock; (ii) split, combine or reclassify any of its capital stock or issue or authorize the issuance of any other securities in respect of, in lieu of, or in substitution for, shares of its capital stock, except upon the exercise of stock options or settlement of stock units that are outstanding as of the date of this Agreement in accordance with their present terms; or (iii) purchase, redeem or otherwise acquire any shares of its capital stock or other securities, or grant any rights, warrants or options to acquire any such shares or other securities, other than in the ordinary course of business consistent with past practice and other than the withholding of shares of common stock to satisfy the exercise price or Tax withholding upon the exercise of stock options, vesting of restricted shares or settlement of stock units, in each case that are outstanding as of the date of this Agreement in accordance with their present terms and Parent's practices as of the date of this Agreement;

(b) amend its articles of incorporation, bylaws or other comparable Organizational Documents;

(c) acquire or agree to acquire by merging or consolidating with, or by purchasing any assets or any equity securities of, or by any other manner, any business or any Person if, in each case, it may reasonably be expected to prevent, materially delay or materially impede the consummation of the transactions contemplated by this Agreement;

(d) sell, assign, transfer, lease, license, mortgage or otherwise encumber or subject to any Lien (other than Permitted Liens), or otherwise dispose of any of its properties or assets or create any security interest in such assets or properties that, in each case, would have, or would reasonably be expected to have, a Parent Material Adverse Effect, in each case, other than in the ordinary course of business consistent with past practice;

(e) except for borrowings under its existing Credit Agreements that are incurred in the ordinary course of business consistent with past practice, incur, redeem, prepay, repurchase, defease, cancel, or modify the terms of, any Indebtedness or assume, guarantee or endorse, or otherwise become responsible for the Indebtedness of any Person (other than any of its wholly owned Subsidiaries) if, in each case, it would have, or would reasonably be expected to have, a Parent Material Adverse Effect;

(f) except as contemplated by this Agreement or as required by agreements or instruments in effect on the date of this Agreement, alter in any material respect, fail to satisfy or enter into any commitment to alter in any material respect, any material interest in any corporation, association, joint venture, partnership or business entity in which the Company directly or indirectly holds any equity or ownership interest on the date of this Agreement if, in each case, it may reasonably be expected to prevent, materially delay, or materially impede the consummation of the transactions;

(g) take any action, or knowingly fail to take any action within its control, which action or failure to act would reasonably be expected to prevent the Merger from qualifying as a "reorganization" within the meaning of Section 368(a) of the Code;

(h) adopt or enter into a plan of complete or partial liquidation, dissolution, merger, consolidation, restructuring, recapitalization or other reorganization of Parent (other than the Merger);

(i) fail to comply in all material respects with the Securities Act, the Exchange Act or the Sarbanes-Oxley Act in respect of all Parent SEC Documents filed with or furnished to, as applicable, the SEC; or

(j) commit or agree to take any of the actions contemplated by Section 5.3(a) through Section 5.3(i) above.

Section 5.4 No Control of the Other Party's Business. Nothing contained in this Agreement shall give Parent, directly or indirectly, the right to control or direct the operations of the Company, or shall give the Company, directly or indirectly, the

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right to control or direct the operations of Parent, prior to the Effective Time. Prior to the Effective Time, each of the Company and Parent shall exercise, consistent with the terms and conditions of this Agreement, complete control and supervision over its and its Subsidiaries' respective operations.

ARTICLE VI ADDITIONAL AGREEMENTS

Section 6.1 Proxy Statement; Registration Statement. Parent and the Company shall, as promptly as reasonably practicable following the date of this Agreement, prepare and file with the SEC a proxy statement relating to the meetings of the Company's stockholders and Parent's stockholders to be held in connection with this Agreement and the transactions contemplated by this Agreement (together with any amendments or supplements thereto, the "Joint Proxy Statement") and a registration statement on Form S-4 (together with any amendments or supplements thereto, the "Form S-4"), in which the Joint Proxy Statement will be included as a prospectus. Each of Parent and the Company shall, upon the reasonable request by the Other Party, furnish to the Other Party all information as may be reasonably necessary or advisable in connection with the Joint Proxy Statement or the Form S-4. Each of Parent and the Company shall use its reasonable best efforts to have the Form S-4 declared effective under the Securities Act as promptly as reasonably practicable after such filing and to keep the Form S-4 effective as long as necessary to consummate the transactions contemplated by this Agreement. Each of the Parties shall mail or deliver the Joint Proxy Statement to its respective stockholders as promptly as reasonably practicable after the Form S-4 has been declared effective under the Securities Act. Parent may file the opinion described in Section 7.2(d), and the Company may file the opinion described in Section 7.3(d), in each case with the SEC by post-effective amendment to the Form S-4. Parent shall also use its reasonable best efforts to obtain all necessary state securities Law or "blue sky" permits and approvals required to carry out the transactions contemplated by this Agreement, and the Company shall furnish all information concerning it and the holders of Company Common Stock as may be reasonably requested in connection with any such action. Each of Parent and the Company shall, as promptly as reasonably practicable after receipt thereof, provide the Other Party copies of any written comments and advise the Other Party of any oral comments, with respect to the Joint Proxy Statement and/or the Form S-4 received from the SEC. Each Party shall also advise the Other Party, as promptly as reasonably practicable after receipt of notice thereof, of the time when the Form S-4 has become effective, the issuance of any stop order, or the suspensions of the qualification of the Parent Common Stock issuable in connection with the Merger for offering or sale in any jurisdiction. The Parties shall cooperate and provide the Other Party with a reasonable opportunity to review and comment on any amendment or supplement to the Joint Proxy Statement and the Form S-4 prior to filing such with the SEC and will provide the Other Party with a copy of all such filings with the SEC to the extent not otherwise publicly available. If at any time prior to the Effective Time, Parent or the Company has Knowledge of any information relating to Parent or the Company, or any of their respective officers, directors or other Affiliates, which should be set forth in an amendment or supplement to the Form S-4 or the Joint Proxy Statement so that any such document would not include any misstatement of a material fact or omit to state any material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, the Party that discovers such information shall promptly notify the Other Party and, to the extent required by applicable Laws, an appropriate amendment or supplement describing such information shall be filed as promptly as reasonably practicable with the SEC and, to the extent required under applicable Law, disseminated to the stockholders of Parent and the Company. Notwithstanding anything contained in this Agreement to the contrary, no amendment or supplement (including by incorporation by reference) to the Joint Proxy Statement or the Form S-4 shall be made without the approval of both Parent and the Company, which approval shall not be unreasonably withheld, delayed or conditioned; provided, however, that the Company, in connection with a Company Adverse Recommendation Change, may amend or supplement the Joint Proxy Statement and/or the Form S-4 (including by incorporation by reference) pursuant to a Qualifying Amendment to effect such a change, and in such event, this right of approval shall apply only with respect to information relating to the Other Party or its business, financial condition or results of operations, and shall be subject to the right of each Party to have its Board's deliberations and conclusions be accurately described. A "Qualifying Amendment" means an amendment or supplement to the Joint Proxy Statement or the Form S-4 (including by incorporation by reference) to the extent that it contains (a) a Company Adverse Recommendation Change, (b) a statement of the reasons of the Company Board or Parent Board (as the case may be) for making such Company Adverse Recommendation Change, and (c) additional information reasonably related to the foregoing.

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Section 6.2 Access to Information.

(a) Upon reasonable notice and subject to applicable Law, each of the Company and Parent shall, and shall cause each of its Subsidiaries to, afford to the Other Party and its Representatives reasonable access, at such Other Party's expense, during normal business hours, to all of its properties, books, Contracts, commitments, financial and operating data, records, and officers and employees and, during such period, the Parties shall, shall cause their respective Subsidiaries to, and shall use their reasonable best efforts to cause their Representatives to, make available to the Other Party all other information concerning their businesses, properties and personnel as the Other Party may reasonably request. Each of the Company and Parent shall, and shall cause each of its Subsidiaries to, provide to the Other Party, to the extent not publicly available, a copy of each report, schedule, registration statement and other document filed by it during such period pursuant to the requirements of the federal securities Laws. Neither the Company nor Parent nor any of their Subsidiaries shall be required to provide access to or to disclose information if it would unreasonably disrupt the operations of such Party or any of its Subsidiaries or where such Party determines in good faith, after consultation with legal counsel, that such access or disclosure is reasonably likely to jeopardize the attorney-client or other legal privilege of such Party or its Subsidiaries or contravene any Law, Order or binding agreement. If any material is withheld by such Party pursuant to the preceding sentence, such Party shall inform the Other Party as to the general nature of what is being withheld.

(b) All information and materials provided pursuant to this Agreement shall be subject to the provisions of the Confidentiality Agreement.

(c) No investigation by either of the Parties or their respective Representatives shall have any effect for the purpose of determining the accuracy of the representations and warranties of the Other Party set forth in this Agreement.

Section 6.3 Stockholder Meetings.

(a) The Company and Parent shall each establish a record date for, duly call, give notice of, convene and hold a meeting of their respective stockholders to be held for the purpose of obtaining the requisite Company Stockholder Approval and Parent Stockholder Approval required in connection with this Agreement and the Merger (the "Company Stockholder Meeting" and the "Parent Stockholder Meeting," respectively), and each shall use its reasonable best efforts to cause such meeting to occur as soon as reasonably practicable after the Form S-4 is declared effective. The Company and Parent shall each use their reasonable best efforts to cause the Company Stockholder Meeting and the Parent Stockholder Meeting to be held on the same day at substantially the same time. The Company Board has resolved to recommend to the Company's stockholders that such stockholders vote in favor of the adoption of this Agreement, the Merger and the other transactions contemplated by this Agreement (the "Company Board Recommendation"). Unless otherwise agreed by the Parties, this Agreement and the Merger shall be submitted to the stockholders of the Company at the Company Stockholder Meeting for the purpose of obtaining the Company Stockholder Approval, and subject to Section 6.11(b), the Company and its Board shall use their reasonable best efforts to solicit and obtain the Company Stockholder Approval. The Parent Board has resolved to recommend to its stockholders that such stockholders vote in favor of the Parent Share Issuance (the "Parent Board Recommendation"). Unless otherwise agreed by the Parties, the Parent Share Issuance shall be submitted to the stockholders of Parent at the Parent Stockholder Meeting for the purpose of obtaining the Parent Stockholder Approval, and Parent and its Board shall use their reasonable best efforts to solicit and obtain the Parent Stockholder Approval. The Company and Parent shall not postpone or adjourn the Company Stockholder Meeting or the Parent Stockholder Meeting, as applicable, except to the extent required by applicable Law or to solicit additional proxies and votes in favor of: (a) in the case of the Company, the adoption of this Agreement if sufficient votes to constitute the Company Stockholder Approval have not been obtained; or (b) in the case of Parent, the Parent Share Issuance if sufficient votes to constitute the Parent Stockholder Approval have not been obtained; provided, however, that unless otherwise agreed to by the Parties, neither the Company Stockholder Meeting nor the Parent Stockholder Meeting may be postponed or adjourned to a date that is more than twenty (20) Business Days after the date for which the Company Stockholder Meeting or the Parent Stockholder Meeting, as the case may be, was originally scheduled (excluding any adjournments or postponements required by applicable Law). Unless this Agreement has been validly terminated in accordance with its terms, each of the Parties shall submit the matters set forth above to their respective stockholders for approval.

(b) Neither Parent Board nor any committee thereof shall fail to make the Parent Board Recommendation, or withdraw, amend, modify or materially qualify, in a manner adverse to the Company, the Parent Board Recommendation, or make any

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public statement inconsistent with the Parent Board Recommendation, or resolve or agree to take any of the foregoing actions (any of the foregoing, a “Parent Adverse Recommendation Change”).

Section 6.4 Legal Conditions to Merger. Upon the terms and subject to the conditions set forth in this Agreement, each of Parent and the Company shall, and shall cause its Subsidiaries to, use their reasonable best efforts (a) to take, or cause to be taken, all actions necessary, proper or advisable to comply as promptly as reasonably practicable with all legal requirements that may be imposed on such Party or its Subsidiaries with respect to the Merger, the Parent Share Issuance and the other transactions contemplated by this Agreement (including the furnishing of information for, and the preparation and filing of, all necessary and proper statements, forms, registrations, filings, notices, representation letters, and declarations related to the Merger); (b) to cause the conditions set forth in Article VII to be satisfied and to consummate the transactions contemplated by this Agreement in a reasonably expeditious manner (including the furnishing of customary representation letters to enable tax opinions to be rendered); and (c) to obtain (and to cooperate with the Other Party to obtain) any material consent, authorization, Order or approval of, or any exemption or waiver by, any Governmental Entity (including any Requisite Approvals) and any other Third Party that is required to be obtained by the Company or Parent or any of their respective Subsidiaries in connection with the Merger and the other transactions contemplated by this Agreement. Upon either Party’s receipt of a communication from any Governmental Entity that causes such Party to believe that there is a reasonable likelihood that any Stockholder Approval will not be obtained or that the receipt of any required consent or approval may be materially delayed, such Party shall promptly (i) advise the Other Party and (ii) to the extent permitted by Law, provide the Other Party with a copy of such communication.

Section 6.5 NASDAQ Listing. Parent shall cause the shares of Parent Common Stock to be issued in the Merger and such other shares of Parent Common Stock to be reserved for issuance in connection with the Merger to be approved for listing on the NASDAQ, subject to official notice of issuance as promptly as reasonably practicable after the date of this Agreement, and in any event, prior to the Closing Date.

Section 6.6 Employee Matters.

(a) Provided the Company has complied with Section 5.2(n), at the Effective Time, Parent shall provide or cause the Surviving Corporation to provide each Company Employee with compensation and benefits that are the same or substantially comparable in the aggregate to those provided to such Company Employee as of immediately prior to the Effective Time.

(b) The Parties shall cause each benefit plan in which Company Employees are eligible to participate after the Effective Time to take into account, to the extent consistent and compatible with the terms of the applicable benefit plan, for purposes of eligibility, vesting and benefit accrual under such benefit plans, the service of the Company Employees with the Company and its Subsidiaries to the same extent as such service was credited for such purpose by the Company or its Subsidiaries; provided, however, that such credited service shall not result in a duplication of benefits. Nothing herein shall limit the ability of Parent or its Affiliates to amend or terminate any of the Company Benefit Plans or Parent Benefit Plans in accordance with their terms after the Effective Time.

(c) If Company Employees become eligible to participate in Parent Benefit Plans that are health plans, to the extent allowable by the applicable insurance carrier, if any, or applicable plan, the Parties shall use commercially reasonable efforts to cause each such plan to (i) waive any preexisting condition limitations to the extent such conditions are covered under the applicable life, disability, medical, health or dental plans, (ii) honor under such plans any deductible, co-payment and out-of-pocket expenses incurred by such employees and their beneficiaries during the portion of the calendar year prior to such participation and (iii) waive any waiting period limitation or evidence of insurability requirement which would otherwise be applicable to such employee on or after the Effective Time for the year in which the Effective Time or participation in such plans, as applicable, occurs.

(d) Unless Parent notifies Company to the contrary, the Company shall have terminated the BTU International, Inc. 401(k) Savings & Retirement Plan, Plan No. 001 (the “Company 401(k) Plan”) immediately prior to the Closing Date by resolutions adopted by the Company Board reasonably acceptable to Parent, and simultaneously amend the Company 401(k) Plan to the extent necessary to comply with all applicable laws to the extent not previously amended. The Company shall notify all participants in the Company 401(k) Plan of the plan’s termination, and the consequences thereof, prior to the Closing Date. At

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Closing, the Company shall deliver to Parent (i) an IRS Form 5310 determination letter application (completed to Parent's reasonable satisfaction), and (ii) all supporting documentation (reasonably satisfactory to Parent) relating to such IRS Form 5310 and the termination of the Company 401(k) Plan.

(e) Without limiting the generality of Section 9.5, this Section 6.6 shall be binding upon and inure solely to the benefit of each Party, and nothing in this Section 6.6, express or implied, is intended to confer upon any other Person, including, any current or former director, officer or employee of the Company, Parent or their respective Subsidiaries, any rights or remedies of any nature whatsoever under or by reason of this Section 6.6. Nothing in this Section 6.6, express or implied, shall be (i) deemed an amendment of any Company Benefit Plan or Parent Benefit Plan, or (ii) construed to prevent any Party or its Affiliates from terminating or modifying to any extent or in any respect any employee benefit plan that a Party or its Affiliates may establish or maintain.

Section 6.7 Indemnification: Directors' and Officers' Insurance.

(a) In the event of any threatened or actual Action, whether civil, criminal or administrative, in which any individual who is now, or has been at any time prior to the date of this Agreement, or who becomes prior to the Effective Time, a director or officer of the Company or any of its Subsidiaries or who is or was serving at the request of the Company or any of its Subsidiaries as a director or officer of another Person (the "Indemnified Parties"), is, or is threatened to be, made a party based in whole or in part on, or arising in whole or in part out of, or pertaining to (i) the fact that he is or was a director or officer of the Company or any of its Subsidiaries, (ii) all acts or omissions by him taken at the request of the Company or any of its Subsidiaries at any time prior to the Effective Time, or (iii) this Agreement or any of the transactions contemplated by this Agreement, whether asserted or arising before or after the Effective Time, the Parties shall cooperate and use their best efforts to defend against and respond thereto. From and after the Effective Time, Parent shall indemnify and hold harmless, as and to the fullest extent permitted under applicable Law and the Company's Organizational Documents, each such Indemnified Party against any losses, claims, damages, liabilities, costs, expenses (including reimbursement for reasonable fees and expenses incurred in advance of the final disposition of any such Action upon receipt of any undertaking required by applicable Law), judgments, fines and amounts paid in settlement in connection with any such threatened or actual Action.

(b) Unless required by applicable law, no provision in any Organizational Documents of the Company or any of its Subsidiaries providing indemnification, advancement or exculpation shall for a period of six (6) years following the Effective Time be amended, modified or repealed in any manner that would adversely affect the rights or protections thereunder of any individuals who at the Effective Time were current or former directors, officers or employees of the Company or any of its Subsidiaries.

(c) The Company shall purchase, prior to the Effective Time (and Parent shall cause to be maintained in effect throughout its term), a six (6) year prepaid "tail policy" from a broker specifically designated by the Parent, on terms and conditions (in both amount and scope) providing substantially equivalent benefits as the current policies of directors', officers' and employees' liability insurance maintained by the Company with respect to acts or omissions occurring prior to the Effective Time that were committed by such directors, officers and employees in their capacity as such.

(d) The provisions of this Section 6.7 shall survive the Effective Time and are intended to be for the benefit of, and shall be enforceable by, each Indemnified Party and his or her heirs and Representatives and are in addition to, and not in substitution for, any other rights to indemnification or contribution that any such Person may have by contract or otherwise.

(e) If Parent or the Surviving Corporation or any of its successors or assigns shall (i) consolidate with or merge into any other Person and shall not be the continuing or surviving corporation or entity of such consolidation or merger or (ii) transfer all or substantially all of its properties and assets to any Person, then, and in each such case, proper provisions shall be made so that the successors and assigns of Parent or the Surviving Corporation (or acquirer of such assets), as the case may be, shall assume all of the obligations of Parent or the Surviving Corporation set forth in this Section 6.7.

Section 6.8 Additional Agreements. In case at any time after the Effective Time any further action is necessary or desirable to carry out the purposes of this Agreement (including any merger between a Subsidiary of Parent, on the one hand, and

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a Subsidiary of the Company, on the other) or to vest the Surviving Corporation with full title to all properties, assets, rights, approvals, immunities and franchises of either Party, the proper officers and directors of each Party and their respective Subsidiaries shall take all such necessary action as may be reasonably requested by, and at the sole expense of, Parent.

Section 6.9 Advice of Changes. The Company and Parent shall promptly advise the Other Party of any change or event (a) having or reasonably likely to have a Company Material Adverse Effect, with respect to the Company, or a Parent Material Adverse Effect, with respect to the Parent, or (b) that it believes would or would be reasonably likely to cause or constitute a breach of any of its representations, warranties or covenants contained in this Agreement, which breach would result in, if occurring or continuing on the Closing Date, the failure of the conditions set forth in Section 7.1 or Section 7.2, with respect to the Company, or Section 7.1 or Section 7.3, with respect to Parent; provided, however, that no such notification shall affect the representations, warranties, covenants or other agreements of the Parties (or remedies with respect thereto) or the conditions to the obligations of the Parties under this Agreement; provided, further, that a failure to comply with this Section 6.9 shall not constitute the failure of any condition set forth in Article VII to be satisfied unless the underlying Company Material Adverse Effect, Parent Material Adverse Effect or material breach would independently result in the failure of a condition set forth in Article VII to be satisfied.

Section 6.10 Section 16 Matters. Prior to the Effective Time, the Company and Parent shall take all such steps as may be required to cause to be exempt under Rule 16b-3 promulgated under the Exchange Act any dispositions of equity securities of the Company (including derivative securities) or acquisitions of Parent Common Stock resulting from the transactions contemplated by this Agreement by any individual who is subject to Section 16 of the Exchange Act with respect to the Company, or will become subject to such requirements with respect to Parent, to be exempt under Rule 16b-3 promulgated under the Exchange Act in accordance with the procedures set forth therein.

Section 6.11 No Solicitation.

(a) The Company shall not, and shall cause its Subsidiaries not to, and shall not authorize or permit its and its Subsidiaries' Representatives to, directly or indirectly, solicit, initiate or knowingly take any action to facilitate or encourage the submission of any Takeover Proposal or the making of any proposal that could reasonably be expected to lead to any Takeover Proposal, or, subject to Section 6.11(b), (i) conduct or engage in any discussions or negotiations with, disclose any non-public information relating to the Company or any of its Subsidiaries to, afford access to the business, properties, assets, books or records of the Company or any of its Subsidiaries to, or knowingly assist, participate in, facilitate or encourage any effort by, any third party that is seeking to make, or has made, any Takeover Proposal, (ii) (A) amend or grant any waiver (other than any waiver, as required by Law, of any "don't ask don't waive" provisions of any standstill agreements now in effect) or release under any standstill or similar agreement with respect to any class of equity securities of the Company or any of its Subsidiaries or (B) approve any transaction under, or any third party becoming an "interested stockholder" under, Section 203 of the DGCL, or (iii) enter into any agreement in principle, letter of intent, term sheet, acquisition agreement, merger agreement, option agreement, joint venture agreement, partnership agreement or other Contract relating to any Takeover Proposal (each, a "Company Acquisition Agreement"). Subject to Section 6.11(b), neither the Company Board nor any committee thereof shall fail to make the Company Board Recommendation, or withdraw, amend, modify or materially qualify, in a manner adverse to Parent or Merger Sub, the Company Board Recommendation, or recommend a Takeover Proposal, fail to recommend against acceptance of any tender offer or exchange offer for the shares of Company Common Stock constituting a Takeover Proposal within ten (10) Business Days after the commencement of such offer, or make any public statement inconsistent with the Company Board Recommendation, or resolve or agree to take any of the foregoing actions (any of the foregoing, a "Company Adverse Recommendation Change"). The Company shall, and shall cause its Subsidiaries to cease immediately and cause to be terminated, and shall not authorize or knowingly permit any of its or their Representatives to continue, any and all existing activities, discussions or negotiations, if any, with any third party conducted prior to the date hereof with respect to any Takeover Proposal and shall use its reasonable best efforts to cause any such third party (or its agents or advisors) in possession of non-public information in respect of the Company or any of its Subsidiaries that was furnished by or on behalf of the Company and its Subsidiaries in connection with a Takeover Proposal to return or destroy (and confirm destruction of) all such information.

(b) Notwithstanding Section 6.11(a), prior to the receipt of the Company Stockholder Approval, the Company Board, directly or indirectly through any Representative, may, subject to Section 6.11(c) (i) participate in negotiations or discussions

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with any third party that has made (and not withdrawn) a bona fide, unsolicited Takeover Proposal in writing that the Company Board believes in good faith, after consultation with outside legal counsel and the Company Financial Advisor, constitutes or would reasonably be expected to result in a Superior Proposal, (ii) thereafter furnish to such third party non-public information relating to the Company or any of its Subsidiaries pursuant to an executed confidentiality agreement that constitutes an Acceptable Confidentiality Agreement; provided, that any non-public information relating to the Company or any of its Subsidiaries provided to such third party shall have been previously provided to Parent or is made available to Parent prior to, or concurrent with, the time such information is provided to such third party, (iii) following receipt of and on account of a Superior Proposal, make a Company Adverse Recommendation Change, and/or (iv) take any action related to such Takeover Proposal that any court of competent jurisdiction orders the Company to take (which order remains unstayed), but in each case referred to in the foregoing clauses (i) through (iii), only if the Company Board determines in good faith, after consultation with outside legal counsel, that the failure to take such action would reasonably be expected to cause the Company Board to be in breach of its fiduciary duties under applicable Law. Nothing contained herein shall prevent the Company Board from disclosing to the Company's stockholders a position contemplated by Rule 14d-9 and Rule 14e-2(a) promulgated under the Exchange Act with regard to a Takeover Proposal, if the Company determines, after consultation with outside legal counsel, that failure to disclose such position would constitute a violation of applicable Law.

(c) The Company Board shall not take any of the actions referred to in clauses (i) through (iv) of Section 6.11(b) unless the Company shall have delivered to Parent a prior written notice advising Parent that it intends to take such action. The Company shall notify Parent promptly (but in no event later than twenty-four (24) hours) after it obtains Knowledge of the receipt by the Company (or any of its Representatives) of any bona fide Takeover Proposal, any inquiry that would reasonably be expected to lead to a Takeover Proposal, any request for non-public information relating to the Company or any of its Subsidiaries or for access to the business, properties, assets, books or records of the Company or any of its Subsidiaries by any third party in connection with a Takeover Proposal. In such notice, the Company shall identify the third party making, and details of the material terms and conditions of, any such Takeover Proposal, indication or request. The Company shall keep Parent informed, on a reasonably current basis, of the status and material terms of any such Takeover Proposal, indication or request, including any material amendments or proposed amendments as to price and other material terms thereof. The Company shall provide Parent with at least forty-eight (48) hours prior notice of any meeting of the Company Board (or such lesser notice as is provided to the members of the Company Board) at which the Company Board is reasonably expected to consider any Takeover Proposal. The Company shall promptly provide Parent with a list of any non-public information concerning the Company's business, present or future performance, financial condition or results of operations, provided to any third party, and, to the extent such information has not been previously provided to Parent, copies of such information.

(d) Except as set forth in this Section 6.11(d), the Company Board shall not make any Company Adverse Recommendation Change or enter into (or permit any Subsidiary to enter into) a Company Acquisition Agreement. Notwithstanding the foregoing, at any time prior to the receipt of the Company Stockholder Approval, the Company Board may make a Company Adverse Recommendation Change or enter into (or permit any Subsidiary to enter into) a Company Acquisition Agreement, if: (i) the Company promptly notifies Parent, in writing, at least four (4) Business Days (the "Notice Period") before making a Company Adverse Recommendation Change or entering into (or causing a Subsidiary to enter into) a Company Acquisition Agreement, of its intention to take such action with respect to a Superior Proposal, which notice shall state expressly that the Company has received a Takeover Proposal that the Company Board intends to declare a Superior Proposal and that the Company Board intends to make a Company Adverse Recommendation Change and/or the Company intends to enter into a Company Acquisition Agreement; (ii) the Company attaches to such notice the most current material terms of the proposed agreement (which shall be updated on a prompt basis) and the identity of the third party making such Superior Proposal; (iii) the Company shall, and shall cause its Subsidiaries to, and shall use its reasonable best efforts to cause its and its Subsidiaries' Representatives to, during the Notice Period, negotiate with Parent in good faith to make such adjustments in the terms and conditions of this Agreement so that such Takeover Proposal ceases to constitute a Superior Proposal, if Parent, in its discretion, definitively proposes to make such adjustments (it being agreed that in the event that, after commencement of the Notice Period, there is any material revision to the terms of a Superior Proposal, including, any revision in price, the Notice Period shall be extended, if applicable, to ensure that at least two (2) Business Days remain in the Notice Period subsequent to the time the Company notifies Parent of any such material revision (it being understood that there may be multiple extensions)); and (iv) the Company Board determines in good faith, after consulting with outside legal counsel and its Company Financial Advisor, that such Takeover Proposal continues to constitute a Superior Proposal after taking into account any adjustments made by Parent during the Notice Period in the terms and conditions of this Agreement.

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Section 6.12 Takeover Statutes. Each of Parent, Merger Sub and the Company shall use its reasonable best efforts (a) to take all actions necessary so that no “moratorium,” “control share,” “fair price,” “anti-greenmail,” “takeover,” “interested stockholder” or similar Laws are or become applicable to the Merger or any of the other transactions contemplated by this Agreement and (b) if any such Law is or becomes applicable to the Merger or any of the other transactions contemplated by this Agreement, to take all actions necessary so that the Merger and the other transactions contemplated hereby may be consummated as promptly as reasonably practicable on the terms contemplated by this Agreement and otherwise to minimize the effect of such Laws on the Merger and the other transactions contemplated hereby.

Section 6.13 Reorganization Tax Matters. For federal income tax purposes, the Merger is intended to constitute a Tax-Free Reorganization and this Agreement is intended to constitute a “plan of reorganization” within the meaning of Treasury Regulations Section 1.368-2(g). After the date of this Agreement (including, without limitation, after the Effective Time) subject to the other terms and conditions in this Agreement, each party hereto shall take any action that is required to cause the Merger to qualify, and will not take any actions or cause any actions to be taken which could reasonably be likely to prevent the Merger from qualifying, as a Tax-Free Reorganization. All Parties hereto shall report the Merger as a Tax-Free Reorganization, unless otherwise required pursuant to a “determination” within the meaning of Section 1313(a) of the Code.

Section 6.14 Transaction Litigation. Subject to applicable Law, each of Parent and the Company shall give the Other Party the opportunity to participate in the defense or settlement of any stockholder litigation against such Party and its directors or executive officers relating to the Merger and the other transactions contemplated by this Agreement. Each Party agrees that, except to the extent permitted pursuant to Section 5.2(o), such Party shall not settle or offer to settle any litigation commenced prior to or after the date of this Agreement against such Party or its directors, executive officers or similar persons by any stockholder of such Party relating to the Merger or the other transactions contemplated by this Agreement without the prior written consent of the Other Party (such consent not to be unreasonably withheld, delayed or conditioned).

Section 6.15 Certain Governance Matters. At or immediately prior to the Effective Time: (a) Parent shall take all requisite action to appoint Paul J. van der Wansem as a member of the Parent Board; (b) the Key Employment Agreements shall be in full force and effect and none of the Key Employees shall have notified Parent or the Company of any intention to terminate such Key Employee’s Key Employment Agreement; and (c) Parent shall take all requisite action to amend its by-laws to establish a management executive committee, of which Paul J. van der Wansem shall initially be a member.

Section 6.16 Forms 5500. Prior to Closing, the Company shall have filed under the US Department of Labor’s delinquent filer program Forms 5500 in respect of Company Benefit Plans that are “welfare plans” within the meaning of Section 3(1) of ERISA, or shall otherwise have taken such other actions and/or made such other filings in order to remediate, rectify, correct or otherwise resolve, in a manner reasonably satisfactory to Parent, any issues identified relating to any delinquent Forms 5500 of the Company.

Section 6.17 Company Further Assurances. Prior to Closing, upon reasonable request by Parent and at the sole cost and expense of the Company, the Company shall use its reasonable best efforts to remediate, rectify, correct or otherwise resolve, in a manner reasonably satisfactory to Parent, any issues identified relating to the operations of the Company’s Subsidiaries in the People’s Republic of China, including without limitation any environmental, employee benefits, employment, intellectual property or corporate issues identified.

ARTICLE VII CONDITIONS PRECEDENT

Section 7.1 Conditions to Each Party’s Obligation to Effect the Merger. The respective obligations of the Company, Parent and Merger Sub to effect the Merger are subject to the satisfaction or waiver (to the extent permitted by Law) on or prior to the Closing Date of the following conditions:

(a) Stockholder Approval. The Company Stockholder Approval and the Parent Stockholder Approval shall have been obtained in accordance with applicable Law.

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(b) No Injunctions or Restraints; Illegality. No Laws shall have been adopted or promulgated by a Governmental Entity of competent jurisdiction and no temporary restraining order, preliminary or permanent injunction or other Order issued by a court or other Governmental Entity of competent jurisdiction in the United States shall be in effect, having the effect of making the Merger illegal or otherwise prohibiting consummation of the Merger.

(c) Regulatory Matters. Each of the approvals set forth in Section 3.4 and Section 4.4 required to be obtained for the consummation, as of the Effective Time, of the Merger and the other transactions contemplated by this Agreement (such approvals, the “Requisite Approvals”), other than any approvals the failure to obtain of which would not, individually or in the aggregate, have a Company Material Adverse Effect or Parent Material Adverse Effect, shall have been obtained.

(d) NASDAQ Listing. The shares of Parent Common Stock to be issued in the Merger and such other shares to be reserved for issuance in connection with the Merger shall have been approved for listing on NASDAQ, subject to official notice of issuance.

(e) Effectiveness of the Form S-4. The Form S-4 shall have been declared effective by the SEC under the Securities Act. No stop order suspending the effectiveness of the Form S-4 shall be in effect and no proceedings for that purpose shall be pending before the SEC.

Section 7.2 Additional Conditions to Obligations of Parent and Merger Sub. The obligations of Parent and Merger Sub to effect the Merger are subject to the satisfaction of, or waiver by Parent, on or prior to the Closing Date of the following conditions:

(a) Representations and Warranties. (i) The representations and warranties of the Company contained in the second sentence of Section 3.2(a) and the first sentence of Section 3.2(b) shall be true and correct other than *in de minimis* respects as of the date of this Agreement and as of the Closing Date, as if made as of such date (except for those representations and warranties which address matters only as of an earlier date which shall have been true and correct as of such earlier date); (ii) each representation and warranty of the Company qualified by a Company Material Adverse Effect shall be true and correct in all respects as of the date of this Agreement and as of the Closing Date, as if made as of such date (except for those representations and warranties which address matters only as of an earlier date which shall have been true and correct as of such earlier date); and (iii) each of the other representations and warranties of the Company contained in this Agreement shall be true and correct as of the date of this Agreement and as of the Closing Date, as if made as of such date (except for those representations and warranties which address matters only as of an earlier date which shall have been true and correct as of such earlier date), except in the case of this clause (iii), where the failure of such representations and warranties to be true and correct, individually or in the aggregate, has not had, or would not reasonably be expected to have, a Company Material Adverse Effect. Parent shall have received a certificate of the chief executive officer or the chief financial officer of the Company to such effect.

(b) Performance of Obligations of the Company. The Company shall have performed or complied with, in all material respects, all material agreements and covenants required to be performed or complied with by it under this Agreement at or prior to the Closing Date and Parent shall have received a certificate of the chief executive officer or the chief financial officer of the Company to such effect.

(c) Absence of Company Material Adverse Effect. Since the date of this Agreement, there shall not have occurred any event or development that, individually or in the aggregate, has had or would reasonably be expected to have a Company Material Adverse Effect.

(d) Tax Opinion. Parent shall have received an opinion from Squire Patton Boggs (US) LLP, on the basis of representations and warranties set forth or referred to in such opinion, dated as of the Closing Date, to the effect that the Merger will be treated as a “reorganization” within the meaning of Section 368(a) of the Code. In rendering such opinion, such counsel shall be entitled to receive and rely upon representations, warranties and covenants of officers of Parent, Merger Sub or the Company. In the event that Squire Patton Boggs (US) LLP is unwilling to provide such opinion, Parent shall accept such opinion from Pierce Atwood LLP, if such firm will provide the same to Parent.

Section 7.3 Additional Conditions to Obligations of the Company. The obligations of the Company to effect the Merger are subject to the satisfaction of, or waiver by the Company, on or prior to the Closing Date of the following conditions:

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(a) Representations and Warranties. (i) The representations and warranties of Parent and Merger Sub contained in Section 4.2 and Section 4.2 shall be true and correct other than in *de minimis* respects as of the date of this Agreement and as of the Closing Date, as if made as of such date (except for those representations and warranties which address matters only as of an earlier date which shall have been true and correct as of such earlier date); (ii) each representation and warranty of Parent and Merger Sub qualified by a Parent Material Adverse Effect shall be true and correct in all respects as of the date of this Agreement and as of the Closing Date, as if made as of such date (except for those representations and warranties which address matters only as of an earlier date which shall have been true and correct as of such earlier date); and (iii) each of the other representations and warranties of Parent and Merger Sub contained in this Agreement shall be true and correct as of the date of this Agreement and as of the Closing Date, as if made as of such date (except for those representations and warranties which address matters only as of an earlier date which shall have been true and correct as of such earlier date), except in the case of this clause (iii), where the failure of such representations and warranties to be true and correct, individually or in the aggregate, has not had, or would not reasonably be expected to have, a Parent Material Adverse Effect. The Company shall have received a certificate of the chief executive officer or the chief financial officer of Parent to such effect.

(b) Performance of Obligations of Parent and Merger Sub. Parent and Merger Sub shall have performed or complied with, in all material respects, all material agreements and covenants required to be performed or complied with by them under this Agreement at or prior to the Closing Date and the Company shall have received a certificate of the chief executive officer or the chief financial officer of Parent to such effect.

(c) Absence of Parent Material Adverse Effect. Since the date of this Agreement, there shall not have occurred any event or development that, individually or in the aggregate, has had or would reasonably be expected to have a Parent Material Adverse Effect.

(d) Tax Opinion. The Company shall have received an opinion from Pierce Atwood LLP, on the basis of representations and warranties set forth or referred to in such opinion, dated as of the Closing Date, to the effect that the Merger will be treated as a “reorganization” within the meaning of Section 368(a) of the Code. In rendering such opinion, such counsel shall be entitled to receive and rely upon representations, warranties and covenants of officers of Parent, Merger Sub or the Company. In the event that Pierce Atwood LLP is unwilling to provide such opinion, the Company shall accept such opinion from Squire Patton Boggs (US) LLP if such firm will provide the same to Company.

ARTICLE VIII TERMINATION AND AMENDMENT

Section 8.1 Termination by Mutual Consent. This Agreement may be terminated at any time prior to the Effective Time (notwithstanding any approval of this Agreement by the stockholders of the Company or Parent) by mutual written consent of the Company and Parent.

Section 8.2 Termination by Either Parent or the Company. This Agreement may be terminated at any time prior to the Effective Time (notwithstanding any approval of this Agreement by the stockholders of the Company or Parent) by either the Company Board or the Parent Board:

(a) if the Merger has not been consummated on or before one hundred and twenty (120) days following the date the Joint Proxy Statement and Form S-4 are filed with the SEC (the “Outside Date”); provided, that the right to terminate this Agreement pursuant to this Section 8.2(a) shall not be available to any party that has breached its obligations in any material respect under this Agreement in any manner that shall have proximately caused or resulted in the failure of the Merger to have been consummated by the Outside Date;

(b) if any Governmental Entity shall have issued a final and nonappealable Order permanently enjoining, restraining, or otherwise prohibiting the consummation of the transactions contemplated by this Agreement, provided, however, that the right to terminate this Agreement pursuant to this Section 8.2(b) shall not be available to any party whose breach of any representation, warranty, covenant, or agreement set forth in this Agreement has been the cause of, or resulted in, the issuance, promulgation, enforcement or entry of any such Order; or

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(c) if the Company Stockholder Approval or the Parent Stockholder Approval has not been obtained after a vote thereon at the Company Stockholder Meeting (or any adjournment or postponement thereof) or the Parent Stockholder Meeting (or any adjournment or postponement thereof), respectively.

Section 8.3 Termination by Parent. This Agreement may be terminated by Parent at any time prior to the Effective Time:

(a) if (i) a Company Adverse Recommendation Change shall have occurred, (ii) the Company shall have entered into, or publicly announced its intention to enter into, a Company Acquisition Agreement (other than an Acceptable Confidentiality Agreement), (iii) the Company Board fails to reaffirm (publicly, if so requested by Parent) the Company Board Recommendation within ten (10) Business Days after the date any Takeover Proposal (or material modification thereto) is first publicly disclosed by the Company or the Person making such Takeover Proposal, (iv) a tender offer or exchange offer relating to Company Common Stock shall have been commenced by a Person unaffiliated with Parent and the Company shall not have sent to its stockholders pursuant to Rule 14e-2 under the Securities Act, within ten (10) Business Days after such tender offer or exchange offer is first published, sent or given, a statement reaffirming the Company Board Recommendation and recommending that stockholders reject such tender or exchange offer, or (v) the Company or the Company Board (or any committee thereof) shall publicly announce its intentions to do any of actions specified in this Section 8.3(a); or

(b) if there shall have been a breach of any representation, warranty, covenant or agreement on the part of the Company set forth in this Agreement such that the conditions to the Closing of the Merger set forth in Section 7.2(a) or (b) would not be satisfied and, in either such case, such breach is incapable of being cured by the Outside Date; provided, that Parent shall have given the Company at least thirty (30) days written notice prior to such termination stating Parent's intention to terminate this Agreement pursuant to this Section 8.3(b); provided, further, Parent shall not have the right to terminate pursuant to this Section 8.3(b) if it is then in material breach of any of its representations, warranties, covenants or agreements set forth in this Agreement.

Section 8.4 Termination by the Company. This Agreement may be terminated by the Company at any time prior to the Effective Time:

(a) if prior to the receipt of the Company Stockholder Approval, the Company Board authorizes the Company, in full compliance with the terms of this Agreement, including Section 6.11(b) hereof, to enter into a Company Acquisition Agreement (other than an Acceptable Confidentiality Agreement) in respect of a Superior Proposal; provided, that the Company shall have paid any amounts due pursuant to Section 8.6 hereof in accordance with the terms, and at the times, specified therein; and provided, further that in the event of such termination, the Company substantially concurrently enters into such Company Acquisition Agreement;

(b) if there shall have been a breach of any representation, warranty, covenant or agreement on the part of Parent or Merger Sub set forth in this Agreement such that the conditions to the Closing of the Merger set forth in Section 7.3(a) or (b), as applicable, would not be satisfied and, in either such case, such breach is incapable of being cured by the Outside Date; provided, that the Company shall have given Parent at least thirty (30) days written notice prior to such termination stating the Company's intention to terminate this Agreement pursuant to this Section 8.4(b); provided, further, the Company shall not have the right to terminate pursuant to this Section 8.4(b) if it is then in material breach of any of its representations, warranties, covenants or agreements set forth in this Agreement; or

(c) if (i) a Parent Adverse Recommendation Change shall have occurred, (ii) Parent shall have failed to include the Parent Recommendation in the Joint Proxy Statement, or (iii) Parent or the Parent Board (or any committee thereof) shall publicly announce its intention to do any of actions specified in this Section 8.4(c).

Section 8.5 Notice of Termination; Effect of Termination. The party desiring to terminate this Agreement pursuant to this Article VIII (other than pursuant to Section 8.1) shall deliver written notice of such termination to each other party hereto specifying with particularity the reason for such termination, and any such termination in accordance with this Section 8.5 shall be effective immediately upon delivery of such written notice to the other party. If this Agreement is terminated pursuant to this Article VIII, it will become void and of no further force and effect, with no liability on the part of any party to this Agreement (or

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any stockholder, director, officer, employee, agent or Representative of such party) to any other party hereto, except (i) with respect to Section 6.2(b) (as well as the Confidentiality Agreement), this Section 8.5, Section 8.6, and Article IX (and any related definitions contained in any such Sections or Article), which shall remain in full force and effect and (ii) with respect to any liabilities or damages incurred or suffered by a party, to the extent such liabilities or damages were the result of fraud or the willful breach by another party of any of its representations, warranties, covenants or other agreements set forth in this Agreement.

Section 8.6 Fees and Expenses Following Termination

(a) If this Agreement is terminated by Parent pursuant to Section 8.3(a), then the Company shall pay to Parent (by wire transfer of immediately available funds), within two (2) Business Days after such termination, a fee in an amount equal to the Termination Fee.

(b) If this Agreement is terminated by the Company pursuant to Section 8.4(a), then the Company shall pay to Parent (by wire transfer of immediately available funds), at or prior to such termination, the Termination Fee.

(c) If this Agreement is terminated (i) by Parent pursuant to Section 8.3(b) and the Company Stockholder Approval shall not have been obtained at the Company Stockholders Meeting (including any adjournment or postponement thereof) or (ii) by the Company or Parent pursuant to (x) Section 8.2(a) hereof and the Company Stockholder Approval shall not have been obtained at the Company Stockholders Meeting (including any adjournment or postponement thereof) or (y) Section 8.2(c) hereof because the Company Stockholder Approval has not been obtained and, in the case of clauses (i) and (ii) immediately above, (A) prior to such termination (in the case of termination pursuant to Section 8.2(a) or Section 8.3(b)) or the Company Stockholders Meeting (in the case of termination pursuant to Section 8.2(c)), a Takeover Proposal shall (1) in the case of a termination pursuant to Section 8.2(a) or Section 8.2(c), have been publicly disclosed and not withdrawn or (2) in the case of a termination pursuant to Section 8.3(b), have been publicly disclosed or otherwise made or communicated to the Company or the Company Board, and not withdrawn, and (B) within twelve (12) months following the date of such termination of this Agreement the Company shall have entered into a definitive agreement with respect to any Takeover Proposal, or any Takeover Proposal shall have been consummated (in each case whether or not such Takeover Proposal is the same as the original Takeover Proposal made, communicated or publicly disclosed), then in any such event the Company shall pay to Parent (by wire transfer of immediately available funds), immediately prior to and as a condition to consummating such transaction, the Termination Fee less any Expense Reimbursement Amount already paid to Parent (it being understood for all purposes of this Section 8.6(c), all references in the definition of Takeover Proposal to 25% shall be deemed to be references to "more than 50%" instead). If a Person (other than Parent) makes a Takeover Proposal that has been publicly disclosed and subsequently withdrawn prior to such termination or the Company Stockholder Meeting, as applicable, and, within twelve (12) months following the date of the termination of this Agreement, such Person or any of its controlled Affiliates makes a Takeover Proposal that is publicly disclosed, such initial Takeover Proposal shall be deemed to have been "not withdrawn" for purposes of clauses (1) and (2) of this paragraph (c).

(d) If this Agreement is terminated by the Company pursuant to Section 8.4(c), then Parent shall pay to the Company (by wire transfer of immediately available funds), within two (2) Business days after such termination, a fee in an amount equal to the Termination Fee.

(e) If this Agreement is terminated (i) by the Company pursuant to Section 8.4(b) and the Parent Stockholder Approval shall not have been obtained at the Parent Stockholders Meeting (including any adjournment or postponement thereof) or (ii) by the Company or Parent pursuant to (x) Section 8.2(a) hereof and the Parent Stockholder Approval shall not have been obtained at the Parent Stockholders Meeting (including any adjournment or postponement thereof) or (y) Section 8.2(c) hereof because the Parent Stockholder Approval has not been obtained and, in the case of clauses (i) and (ii) immediately above, prior to such termination (in the case of termination pursuant to Section 8.2(a) or Section 8.4(b)) or the Parent Stockholders Meeting (in the case of termination pursuant to Section 8.2(c)), a Parent Takeover Proposal shall in the case of a termination pursuant to Section 8.2(a) or Section 8.2(c), have been publicly disclosed and not withdrawn or (1) in the case of a termination pursuant to Section 8.4(b), have been publicly disclosed or otherwise made or communicated to the Parent or the Parent Board, and not withdrawn, and Parent shall have entered into a definitive agreement with respect to any Parent Takeover Proposal, or any Parent Takeover Proposal shall have been consummated (in each case only if such Parent Takeover Proposal is the same as the original Parent Takeover Proposal made, communicated or publicly disclosed), then in any such event Parent shall pay to the Company

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(by wire transfer of immediately available funds), immediately prior to and as a condition to consummating such transaction, the Termination Fee less any Expense Reimbursement Amount already paid to the Company.

(f) If this Agreement is terminated pursuant to Section 8.2(c) because the Company Stockholder Approval was not obtained at the Company Stockholder Meeting and Section 8.6(c) does not apply, then the Company shall pay to Parent (by wire transfer of immediately available funds) within two (2) business days after such termination, the Expense Reimbursement Amount.

(g) If this Agreement is terminated pursuant to Section 8.2(c) because the Parent Stockholder Approval was not obtained at the Parent Stockholder Meeting, then Parent shall pay to the Company (by wire transfer of immediately available funds) within two (2) business days after such termination, the Expense Reimbursement Amount.

(h) Each Party acknowledges and hereby agrees that the provisions of this Section 8.6 are an integral part of the transactions contemplated by this Agreement (including the Merger), and that, without such provisions, the Parties would not have entered into this Agreement. If a Party shall fail to pay in a timely manner the amounts due pursuant to this Section 8.6 (the "Termination Party"), and, in order to obtain such payment, the Other Party makes a claim against the Termination Party that results in a judgment against the Other Party, the Termination Party shall pay to the Other Party the reasonable costs and expenses of the Other Party (including its reasonable attorneys' fees and expenses) incurred or accrued in connection with such suit, together with interest on the amounts set forth in this Section 8.6 at the prime lending rate prevailing during such period as published in *The Wall Street Journal*. Any interest payable hereunder shall be calculated on a daily basis from the date such amounts were required to be paid until (but excluding) the date of actual payment, and on the basis of a three hundred sixty (360)-day year. The parties acknowledge and agree that in no event shall a Party be obligated to pay the Termination Fee on more than one occasion.

(i) Except as expressly set forth in this Section 8.6, all Expenses incurred in connection with this Agreement and the transactions contemplated hereby will be paid by the party incurring such Expenses.

Section 8.7 Amendment. Subject to compliance with applicable Law, this Agreement may be amended by the Parties, by action taken or authorized by their respective Board or managing member or sole member, as applicable, at any time before or after approval of the matters presented in connection with the Merger by the stockholders of the Company or Parent; provided, however, that after any approval of the transactions contemplated by this Agreement by the stockholders of the Company or Parent, there may not be, without further approval of such stockholders, any amendment of this Agreement that requires such further approval under applicable Law. This Agreement may not be amended except by an instrument in writing signed by each of the Parties.

Section 8.8 Extension; Waiver. At any time prior to the Effective Time, the Parties, by action taken or authorized by their respective Board or managing member or sole member, as applicable, may, subject to applicable Law, (a) extend the time for the performance of any of the obligations or other acts of the Other Party, (b) waive any inaccuracies in the representations and warranties of the Other Party contained in this Agreement and (c) waive compliance with any of the agreements or conditions of the Other Party contained in this Agreement; provided, however, that after any approval of the transactions contemplated by this Agreement by the stockholders of the Company and Parent, there may not be, without further approval of such stockholders any extension or waiver of this Agreement that requires such further approval under applicable Law. Any agreement on the part of a Party to any such extension or waiver shall be valid only if set forth in a written instrument signed on behalf of such Party, but such extension or waiver or failure to insist on strict compliance with an obligation, covenant, agreement or condition shall not operate as a waiver of, or estoppel with respect to, any subsequent or other failure.

ARTICLE IX GENERAL PROVISIONS

Section 9.1 Non-Survival of Representations, Warranties and Agreements. None of the representations, warranties, covenants and other agreements in this Agreement or in any instrument delivered pursuant to this Agreement, including any rights arising out of any breach of such representations, warranties, covenants and other agreements, shall survive the Effective Time, except for those covenants and agreements contained herein and therein (including Article I and Article II, Section 6.6, Section 6.7, Section 6.8 and Section 6.14) that by their terms are to be performed in whole or in part after the Effective Time and this Article IX.

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Section 9.2 Notices. Any notices or other communications required or permitted under, or otherwise given in connection with, this Agreement shall be in writing and shall be deemed to have been duly given (a) when delivered or sent if delivered in person or sent by facsimile transmission (provided confirmation of facsimile transmission is obtained); (b) on the fifth (5th) Business Day after dispatch by registered or certified mail (return receipt requested and first-class postage prepaid); or (c) on the next Business Day if transmitted by national overnight courier (with proof of service), in each case as follows:

- (a) if to Parent or Merger Sub, to:

Amtech Systems, Inc.
131 South Clark Drive
Tempe, AZ 85281
Attn: Fokko Pentinga
(480) 967-5146

with a copy (which shall not constitute notice) to:

Squire Patton Boggs (US) LLP
1 E. Washington, Suite 2700
Phoenix, AZ 85004
Attn: Christopher D. Johnson
(602) 528-4046

- (b) if to the Company, to:

BTU International, Inc.
23 Esquire Road
North Billerica, MA 01862
Attn: Paul J. van der Wansem
(978) 667-4111

with a copy (which shall not constitute notice) to:

Pierce Atwood LLP
100 Summer Street, #2250
Boston, MA 02110
Attn: Timothy C. Maguire
(617) 488-8140

Section 9.3 Headings. The table of contents and headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

Section 9.4 Counterparts. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same agreement and shall become effective when one or more counterparts have been signed by each of the Parties and delivered to the Other Party, it being understood that each Party need not sign the same counterpart. Signatures to this Agreement transmitted by facsimile transmission, by electronic mail in "portable document format" (".pdf") form, or by any other electronic means intended to preserve the original graphic and pictorial appearance of a document, shall have the same effect as physical delivery of the paper document bearing the original signature.

Section 9.5 Entire Agreement; No Third-Party Beneficiaries

(a) This Agreement (including the Exhibits and Schedules hereto), the Company Support Agreements, the Parent Support Agreements, the Confidentiality Agreement, and any document delivered by the Parties in connection herewith constitute the entire agreement among the Parties with respect to the subject matter of this Agreement and supersede all other prior agreements and understandings, both written and oral, among the Parties to this Agreement with respect to the subject matter of this Agreement. In the event of any inconsistency between the statements in the body of this Agreement, the Confidentiality Agreement, and the Company Disclosure Letter and the Parent Disclosure Letter (other than an exception expressly set forth as such therein), the statements in the body of this Agreement will control.

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(b) Except as provided in Section 6.7 and Section 6.15 hereof (which shall be to the benefit of and may be enforced by the parties referred to in such section), this Agreement is for the sole benefit of the Parties hereto and their permitted assigns and respective successors and nothing herein, express or implied, is intended to or shall confer upon any other Person or entity any legal or equitable right, benefit or remedy of any nature whatsoever under or by reason of this Agreement.

Section 9.6 Governing Law. This Agreement shall be governed and construed in accordance with the laws of the State of Delaware (without giving effect to choice of law principles thereof).

Section 9.7 Severability. If any term or other provision of this Agreement is invalid, illegal or incapable of being enforced by any Law or public policy, all other terms and provisions of this Agreement shall nevertheless remain in full force and effect so long as the economic or legal substance of the transactions contemplated hereby is not affected in any manner materially adverse to any Party. Notwithstanding the foregoing, upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the Parties shall negotiate in good faith to modify this Agreement so as to effect the original intent of the Parties as closely as possible in an acceptable manner in order that the transactions contemplated hereby are consummated as originally contemplated to the greatest extent possible.

Section 9.8 Assignment. Neither this Agreement nor any of the rights, interests or obligations hereunder shall be assigned by any of the Parties, in whole or in part (whether by operation of Law or otherwise), without the prior written consent of the Other Party, and any attempt to make any such assignment without such consent shall be null and void, except that Merger Sub may assign, in its sole discretion, any or all of its rights, interests and obligations under this Agreement to any wholly owned Subsidiary of Parent without the consent of the Company, but no such assignment shall relieve Merger Sub of any of its obligations under this Agreement. Subject to the preceding sentence, this Agreement will be binding upon, inure to the benefit of and be enforceable by the Parties and their respective successors and assigns.

Section 9.9 Submission to Jurisdiction; Waivers. Each of the Parties irrevocably agrees that any legal action or proceeding with respect to this Agreement or for recognition and enforcement of any judgment in respect hereof brought by any Other Party or its successors or assigns may be brought and determined exclusively in the Court of Chancery of the State of Delaware or, if under applicable Law exclusive jurisdiction over such matter is vested in the federal courts, any court of the United States located in the State of Delaware, and each of the Parties hereby irrevocably submits with regard to any such action or proceeding for itself and in respect to its property, generally and unconditionally, to the exclusive jurisdiction of the aforesaid courts and agrees that it will not bring any legal action or proceeding with respect to this Agreement or for recognition and enforcement of any judgment in respect hereof in any court other than the aforesaid courts. Each of the Parties hereby irrevocably waives, and agrees not to assert, by way of motion, as a defense, counterclaim or otherwise, in any action or proceeding with respect to this Agreement or for recognition and enforcement of any judgment in respect hereof, (a) any claim that it is not personally subject to the jurisdiction of the above-named courts for any reason other than the failure to lawfully serve process, (b) that it or its property is exempt or immune from jurisdiction of any such court or from any legal process commenced in such courts (whether through service of notice, attachment prior to judgment, attachment in aid of execution of judgment, execution of judgment or otherwise), and (c) to the fullest extent permitted by applicable Law, that (i) the Action in any such court is brought in an inconvenient forum, (ii) the venue of such suit, action or proceeding is improper and (iii) this Agreement, or the subject matter hereof, may not be enforced in or by such courts. Each Party irrevocably consents to service of process in the manner provided for notices in Section 9.2; provided that nothing in this Agreement shall affect the right of any Party to serve process in any other manner permitted by Law.

Section 9.10 Specific Performance. The Parties agree that irreparable damage would occur if any provision of this Agreement were not performed in accordance with the terms hereof or otherwise breached, that monetary damages, even if available, would not be an adequate remedy therefor and therefore fully intend for specific performance to be the principal remedy for breaches of this Agreement, and that the Parties shall be entitled to an injunction or injunctions to prevent breaches or threatened breaches of this Agreement or to enforce specifically the performance of the terms and provisions hereof in any federal court located in the State of Delaware or any Delaware state court, in addition to any other remedy to which they are entitled at Law or in equity. Each Party further acknowledges and agrees that the agreements contained in this Section 9.10 are an integral part of the transactions contemplated by this Agreement and that, without these agreements, the Other Party would not enter into this Agreement. Each Party further agrees that no Other Party or any other Person shall be required to obtain, furnish or post any bond or similar instrument in connection with or as a condition to obtaining any remedy referred to in this Section 9.10, and each

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Party irrevocably waives any right it may have to require the obtaining, furnishing or posting of any such bond or similar instrument.

Section 9.11 Waiver of Jury Trial. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES, AND THEREFORE EACH SUCH PARTY HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT SUCH PARTY MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LITIGATION DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT, OR THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT. EACH PARTY CERTIFIES AND ACKNOWLEDGES THAT (I) NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER, (II) EACH PARTY UNDERSTANDS AND HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (III) EACH PARTY MAKES THIS WAIVER VOLUNTARILY AND (IV) EACH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS Section 9.11.

Section 9.12 Interpretation. When a reference is made in this Agreement to an Article, a Section, Exhibit or Schedule, such reference shall be to an Article of, a Section of, or an Exhibit or Schedule to, this Agreement unless otherwise indicated. Whenever the words “include,” “includes” or “including” are used in this Agreement, they shall be deemed to be followed by the words “without limitation.” All references to “dollars” or “\$” are to United States dollars. The words “hereof,” “hereto,” “hereby,” “herein” and “hereunder” and words of similar import when used in this Agreement shall refer to this Agreement as a whole and not to any particular provision of this Agreement. References to “this Agreement” shall include the Company Disclosure Letter and the Parent Disclosure Letter. The definitions contained in this Agreement are applicable to the singular as well as the plural forms of such terms and to the masculine as well as to the feminine and neuter genders of such term. This Agreement is the product of negotiation by the Parties having the assistance of counsel and other advisors. It is the intention of the Parties that this Agreement not be construed more strictly with regard to one Party than with regard to the others.

Section 9.13 Publicity. The initial press release with respect to this Agreement and the Merger shall be mutually agreed upon by Parent and the Company. Thereafter, neither Parent nor the Company shall, and neither Parent nor the Company shall permit any of its Subsidiaries to, issue or cause the publication of any press release or other public announcement with respect to, or otherwise make any public statement concerning, the transactions contemplated by this Agreement without the prior consent (which consent shall not be unreasonably withheld, delayed or conditioned) of Parent, in the case of a proposed announcement or statement by the Company, or the Company, in the case of a proposed announcement or statement by Parent; provided, however, that either Party may, without the prior consent of the Other Party (but after prior consultation with the Other Party to the extent practicable under the circumstances) issue or cause the publication of any press release or other public announcement to the extent required by Law or by the rules and regulations of the NASDAQ; provided, further, that each Party may make oral or written public announcements, releases or statements without complying with the foregoing procedures if the substance of such announcement, release or statement was publicly disclosed and previously subject to the foregoing requirements. Notwithstanding anything herein to the contrary, the restrictions of this Section 9.13 shall cease to apply following a Company Adverse Recommendation Change or Parent Adverse Recommendation Change.

Section 9.14 Definitions. As used in this Agreement the following terms have the following meanings:

“Acceptable Confidentiality Agreement” means a confidentiality and standstill agreement that contains confidentiality and standstill provisions that are no less favorable to the Company than those terms currently in effect and contained in the Confidentiality Agreement.

“Actions” has the meaning set forth in Section 3.8(a).

“Affiliate” means, with respect to any Person, another Person that, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with such Person, where “control” means the possession,

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directly or indirectly, of the power to direct or cause the direction of management policies of a Person, whether through the ownership of voting securities, by Contract, as trustee or otherwise.

“Affiliated Group” shall mean any affiliated group within the meaning of Code §1504(a) or any similar group defined under a similar provision of any Law.

“Agreement” has the meaning set forth in the Preamble.

“Bankruptcy and Equity Exception” has the meaning set forth in Section 3.3(a).

“Board” means the board of directors of any specified Person and any committees thereof.

“Book-Entry Shares” has the meaning set forth in Section 1.8(c).

“Business Day” means any day other than a Saturday or Sunday or any day on which the Federal Reserve Bank of New York is closed or any day on which banks in the city of New York are required to close.

“Capitalization Date” has the meaning set forth in Section 3.2(a).

“Certificate of Merger” has the meaning set forth in Section 1.3.

“Certificates” has the meaning set forth in Section 1.8(c).

“Closing” has the meaning set forth in Section 1.2.

“Closing Date” has the meaning set forth in Section 1.2.

“COBRA” means the requirements of Part 6 of Subtitle B of Title I of ERISA and Code §4980B and of any similar state Law.

“Code” means the Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder.

“Company” has the meaning set forth in the Preamble.

“Company 401(k) Plan” has the meaning set forth in Section 6.6(d).

“Company Acquisition Agreement” has the meaning set forth in Section 6.11(a).

“Company Adverse Recommendation Change” has the meaning set forth in Section 6.11(a).

“Company Benefit Plan” has the meaning set forth in Section 3.12(a).

“Company Board” has the meaning set forth in the Recitals.

“Company Board Recommendation” has the meaning set forth in Section 6.3(a).

“Company Common Stock” has the meaning set forth in Section 1.8(b).

“Company Disclosure Letter” has the meaning set forth in Article III.

“Company Employees” means employees of the Company or any Subsidiary at Closing who remain or become an employee of the Company, Parent or any Affiliate at Closing.

“Company Employment Agreement” means a contract, offer letter or agreement of the Company or any of its Subsidiaries with or addressed to any individual who is rendering or has rendered services thereto as an employee or consultant

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pursuant to which the Company or any of its Subsidiaries has any actual or contingent liability or obligation to provide compensation and/or benefits in consideration for past, present or future services.

“Company Equity Award” means a Company Stock Option or a Company Stock Award or a phantom stock award, as the case may be.

“Company Financial Advisor” has the meaning set forth in Section 3.22.

“Company Financial Statements” has the meaning set forth in Section 3.5(a).

“Company Insiders” means those officers and directors (including directors by deputization) of the Company who are subject to the reporting requirements of Section 16(a) of the Exchange Act and who are listed in the Section 16 Information.

“Company Material Adverse Effect” means any event, occurrence, fact, condition or change that is, or would reasonably be expected to become, individually or in the aggregate, materially adverse to the business, results of operations, prospects, condition (financial or otherwise), or assets of the Company and its Subsidiaries, taken as a whole; provided, however, that a Company Material Adverse Effect shall not be deemed to include events, occurrences, facts, conditions or changes arising out of, relating to or resulting from: (a) changes generally affecting the economy, financial or securities markets; (b) the announcement of the transactions contemplated by or compliance with the terms of this Agreement; (c) any outbreak or escalation of war or any act of terrorism; (d) general conditions in the industry in which the Company and its Subsidiaries operate; (e) any change in Laws or the interpretation thereof or GAAP or the interpretation thereof; or (f) disclosures in the Company Disclosure Letter; provided further, however, that any event, change and effect referred to in clauses (a), (c), (d) or (e) immediately above shall be taken into account in determining whether a Company Material Adverse Effect has occurred or would reasonably be expected to occur to the extent that such event, change or effect has a disproportionate effect on the Company and its Subsidiaries, taken as a whole, compared to other participants in the industries in which the Company and its Subsidiaries conduct their businesses.

“Company Material Contracts” has the meaning set forth in Section 3.11(b).

“Company Permits” has the meaning set forth in Section 3.18(a).

“Company Preferred Stock” has the meaning set forth in Section 3.2(a).

“Company Restricted Stock” has the meaning set forth in Section 1.9(b).

“Company SEC Documents” has the meaning set forth in Section 3.5(a).

“Company Stock Award” means each restricted stock unit award and other right, contingent or accrued, to acquire or receive shares of Company Common Stock or benefits measured by the value of such shares, and each award of any kind consisting of shares of Company Common Stock that may be held, awarded, outstanding, payable or reserved for issuance under any Company Stock Plan (as defined below), other than Company Stock Options.

“Company Stock Plans” means those plans listed in Section 3.2(b) of the Company Disclosure Letter.

“Company Stockholder Approval” has the meaning set forth in Section 3.3(a).

“Company Stockholder Meeting” has the meaning set forth in Section 6.3.

“Company Subsidiary Securities” has the meaning set forth in Section 3.2(d).

“Company Support Agreement” has the meaning set forth in the Recitals.

“Confidentiality Agreement” means the Mutual Confidentiality Disclosure Agreement between the Company and Parent entered into on August 6, 2013 (as amended and in effect as of the date of this Agreement).

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“Contracts” means, with respect to any Person, any of the agreements, contracts, leases (whether for real or personal property), notes, bonds, mortgages, indentures, deeds of trust, loans, evidences of Indebtedness, letters of credit, settlement agreements, franchise agreements, undertakings, employment agreements, license agreements, or similar instruments to which such Person or its Subsidiaries is a party, whether oral or written.

“Credit Agreements” means the Company’s credit agreements and the Parent’s credit agreements (or renewals, extensions or replacements thereof that do not increase the aggregate amount available thereunder and that do not provide for any termination fees or penalties, prohibit pre-payments or provide for any pre-payment penalties, or contain any like provisions limiting or otherwise affecting the ability of the applicable Party or its Subsidiaries or successors to terminate or pre-pay such facilities, or contain financial terms less favorable, in the aggregate, than existing credit facilities, and as they may be so renewed, extended or replaced).

“Current Offering” has the meaning set forth in Section 1.10.

“DGCL” has the meaning set forth in Section 1.1.

“Effective Time” has the meaning set forth in Section 1.3.

“Environmental Laws” means any and all Laws that (i) regulate or relate to the protection of human health and safety to the extent exposed to harmful or deleterious substances in the workplace, protection or clean-up of natural resources (including without limitation wildlife and plants) and the environment (including without limitation soils, subsurface soils, groundwater, surface and subsurface water, waterways and ambient air); (ii) regulate or relate to the treatment, storage, handling, packaging, labeling, transport or disposal, arrangement for transport or disposal, or release of, or exposure to, any pollutants, contaminants, hazardous substances, wastes or similarly regulated materials; or (iii) impose liability with respect to any of the foregoing, including property and business transfer Laws to the extent relating to identification and allocation of environmental liabilities.

“Environmental Permit” means any permit, certificate, consent, registration, exemption, variance, plan, approval, identification number, license and other authorization issued by any Governmental Entity or required under any applicable Environmental Law.

“Equity Interest” means any share, capital stock, partnership, limited liability company, membership, member or similar interest in any Person, and any option, warrant, right or security (including debt securities) convertible, exchangeable or exercisable therefor or pursuant thereto.

“ERISA” has the meaning set forth in Section 3.12(a).

“ERISA Affiliate” has the meaning set forth in Section 3.12(a).

“ESPP” has the meaning set forth in Section 1.10.

“Exchange Act” the Securities Exchange Act of 1934.

“Exchange Agent” has the meaning set forth in Section 2.1.

“Exchange Fund” has the meaning set forth in Section 2.1.

“Exchange Ratio” has the meaning set forth in Section 1.8(b).

“Expense Reimbursement Amount” means \$1,000,000.

“Expenses” means, with respect to any Person, all reasonable and documented out-of-pocket fees and expenses (including all fees and expenses of counsel, accountants, financial advisors and investment bankers of such Person and its

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Affiliates), incurred by such Person or on its behalf in connection with or related to the authorization, preparation, negotiation, execution and performance of this Agreement and any transactions related thereto, any litigation with respect thereto, the preparation, printing, filing and mailing of the Joint Proxy Statement, the filing of any required notices with Governmental Entities, or in connection with other regulatory approvals, and all other matters related to the Merger other transactions contemplated hereby.

“FCPA” has the meaning set forth in Section 3.9(a).

“Foreign Benefit Plans” has the meaning set forth in Section 3.12(a).

“Form S-4” has the meaning set forth in Section 6.1.

“GAAP” means United States generally accepted accounting principles.

“Governmental Entity” means any supranational, national, state, municipal, local, or foreign government, any instrumentality, subdivision, court, administrative agency or commission or other governmental authority, or any quasi-governmental or private body exercising any regulatory or other governmental or quasi-governmental authority.

“Hazardous Material” means chemicals, materials, substances or wastes in any amount or concentration that are regulated pursuant to or the basis for liability pursuant to any Environmental Law, including any “hazardous substance,” “hazardous material,” “hazardous waste,” “toxic substance,” “pollutant,” “regulated substance,” “solid waste,” “contaminant” or words of similar import defined under any Environmental Law.

“Indebtedness” means, with respect to a Person, (i) all obligations of such Person for borrowed money, (ii) all obligations of such Person evidenced by bonds, debentures, notes and similar agreements, (iii) all leases of such Person capitalized pursuant to GAAP, and (iv) all obligations of such Person under sale-and-lease back transactions, agreements to repurchase securities sold and other similar financing transactions.

“Indemnified Parties” has the meaning set forth in Section 6.7(a).

“Insurance Policy” has the meaning set forth in Section 3.17.

“Intellectual Property” means trademarks, service marks, brand names, certification marks, trade dress or any other indications of origin, the goodwill associated with the foregoing and registrations in any domestic or foreign jurisdiction of, and applications in any such jurisdiction to register, the foregoing, including any extension, modification or renewal of any such registration or application; inventions, discoveries and ideas, whether patentable or not, in any domestic or foreign jurisdiction; patents, applications for patents (including divisions, continuations, continuations-in-part and renewal applications), utility models, statutory invention registrations, and any renewals, extensions, reexaminations or reissues thereof, in any such jurisdiction; non-public information, trade secrets and confidential information and rights in any domestic or foreign jurisdiction to limit the use or disclosure thereof by any Person; writings and other works of authorship, whether copyrightable or not, in any such jurisdiction; and registrations or applications for registration of copyrights in any domestic or foreign jurisdiction, and any renewals or extensions thereof; and any similar or other intellectual property or proprietary rights.

“IRS” has the meaning set forth in Section 3.12(b).

“Joint Proxy Statement” has the meaning set forth in Section 6.1.

“Key Employee” has the meaning set forth in the Recitals.

“Knowledge” means (i) with respect to the Company, the actual knowledge after due inquiry of any of the Persons listed in Section 9.14(a) of the Company Disclosure Letter and (ii) with respect to Parent or Merger Sub, the actual knowledge after due inquiry of any of the Persons listed in Section 9.14(a) of the Parent Disclosure Letter.

“Law” means any applicable federal, regional, state, local, national or supranational or foreign law (including common law), statute, ordinance, rule, regulation, Order, code, ruling, decree, arbitration award, legally enforceable requirement, license or permit of any Governmental Entity.

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“Leased Real Property” has the meaning set forth in Section 3.10.

“Lien” means any lien, mortgage, pledge, encumbrance, condition, restriction, lease, license, security interest or deed of trust.

“Merger” has the meaning set forth in Section 1.1.

“Merger Consideration” has the meaning set forth Section 1.8(b).

“Merger Sub” has the meaning set forth in the Preamble.

“NASDAQ” means the NASDAQ stock market.

“Notice Period” has the meaning set forth in Section 6.11(d).

“Order” has the meaning set forth in Section 3.8(a).

“Organizational Documents” means, with respect to any entity, the certificate of formation, certificate of incorporation, articles of organization, articles of incorporation, bylaws, regulations, operating agreement, limited liability company agreement, or other organizational document of such entity and any amendments thereto.

“Other Party” means, with respect to the Company, Parent or Merger Sub and means, with respect to Parent or Merger Sub, the Company, unless the context otherwise requires.

“Outside Date” has the meaning set forth in Section 8.2(a).

“Owned Real Property” has the meaning set forth in Section 3.10.

“Parent” has the meaning set forth in the Preamble.

“Parent Adverse Recommendation Change” has the meaning set forth in Section 6.3(b).

“Parent Benefit Plan” has the meaning set forth in Section 4.11(a).

“Parent Board” has the meaning set forth in the Recitals.

“Parent Common Stock” has the meaning set forth in the Recitals and Section 4.2.

“Parent Disclosure Letter” has the meaning set forth in Article IV.

“Parent Financial Advisor” has the meaning set forth in Section 4.22.

“Parent Financial Statements” has the meaning set forth in Section 4.5(a).

“Parent Insurance Policies” has the meaning set forth in Section 4.17.

“Parent Leased Real Property” has the meaning set forth in Section 4.10.

“Parent Material Adverse Effect” means any event, occurrence, fact, condition or change that is, or would reasonably be expected to become, individually or in the aggregate, materially adverse to the business, results of operations, prospects, condition (financial or otherwise), or assets of Parent and its Subsidiaries, taken as a whole, provided, however, that, for the purposes of clause (i), a Parent Material Adverse Effect shall not be deemed to include events, occurrences, facts, conditions or

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changes arising out of, relating to or resulting from: (a) changes generally affecting the economy, financial or securities markets; (b) the announcement of the transactions contemplated by or compliance with the terms of this Agreement; (c) any outbreak or escalation of war or any act of terrorism; (d) general conditions in the industry in which Parent and its Subsidiaries operate; (e) any change in Laws or the interpretation thereof or GAAP or the interpretation thereof; or (f) disclosure in the Parent Disclosure Letter; provided further, however, that any event, change and effect referred to in clauses (a), (c), (d) or (e) immediately above shall be taken into account in determining whether a Parent Material Adverse Effect has occurred or would reasonably be expected to occur to the extent that such event, change or effect has a disproportionate effect on Parent and its Subsidiaries, taken as a whole, compared to other participants in the industries in which Parent and its Subsidiaries conduct their businesses.

“Parent Owned Real Property” has the meaning set forth in Section 4.10.

“Parent Permits” has the meaning set forth in Section 4.17(a).

“Parent Rights Agreement” means the Amended and Restated Rights Agreement dated as of December 15, 2008, by and between Amtech Systems, Inc. and Computershare Trust Company, N.A., as rights agent.

“Parent SEC Documents” has the meaning set forth in Section 4.5(a).

“Parent Share Issuance” has the meaning set forth in the Recitals.

“Parent Stock Option” has the meaning set forth Section 1.9(a).

“Parent Stockholder Approval” has the meaning set forth in Section 4.3(a).

“Parent Stockholder Meeting” has the meaning set forth in Section 6.3.

“Parent Support Agreement” has the meaning set forth in the Recitals.

“Parent Takeover Proposal” means a proposal or offer from, or indication of interest in making a proposal or offer by, any Person relating to any (a) direct or indirect acquisition of assets of the Parent (excluding sales of assets in the ordinary course of business) equal to fifty percent (50%) or more of the fair market value of Parent’s consolidated assets or to which fifty percent (50%) or more of Parent’s net revenues or net income on a consolidated basis are attributable, (b) direct or indirect acquisition of fifty percent (50%) or more of the voting equity interests of Parent, (c) tender offer or exchange offer that if consummated would result in any Person beneficially owning (within the meaning of Section 13(d) of the Exchange Act) fifty percent (50%) or more of the voting equity interests of Parent, (d) merger, consolidation, other business combination or similar transaction involving Parent pursuant to which such Person would own fifty percent (50%) or more of the consolidated assets, or net revenues of Parent, taken as a whole, or (e) liquidation or dissolution (or the adoption of a plan of liquidation or dissolution) of Parent or the declaration or payment of an extraordinary dividend (whether in cash or other property) by the Parent.

“Parties” has the meaning set forth in the Preamble.

“PBGC” has the meaning set forth in Section 3.12(b).

“Permitted Liens” means (i) Liens for Taxes not yet due and payable or that are being contested in good faith by appropriate proceedings and for which adequate reserves in accordance with GAAP have been established in the latest Company Financial Statements or Parent Financial Statements, as applicable, (ii) Liens in favor of vendors, carriers, warehousemen, repairmen, mechanics, workmen, materialmen, construction or similar Liens or other encumbrances arising by operation of Law or Contract and that secure obligations that are not yet due and payable or that are being contested in good faith by appropriate proceedings and for which adequate reserves in accordance with GAAP have been established in the latest Company Financial Statements or Parent Financial Statements, as applicable, (iii) Liens affecting the interest of the grantor of any easements benefiting owned real property and Liens of record attaching to real property, fixtures or leasehold improvements, which would not materially

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impair the use of the real property in the operation of the business thereon, (iv) Liens, exceptions, defects or irregularities in title, easements, imperfections of title, claims, charges, security interests, rights-of-way, covenants, restrictions, and other similar matters that would not, individually or in the aggregate, reasonably be expected to materially impair the continued use and operation of the assets to which they relate in the business of such entity and its Subsidiaries as presently conducted, and (v) Liens existing or expressly permitted pursuant to the Credit Agreements.

“Person” means an individual, corporation, limited liability company, partnership, joint venture, association, trust, unincorporated organization, Governmental Entity, or other entity or group (as defined in the Exchange Act).

“Qualifying Amendment” has the meaning set forth in Section 6.1.

“Related Entity” means, with respect to a Party, any Person that is not a Subsidiary of such Party in which such Party or a Subsidiary of such Party directly owns an Equity Interest.

“Release” means release, spill, leak, discharge, dispose of, pump, pour, emit, empty, inject, leach, dump or allow to escape into or through the environment.

“Representatives” means, with respect to any Party, such Party or any of its Subsidiaries’ respective directors, officers, partners, employees, investment bankers, financing sources, financial advisors, attorneys, accountants or other advisors, agents or other representatives.

“Requisite Approvals” has the meaning set forth in Section 7.1(c).

“Sarbanes-Oxley Act” has the meaning set forth in Section 3.5(a).

“SEC” has the meaning set forth in Section 3.5(a).

“Section 16 Information” means information accurate in all material respects regarding the Company Insiders, the number of shares of Company Common Stock held by each such Company Insider and expected to be exchanged for Parent Common Stock in the Merger, and the number and description of Company Stock Options or Company Restricted Stock held by each such Company Insider, as applicable, in connection with the Merger; provided that the requirement for a description of any Company Stock Options shall be deemed to be satisfied if copies of all Company Stock Plans, and forms of agreements evidencing grants thereunder, under which such Company Stock Options have been granted, have been made available to Parent.

“Securities Act” means the Securities Act of 1933, as amended.

“Stockholder Approval” means the Company Stockholder Approval or the Parent Stockholder Approval, as applicable.

“Subsidiary” means any corporation, partnership, joint venture or other legal entity of which Parent, the Company or such other Person, as the case may be (either alone or through or together with any other Subsidiary), owns, directly or indirectly, a majority of the stock or other Equity Interests, the holders of which are generally entitled to vote for the election of the board of directors or other governing body of such corporation, partnership, joint venture or other legal entity, or any Person that would otherwise be deemed a “subsidiary” under Rule 12b-2 promulgated under the Exchange Act.

“Superior Proposal” means a bona fide written Takeover Proposal involving the direct or indirect acquisition pursuant to a tender offer, exchange offer, merger, consolidation or other business combination, of all or substantially all of the Company’s consolidated assets or a majority of the outstanding Company Common Stock, that the Company Board determines in good faith (after consultation with outside legal counsel and the Company Financial Advisor) is more favorable from a financial point of view to the holders of Company Common Stock than the transactions contemplated by this Agreement, taking into account (a) all financial considerations, (b) the identity of the third party making such Takeover Proposal, (c) the anticipated timing, conditions (including any financing condition or the reliability of any debt or equity funding commitments) and prospects for completion of such Takeover Proposal, (d) the other terms and conditions of such Takeover Proposal and the implications thereof on the

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Company, including relevant legal, regulatory and other aspects of such Takeover Proposal deemed relevant by the Company Board and (e) any revisions to the terms of this Agreement and the Merger proposed by the Parent during the Notice Period set forth in Section 6.11(d).

“Surviving Corporation” has the meaning set forth in Section 1.1.

“Takeover Proposal” means a proposal or offer from, or indication of interest in making a proposal or offer by, any Person (other than Parent and its Subsidiaries, including Merger Sub) relating to any (a) direct or indirect acquisition of assets of the Company or its Subsidiaries (including any voting equity interests of Subsidiaries, but excluding sales of assets in the ordinary course of business) equal to twenty-five percent (25%) or more of the fair market value of the Company’s consolidated assets or to which twenty-five percent (25%) or more of the Company’s net revenues or net income on a consolidated basis are attributable, (b) direct or indirect acquisition of twenty-five percent (25%) or more of the voting equity interests of the Company, (c) tender offer or exchange offer that if consummated would result in any Person beneficially owning (within the meaning of Section 13(d) of the Exchange Act) twenty-five percent (25%) or more of the voting equity interests of the Company, (d) merger, consolidation, other business combination or similar transaction involving the Company or any of its Subsidiaries, pursuant to which such Person would own twenty-five percent (25%) or more of the consolidated assets, or net revenues of the Company, taken as a whole, or (e) liquidation or dissolution (or the adoption of a plan of liquidation or dissolution) of the Company or the declaration or payment of an extraordinary dividend (whether in cash or other property) by the Company.

“Takeover Statute” has the meaning set forth in Section 3.3(c).

“Tax-Free Reorganization” has the meaning set forth in the Recitals.

“Tax Return” means all Federal, state, local, provincial and foreign Tax returns, declarations, statements, reports, schedules, forms and information returns and, in each case, any amendments thereto.

“Taxes” includes all forms of taxation, whenever created or imposed, and whether of the United States or elsewhere, and whether imposed by a local, municipal, governmental, state, foreign, Federal or other Governmental Entity, or in connection with any agreement with respect to Taxes, including all interest, penalties and additions imposed with respect to such amounts.

“Taxing Authority” means, with respect to any Tax, the Governmental Entity or political subdivision thereof that imposes such Tax, and the agency (if any) charged with the collection of such Tax for such entity or subdivision, including any governmental or quasi-Governmental Entity or agency that imposes, or is charged with collecting, social security or similar charges or premiums.

“Termination Fee” means \$1,320,000.

“Termination Party” has the meaning set forth in Section 8.6(h).

“Third Party” means any Person, including as defined in Section 13(d) of the Exchange Act, other than Parent, the Company or any of their respective Affiliates, and the Representatives of such Person, in each case, acting in such capacity.

“Treasury Regulations” means the Income Tax Regulations promulgated under the Code, as such regulations may be amended from time to time (including corresponding provisions of succeeding regulations).

“Voting Debt” has the meaning set forth in Section 3.2(c).

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IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of the date first written above.

AMTECH SYSTEMS, INC.

By: /s/ Fokko Pentinga
Name: Fokko Pentinga
Title: President and Chief Executive Officer

BTU MERGER SUB, INC.

By: /s/ Fokko Pentinga
Name: Fokko Pentinga
Title: President and Chief Executive Officer

BTU INTERNATIONAL, INC.

By: /s/ Paul J. van der Wansem
Name: Paul J. van der Wansem
Title: President, Chief Executive Officer, and Chairman of
the Board of Directors

[Signature Page to Agreement and Plan of Merger]

Appendix A
Support Agreements

Stockholders to enter into Company Support Agreement:

Paul J. van der Wansem

Stockholders to enter into Parent Support Agreement:

J.S. Whang

[Appendix A]

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Appendix B
Key Employees

Paul J. van der Wansem
Peter Tallian

[Appendix B]

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STIFEL

October 20, 2014

Board of Directors
Amtech Systems, Inc.
131 South Clark Drive
Tempe, Arizona 85281

Members of the Board:

Stifel, Nicolaus & Company, Incorporated (“Stifel” or “we”) has been advised that Amtech Systems, Inc. (the “Company”) is considering entering into an Agreement and Plan of Merger (the “Merger Agreement”) with BTU International, Inc. (“BTUI”) and BTU Merger Sub, Inc., a wholly-owned subsidiary of the Company (“Merger Sub”), pursuant to which Merger Sub will be merged with and into BTUI with BTUI continuing as the surviving corporation and becoming a wholly-owned subsidiary of the Company (the “Merger”). In connection with the Merger, the Company has agreed to acquire all of the issued and outstanding shares of Common Stock, par value \$.01 per share, of BTUI (“BTUI Common Stock”), including any shares subject to outstanding restricted stock units, but excluding any shares held directly or indirectly by BTUI, in exchange for shares of Common Stock, par value \$.01 per share, of the Company (“Company Common Stock”). Each share of BTUI Common Stock shall be converted into the right to receive 0.3291 of a share of validly issued, fully paid and non-assessable Company Common Stock, par value \$0.01 per share (the “Exchange Ratio”). The terms and conditions of the Merger are more fully set forth in the Merger Agreement.

The Board of Directors of the Company (the “Board”) (in their capacities as such) has requested Stifel’s opinion (our “Opinion”), as investment bankers, as to the fairness, from a financial point of view and as of the date hereof, of the Exchange Ratio to the holders of the Company Common Stock.

In rendering our Opinion, we have, among other things:

- (i) discussed the Merger and related matters with the Company’s counsel and reviewed a draft of the Merger Agreement, dated October 19, 2014;
- (ii) reviewed a draft of the form of Support Agreement to be entered into by a certain stockholder of BTUI with the Company and Merger Sub;
- (iii) reviewed the audited consolidated financial statements of the Company contained in its Annual Reports on Form 10-K for the three years ended September 30, 2013, 2012 and 2011, and the unaudited consolidated interim financial statements of the Company contained in its Quarterly Reports on Form 10-Q for the quarters ended December 31, 2013, March 31, 2014 and June 30, 2014;
- (iv) reviewed the audited consolidated financial statements of BTUI contained in its Annual Reports on Form 10-K for the three years ended December 31, 2013, 2012 and 2011, and the unaudited consolidated interim financial statements of BTUI contained in its Quarterly Reports on Form 10-Q for the quarters ended March 30, 2014, and June 29, 2014;
- (v) reviewed and discussed with the Company’s management and BTUI’s management certain other publicly available information concerning the Company and BTUI;
- (vi) held discussions with the Company’s senior management including estimates of merger charges and the pro forma financial impact of the Merger on the combined company;

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- (vii) reviewed certain non-publicly available information concerning the Company and BTUI, including internal financial analyses and forecasts prepared by their respective managements for their respective companies, as well as certain internal financial analyses and forecasts of BTUI prepared by the Company's management, and held discussions with the Company's senior management regarding recent developments;
- (viii) reviewed and analyzed certain publicly available information concerning the terms of selected merger and acquisition transactions that we considered relevant to our analysis;
- (ix) reviewed and analyzed certain publicly available financial and stock market data relating to selected comparable public companies that we deemed relevant to our analysis;
- (x) participated in certain discussions and negotiations between representatives of the Company and BTUI;
- (xi) reviewed the reported prices and trading activity of the equity securities of the Company and BTUI;
- (xii) conducted such other financial studies, analyses and investigations and considered such other information as we deemed necessary or appropriate for purposes of our Opinion; and
- (xiii) taken into account our assessment of general economic, market and financial conditions and our experience in other transactions, as well as our experience in securities valuations and our knowledge of the Company's and BTUI's industries generally.

In rendering our Opinion, we have, with your consent, relied upon and assumed, without independent verification, the accuracy and completeness of all of the financial and other information that was made available, supplied or otherwise communicated to Stifel by or on behalf of the Company or BTUI, or that was otherwise reviewed by Stifel, including, without limitation, publicly available information, and have not assumed any responsibility for independently verifying any of such information. Stifel has relied on such information being complete and correct in all material respects and has further relied upon the assurances of the management of the Company or BTUI, as applicable, that it is unaware of any facts that would make such information incomplete or misleading. With respect to the financial forecasts supplied to us by the Company and BTUI (including, without limitation, the financial forecasts regarding BTUI supplied to us by the Company and potential cost savings and operating synergies which may be realized by the Company), we have assumed, at the direction of the Company, that they were reasonably prepared on the basis reflecting the best currently available estimates and judgments of the management of the Company or BTUI, as applicable, as to the future operating and financial performance of the Company or BTUI, as applicable, and that they provided a reasonable basis upon which we could form our Opinion. Such forecasts and projections were not prepared with the expectation of public disclosure. At your direction, in our analysis of the future performance of BTUI, we have utilized and relied upon the financial forecasts for BTUI prepared by the Company's management. All such projected financial information is based on numerous variables and assumptions that are inherently uncertain, including, without limitation, factors related to general economic and competitive conditions. Accordingly, actual results could vary significantly from those set forth in such projected financial information. Stifel has relied on this projected information without independent verification or analyses and does not in any respect assume any responsibility for the accuracy or completeness thereof.

We have also assumed that there were no material changes in the assets, liabilities, financial condition, results of operations, business or prospects of either the Company or BTUI since the date of the last financial statements of each company made available to us. We did not make or obtain any independent evaluation, appraisal or physical inspection of either the Company's or BTUI's assets or liabilities, nor have we been furnished with any such evaluation or appraisal. Estimates of values of companies and assets do not purport to be appraisals or necessarily reflect the prices at which companies or assets may actually be sold. Because such estimates are inherently subject to uncertainty, Stifel assumes no responsibility for their accuracy.

We have assumed, with your consent, that there are no factors that would delay or subject to any adverse conditions any necessary regulatory or governmental approval and that all conditions to the Merger will be satisfied and not waived. In addition,

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we have assumed that the definitive Merger Agreement will not differ materially from the draft we reviewed. We have also assumed that the Merger will be consummated substantially on the terms and conditions described in the Merger Agreement, without any waiver of material terms or conditions by any party thereto and without any adjustment to the Exchange Ratio (beyond the adjustment provisions set forth in the Merger Agreement), and that obtaining any necessary regulatory approvals or satisfying any other conditions for consummation of the Merger will not have an adverse effect on the Company, BTUI or the Merger. We have assumed that the Merger will be consummated in a manner that complies with the applicable provisions of the Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, and all other applicable federal and state statutes, rules and regulations. We have further assumed that the Company has relied upon the advice of its counsel, independent accountants and other advisors (other than Stifel) as to all legal, financial reporting, tax, accounting and regulatory matters with respect to the Company, the Merger and the Merger Agreement.

Our Opinion is limited to whether the Exchange Ratio is fair to the stockholders of the Company, from a financial point of view, and does not address any other terms, aspects or implications of the Merger, including, without limitation, the form or structure of the Merger, any consequences of the Merger on the Company, its stockholders, creditors or otherwise, or any terms, aspects or implications of any voting, support, stockholder or other agreements, arrangements or understandings contemplated or entered into in connection with the Merger or otherwise. Our Opinion also does not consider, address or include: (i) any other strategic alternatives currently (or which have been or may be) contemplated by the Board or the Company; (ii) the legal, tax or accounting consequences of the Merger on the Company or the holders of Company Common Stock, including, without limitation, whether or not the Merger will qualify as a tax-free reorganization pursuant to Section 368 of the Internal Revenue Code of 1986, as amended; (iii) the fairness of the amount or nature of any compensation to any of the Company's or BTUI's officers, directors or employees, or class of such persons, relative to the compensation to the holders of Company Common Stock or BTUI Common Stock; (iv) the effect of the Merger on, or the fairness of the consideration to be paid to, holders of any class of securities of the Company or BTUI other than the holders of Company Common Stock, or any class of securities of any other party to any transaction contemplated by the Merger Agreement; (v) any advice or opinions provided by any other advisor to the Company or BTUI; or (vi) the treatment of, or effect of the Merger on, any securities of the Company other than the Company Common Stock (or the holders of any such securities). Furthermore, we are not expressing any opinion herein as to the prices, trading range or volume at which the Company's securities (including the Company Common Stock) will trade following public announcement or consummation of the Merger (including, without limitation, the affect that any increase or decrease in the price of the Company Common Stock may have or the conclusions reached in this Opinion).

Our Opinion is necessarily based on economic, market, financial and other conditions as they exist on, and on the information made available to us by or on behalf of the Company and BTUI or their respective advisors, or information otherwise reviewed by Stifel, as of, the date of this Opinion. It is understood that subsequent developments may affect the conclusion reached in this Opinion and that Stifel does not have any obligation to update, revise or reaffirm this Opinion. Our Opinion is for the information of, and directed to, the Board (in its capacity as such) for its information and assistance in connection with its consideration of the financial terms of the Merger. Our Opinion does not constitute a recommendation to the Board as to how the Board should vote on the Merger or to any stockholder of the Company as to how any such stockholder should vote at any stockholders' meeting at which the Merger is considered, or whether or not any stockholder of the Company should enter into a voting, shareholders' or affiliates' agreement with respect to the Merger, or exercise any dissenters' or appraisal rights that may be available to such stockholder. In addition, the Opinion does not compare the relative merits of the Merger with any other alternative transactions or business strategies which may have been available to the Company and does not address the underlying business decision of the Board or the Company to proceed with or effect the Merger.

We have not considered any potential legislative or regulatory changes currently being considered or recently enacted by the United States Congress, the Securities and Exchange Commission (the "SEC"), or any other regulatory bodies, or any changes in accounting methods or generally accepted accounting principles that may be adopted by the SEC or the Financial Accounting Standards Board. Our Opinion is not a solvency opinion and does not in any way address the solvency or financial condition of the Company, BTUI or any other person.

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Stifel, as part of its investment banking services, is regularly engaged in the independent valuation of businesses and securities in connection with mergers, acquisitions, underwritings, sales and distributions of listed and unlisted securities, private placements and valuations for estate, corporate and other purposes. We have acted as financial advisor to the Company in connection with the Merger and will receive a fee for our services, a substantial portion of which is contingent upon the completion of the Merger (the "Advisory Fee"). We have also acted as financial advisor to the Board and will receive a fee upon the delivery of this Opinion that is not contingent upon consummation of the Merger (the "Opinion Fee"), provided that such Opinion Fee is creditable against any Advisory Fee. We will not receive any other significant payment or compensation contingent upon the successful consummation of the Merger. In addition, the Company has agreed to indemnify us for certain liabilities arising out of our engagement. There are no material relationships that existed during the two years prior to the date of this Opinion or that are mutually understood to be contemplated in which any compensation was received or is intended to be received as a result of the relationship between Stifel and any party to the Merger. Stifel may seek to provide investment banking services to the Company or its affiliates in the future, for which we would seek customary compensation. In the ordinary course of business, Stifel and our clients may transact in the equity securities of the Company or BTUI and may at any time hold a long or short position in such securities.

Stifel's Fairness Opinion Committee has approved the issuance of this Opinion. Our Opinion may not be published or otherwise used or referred to, nor shall any public reference to Stifel be made, without our prior written consent, except in accordance with the terms and conditions of Stifel's engagement letter agreement with the Company.

Based upon and subject to the foregoing, we are of the opinion that, as of the date hereof, the Exchange Ratio is fair to the holders of the Company Common Stock from a financial point of view.

Very truly yours,

/s/ STIFEL, NICOLAUS & COMPANY, INCORPORATED

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Needham & Company, LLC 445 Park Avenue, New York, NY 10022-4406 (212) 371-8300

October 21, 2014

Board of Directors
BTU International, Inc.
23 Esquire Road
Billerica, MA 01862

Gentlemen:

We understand that Amtech Systems, Inc. ("Parent"), BTU International, Inc. (the "Company"), and a wholly-owned subsidiary of Parent ("Merger Sub") propose to enter into an Agreement and Plan of Merger (the "Merger Agreement") whereby, upon the terms and subject to the conditions set forth in the Merger Agreement, Merger Sub will be merged with and into the Company and the Company will continue as a wholly-owned subsidiary of Parent (the "Merger"). The terms and conditions of the Merger will be set forth more fully in the Merger Agreement.

Pursuant to the proposed Merger Agreement, we understand that, at the Effective Time (as defined in the Merger Agreement), each issued and outstanding share of common stock, par value \$0.01 per share, of the Company ("Company Common Stock") (other than shares owned by Parent, Merger Sub, the Company or any of their respective subsidiaries) will be converted into the right to receive a number of shares of common stock, par value \$.01 per share, of Parent ("Parent Common Stock") equal to the Exchange Ratio, which is defined in the Merger Agreement as 0.3291.

You have asked us to advise you as to the fairness, from a financial point of view, to the holders of Company Common Stock (other than Parent or the Company or any of their respective subsidiaries) of the Exchange Ratio.

For purposes of this opinion we have, among other things: (i) reviewed a draft of the Merger Agreement dated October 20, 2014; (ii) reviewed certain publicly available information concerning Parent and the Company and certain other relevant financial and operating data of Parent and the Company furnished to us by Parent and the Company; (iii) reviewed the historical stock prices and trading volumes of Parent Common Stock and Company Common Stock; (iv) held discussions with members of management of Parent and the Company concerning the current operations of and future business prospects for Parent and the Company and joint prospects for the combined companies, including the potential cost savings and other synergies that may be achieved by the combined companies; (v) reviewed certain financial forecasts with respect to Parent and the Company prepared by the respective managements of Parent and the Company and held discussions with members of such managements concerning those forecasts; (vi) compared certain publicly available financial data of companies whose securities are traded in the public markets and that we deemed generally relevant to similar data for the Company; (vii) reviewed the financial terms of certain business combinations that we deemed generally relevant; and (viii) reviewed such other financial studies and analyses and considered such other matters as we have deemed appropriate.

In connection with our review and in arriving at our opinion, we have assumed and relied on the accuracy and completeness of all of the financial, accounting, legal, tax and other information discussed with or reviewed by us for purposes of this opinion

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101 Mission Street, San Francisco, CA 94105 (415) 262-4860
Chicago Office: 180 North LaSalle Street, Suite 3700, Chicago, IL 60601 (312) 981-0412

and have neither attempted to verify independently nor assumed responsibility for verifying any of such information. We have assumed the accuracy of the representations and warranties contained in the Merger Agreement and all agreements related thereto. In addition, we have assumed, with your consent, that the Merger will qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986 and will be consummated upon the terms and subject to the conditions set forth in the draft Merger Agreement dated October 20, 2014 without waiver, modification or amendment of any material term, condition or agreement thereof and that, in the course of obtaining the necessary regulatory or third party approvals, consents and releases for the Merger, no delay, limitation, restriction or condition will be imposed that would have an adverse effect on Parent, the Company or the contemplated benefits of the Merger. With respect to the financial forecasts for Parent and the Company provided to us by the respective managements of Parent and the Company, we have assumed, with your consent and based upon discussions with such managements, that such forecasts have been reasonably prepared on bases reflecting the best currently available estimates and judgments of such managements, at the time of preparation, of the future operating and financial performance of Parent and the Company and the combined companies, and we have relied, without independent verification, upon the estimates of such managements of the potential cost savings and other synergies, including the amount and timing thereof, that may be achieved as a result of the proposed Merger. We express no opinion with respect to any of such forecasts (including such cost savings and other synergies) or the assumptions on which they were based.

We have not assumed any responsibility for or made or obtained any independent evaluation, appraisal or physical inspection of the assets or liabilities of the Company, Parent or any of their respective subsidiaries nor have we evaluated the solvency or fair value of the Company, Parent or any of their respective subsidiaries under any state or federal laws relating to bankruptcy, insolvency or similar matters. Further, our opinion is based on economic, monetary and market conditions as they exist and can be evaluated as of the date hereof and we assume no responsibility to update or revise our opinion based upon circumstances and events occurring after the date hereof. Our opinion as expressed herein is limited to the fairness, from a financial point of view, to the holders of Company Common Stock (other than Parent or the Company or any of their respective subsidiaries) of the Exchange Ratio pursuant to the Merger Agreement and we express no opinion as to the fairness of the Merger to, or any consideration received in connection therewith by, the holders of any other class of securities, creditors or other constituencies of the Company, or as to the Company's underlying business decision to engage in the Merger or the relative merits of the Merger as compared to other business strategies that might be available to the Company. In addition, we express no opinion with respect to the amount or nature or any other aspect of any compensation payable to or to be received by any officers, directors or employees of any party to the Merger, or any class of such persons, relative to the Exchange Ratio pursuant to the Merger Agreement or with respect to the fairness of any such compensation. Our opinion does not constitute a recommendation to any stockholder of the Company as to how such stockholder should vote with respect to the Merger.

We are not expressing any opinion as to the value of Parent Common Stock when issued pursuant to the Merger or the prices at which Parent Common Stock or Company Common Stock will actually trade at any time.

We have been engaged by the Company as financial advisor in connection with the Merger and to render this opinion and will receive fees for our services, a portion of which is payable upon delivery of this opinion and a substantial portion of which is contingent on the consummation of the Merger. In addition, the Company has agreed to indemnify us for certain liabilities arising out of our role as financial advisor and out of the rendering of this opinion and to reimburse us for certain of our out-of-pocket expenses. We have not in the past two years provided investment banking or financial advisory services to the Company unrelated to the proposed Merger for which we have received compensation and have not in the past two years provided investment banking or financial advisory services to Parent for which we have received compensation. We may in the future provide investment banking and financial advisory services to the Company, Parent and their respective affiliates unrelated to the proposed Merger, for which services we would expect to receive compensation. In the ordinary course of our business, we may

actively trade the equity securities of the Company and Parent for our own account or for the accounts of customers or affiliates and, accordingly, may at any time hold a long or short position in such securities.

This letter and the opinion expressed herein are provided at the request and for the information of the Board of Directors of the Company and may not be quoted or referred to or used for any purpose without our prior written consent, except that this letter may be disclosed in connection with any registration statement or proxy statement used in connection with the Merger provided that this letter is quoted in full in such registration statement or proxy statement. This opinion has been approved by a fairness committee of Needham & Company, LLC.

Based upon and subject to the foregoing, it is our opinion that, as of the date hereof, the Exchange Ratio pursuant to the Merger Agreement is fair, from a financial point of view, to the holders of Company Common Stock (other than Parent or the Company or any of their respective subsidiaries).

Very truly yours,

/s/ NEEDHAM & COMPANY, LLC

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Indemnification of Directors and Officers

Sections 10-851 and 10-856 of the Arizona business act permits, under certain circumstances, the indemnification of any director or officer made a party to a proceeding. Amtech may indemnify under these sections (1) against liability incurred in a proceeding if the individual is or was a director and if the individual's conduct was in good faith and the individual reasonably believed the conduct was in Amtech's best interests or (2) the director engaged in conduct for which broader indemnification has been made permissible or obligatory under Amtech's articles or Amtech's bylaws. Under these sections, a corporation may not, however, indemnify a director (1) in connection with a proceeding where the director was a adjudged liable to the Amtech and (2) in connection with a proceeding charging improper financial benefit to the director, in which the director was adjudged liable on the basis that financial benefit was improperly received by the director. Further, pursuant to Section 10-852 of the Arizona business act, a corporation must indemnify a director who was the prevailing party in the defense of any proceeding to which the director was a party because the director is or was a director of the corporation against reasonable expenses incurred by the director in connection with the proceeding. Further, a corporation shall indemnify an outside director against liability, and shall pay expenses prior to a final disposition if the director furnishes the corporation a written affirmation that the director has acted in good faith and reasonably believed in the best interests of the corporation.

Amtech's articles also provide for certain indemnification for directors. Under Amtech's articles, Amtech shall indemnify any and all of its existing and former directors, officers, employees, and agents against all expenses incurred by them and each of them, including, but not limited to legal fees, judgments, penalties, and amounts paid in settlement or compromise, which may arise or be incurred, rendered, or levied in any legal action brought or threatened against any of them for or on account of any action or omission alleged to have been committed while acting within the scope of employment as director, officer, employee or agent of Amtech, whether or not any action is or has been filed against them and whether or not any settlement or compromise is approved by a court, indemnification shall be made by the corporation whether the legal action brought or threatened is by or in the right of Amtech or by any other person.

Whenever any existing or former director, officer, employee, or agent shall report to the president of the Amtech or the chairman of the board of directors that he or she has incurred or may incur expenses, including, but not limited to, legal fees, judgments, penalties, and amounts paid in settlement or compromise in a legal action brought or threatened against him or her for or on account of any action or omission alleged to have been committed by him or her while acting within the scope of his or her employment as a director, officer, employee or agent of the corporation, the board of directors shall, at its next regular or at a special meeting held within a reasonable time thereafter, determine in good faith, whether in regard to the matter involved in the action or contemplated action, such person acted, failed to act, or refused to act willfully or with gross negligence or with fraudulent or criminal intent. If the board of directors determines, in good faith, that such person did not act, fail to act, or refuse to act willfully or with gross negligence or with fraudulent or criminal intent in regard to the matter involved in the action or contemplated action, such person acted, failed to act, or refused to act willfully or with gross negligence or with fraudulent or criminal intent, indemnification shall be mandatory and shall be automatically extended as specified herein; provided, that Amtech shall have the right to refuse indemnification in any instance in which the person to whom indemnification would otherwise have been applicable shall have unreasonably refused to permit Amtech, at its own expense and through counsel of its own choosing, to defend him or her in the action.

The foregoing is only a general summary of certain aspects of Arizona law and Amtech's amended and restated articles of incorporation dealing with indemnification of directors and officers, and does not purport to be complete. It is qualified in its entirety by reference to the detailed provisions of those Sections of the Arizona Business Corporation Act referenced above and the amended and restated certificate of incorporation of Amtech.

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Exhibits and Financial Statement Schedules

Exhibit No.	Description
2.1	Agreement and Plan of Merger, dated October 21, 2014, by and among Amtech Systems, Inc., BTU Merger Sub, Inc., and BTU International, Inc. (attached as Annex A to the joint proxy statement/prospectus contained in this Registration Statement)
3.1	Amended and Restated Articles of Incorporation, as amended through February 6, 2012 (incorporated herein by reference to Amtech's Quarterly Report on Form 10-Q for the quarterly period ended December 31, 2011)
3.2	Certificate of Designations, Preferences and Privileges of the Series A Convertible Preferred Stock (Par Value \$.01 Per Share) of Amtech Systems, Inc., dated as of April 21, 2005 (incorporated by reference to Amtech's Current Report on Form 8-K filed with the Securities and Exchange Commission on April 28, 2005)
3.3	Amended and Restated Bylaws of Amtech Systems, Inc., dated as of January 4, 2008 (incorporated by reference to Amtech's Current Report on Form 8-K filed with the Securities and Exchange Commission on January 8, 2008)
5.1	Opinion of Squire Patton Boggs (US) LLP regarding the validity of the securities to be issued
8.1	Opinion of Squire Patton Boggs (US) LLP regarding certain tax matters*
8.2	Opinion of Pierce Atwood LLP regarding certain tax matters*
23.1	Consent of Squire Patton Boggs (US) LLP (included in Exhibit 5.1)
23.2	Consent of Squire Patton Boggs (US) LLP (to be included in Exhibit 8.1)
23.3	Consent of Pierce Atwood LLP (to be included in Exhibit 8.2)
23.4	Consent of Mayer Hoffman McCann P.C.
23.5	Consent of Stifel, Nicolaus, & Company, Incorporated
23.6	Consent of Needham & Company, LLC
23.7	Consent of KPMG LLP
24.1	Power of Attorney
99.1	Form of proxy of Amtech
99.2	Form of proxy of BTU
99.3	Voting and Support Agreement, dated October 21, 2014, by and among Amtech Systems, Inc. and the stockholders of BTU International, Inc. (incorporated by reference to Amtech's Current Report on Form 8-K filed with the Securities and Exchange Commission on October 23, 2014)

* To be filed by amendment

Undertakings

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement: (i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933; (ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement (notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to

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Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement); and (iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(5) That prior to any public reoffering of the securities registered hereunder through use of a prospectus which is a part of this registration statement, by any person or party who is deemed to be an underwriter within the meaning of Rule 145(c), the registrant undertakes that such reoffering prospectus will contain the information called for by the applicable registration form with respect to reofferings by persons who may be deemed underwriters, in addition to the information called for by the other items of the applicable form.

(6) That every prospectus (i) that is filed pursuant to paragraph (5) above, or (ii) that purports to meet the requirements of Section 10(a)(3) of the Securities Act and is used in connection with an offering of securities subject to Rule 415, will be filed as a part of an amendment to the registration statement and will not be used until such amendment has become effective, and that for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(7) To respond to requests for information that is incorporated by reference into the prospectus pursuant to Items 4, 10(b), 11 or 13 of this Form, within one business day of receipt of such request, and to send the incorporated documents by first class mail or other equally prompt means. This includes information contained in documents filed subsequent to the effective date of the registration statement through the date of responding to the request.

(8) To supply by means of a post-effective amendment all information concerning a transaction, and the company being acquired involved therein, that was not the subject of and included in this registration statement when it became effective.

(9) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer, or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Tempe, State of Arizona, on November 24, 2014.

AMTECH SYSTEMS, INC.

By: /s/ Bradley C. Anderson
Name: Bradley C. Anderson
Title: *Executive Vice President, Chief Financial Officer*

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities indicated on November 24, 2014.

Signature	Title
* _____ Fokko Pentinga	President, Chief Executive Officer and Director (Principal Executive Officer)
* _____ Jong S. Whang	Executive Chairman
/s/ Bradley C. Anderson _____ Bradley C. Anderson	Executive Vice President, Chief Financial Officer (Principal Financial Officer)
* _____ Alfred W. Giese	Director
* _____ Robert F. King	Director
* _____ Michael Garnreiter	Director
* _____ Egbert Jan Gert Goudena	Director

*By: /s/ Bradley C. Anderson
Bradley C. Anderson
Attorney-in-Fact
November 24, 2014

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* To be filed by amendment



Squire Patton Boggs (US) LLP
1 E. Washington St., Suite 2700
Phoenix, Arizona 85004

O +1 602 528 4000
F +1 602 253 8129
squirepattonboggs.com

November 24, 2014

Amtech Systems, Inc.
131 South Clark Drive
Tempe, Arizona 85281

Re: Registration Statement on Form S-4

Ladies and Gentlemen,

We have acted as counsel to Amtech Systems, Inc., an Arizona corporation (the "Company"), in connection with the registration statement on Form S-4, filed by the Company (the "Registration Statement") with the United States Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Act"), registering 3,647,301 shares of the Company's common stock, \$0.01 par value per share (the "Shares"), representing the maximum number of shares which may be issuable in connection with the proposed merger (the "Merger") of BTU Merger Sub, Inc., a wholly owned subsidiary of the Company ("Merger Sub") with and into BTU International, Inc. ("BTU"), with BTU surviving as a wholly owned subsidiary of the Company, pursuant to that certain Agreement and Plan of Merger, dated as of October 21, 2014, by and among the Company, Merger Sub, and BTU (the "Merger Agreement").

This opinion is being delivered in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Act.

In connection with this opinion, we have examined and relied upon, among other things: (i) the Merger Agreement; (ii) the Articles of Incorporation; (iii) the By-laws; and (iv) originals or copies, certified or otherwise identified to our satisfaction, of such records of the Company and Merger Sub and such agreements, documents, certificates and receipts of public officials, certificates of officers or other representatives of the Company, Merger Sub, and others, and such other documents, certificates and records, as we have deemed necessary or appropriate as a basis for the opinion set forth below.

In our examination, we have assumed the legal capacity of all natural persons, the genuineness of all signatures, including endorsements, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as facsimile, electronic, certified, conformed or photostatic copies, and the authenticity of the originals of such copies.

44 Offices in 21 Countries

Squire Patton Boggs (US) LLP is part of the international legal practice Squire Patton Boggs, which operates worldwide through a number of separate legal entities.

Please visit squirepattonboggs.com for more information.

As to any facts material to the opinion expressed herein which were not independently established or verified, we have relied upon oral or written statements and representations of officers and other representatives of the Company and others. We have also made such investigations of law as we have deemed appropriate.

In rendering this opinion, we have also assumed that prior to the issuance of any of the Shares: (i) the Registration Statement, as it may be amended, shall have become effective under the Act; (ii) the shareholders of Amtech shall have approved and adopted the Merger Agreement and the Merger, including, without limitation, the issuance of the Shares pursuant to the terms of the Merger Agreement; (iii) the shareholders of BTU shall have approved and adopted the Merger Agreement and the Merger; and (iv) the transactions contemplated by the Merger Agreement shall have been consummated in accordance with the Merger Agreement.

On the basis of the foregoing, we are of the opinion that the Shares, when issued and delivered in accordance with the terms and conditions of the Merger Agreement, will be validly issued, fully paid, and non-assessable.

Our conclusions are limited to the matters expressly set forth as our "opinion" herein, and no opinion is implied or is to be inferred beyond the matters expressly so stated. Such opinion is given as of the date hereof, and we expressly decline any undertaking to revise or update this opinion subsequent to the date hereof or to advise you of any matter arising subsequent to the date hereof that would cause us to modify, in whole or in part, this opinion.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement. We also consent to the reference to our firm under the caption "Legal Matters" in the Registration Statement. In giving this consent, we do not thereby admit that we are included in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission promulgated thereunder.

Sincerely,

/s/ Squire Patton Boggs (US) LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the reference to our firm under the caption "Experts" in this Registration Statement on Form S-4 pertaining to Amtech Systems, Inc.'s proposed merger with BTU International, Inc. and to the incorporation by reference therein of our reports dated November 20, 2014, relating to the consolidated financial statements and effectiveness of internal controls over financial reporting of Amtech Systems, Inc. and Subsidiaries for the year ended September 30, 2014, which appear in Amtech Systems, Inc. and Subsidiaries' Annual Report on Form 10-K for the year ended September 30, 2014 filed with the Securities and Exchange Commission.

/s/ MAYER HOFFMAN MCCANN P.C.

Phoenix, Arizona
November 24, 2014

STIFEL

November 24, 2014

Board of Directors
Amtech Systems, Inc.
131 South Clark Drive
Tempe, Arizona 85281

Members of the Board:

We hereby consent to the inclusion of our opinion letter, dated October 20, 2014, to the Board of Directors of Amtech Systems, Inc. (“Amtech”) as Annex B to, and to any reference thereto, in the joint proxy statement/prospectus relating to the proposed merger involving Amtech and BTU International, Inc., which joint proxy statement/prospectus forms a part of Amtech’s Registration Statement on Form S-4 to which this consent is filed as an exhibit. In giving the foregoing consent, we do not admit (1) that we come within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended (the “Securities Act”), or the rules and regulations of the Securities and Exchange Commission (the “Commission”) promulgated thereunder, or (2) that we are experts with respect to any part of the Registration Statement within the meaning of the term “experts” as used in the Securities Act and the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ STIFEL, NICOLAUS & COMPANY, INCORPORATED

STIFEL, NICOLAUS & COMPANY, INCORPORATED
787 7th AVENUE, 11TH FLOOR I NEW YORK, NEW YORK 10019 (212) 847-6680 I WWW.STIFEL.COM

CONSENT OF NEEDHAM & COMPANY, LLC

We hereby consent to the inclusion in the Registration Statement of Amtech Systems, Inc. on Form S-4 and in the joint proxy statement/prospectus of Amtech Systems, Inc. and BTU International, Inc., which is part of the Registration Statement, of our opinion dated October 21, 2014 to the Board of Directors of BTU International, Inc. attached as Annex C to such joint proxy statement/prospectus and to the references to our opinion and our name under the captions “Summary—Opinion of BTU’s Financial Advisor,” “The Merger—Background of the Merger,” “The Merger—BTU’s Reasons for the Merger; Recommendation of the BTU Board of Directors,” and “The Merger—Opinion of Needham & Company.” In giving such consent, we do not admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act of 1933 or the rules and regulations of the Securities and Exchange Commission promulgated thereunder, nor do we thereby admit that we are experts with respect to any part of such Registration Statement within the meaning of the term “experts” as used in the Securities Act of 1933 or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

/s/ NEEDHAM & COMPANY, LLC

November 24, 2014

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors
BTU International, Inc.:

We consent to the use of our report dated March 13, 2014, with respect to the consolidated balance sheets of BTU International, Inc., and subsidiaries as of December 31, 2013 and 2012, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2013, included herein and to the reference to our firm under the heading "Experts" in the prospectus.

/s/ KPMG LLP

Boston, Massachusetts
November 24, 2014

AMTECH SYSTEMS, INC.

REGISTRATION STATEMENT ON FORM S-4

POWER OF ATTORNEY

Each of the undersigned directors and/or officers of Amtech Systems, Inc., an Arizona corporation (the "Company"), hereby constitutes and appoints Bradley C. Anderson with full power of substitution and resubstitution, as attorneys-in-fact or attorney-in-fact of the undersigned, for him or her and in his or her name, place and stead, to sign and file with the Securities and Exchange Commission under the Securities Act of 1933 (the "Securities Act") one or more registration statements on Form S-4 (the "Registration Statement") relating to the issuance of certain of the Company's common stock in connection with the Agreement and Plan of Merger with BTU International, Inc., with any and all amendments, supplements and exhibits thereto, including post-effective amendments or supplements or any additional registration statement filed pursuant to the Securities Act, or any other document with any state securities commission or other regulatory authority with respect to the securities covered by such Registration Statement, with full power and authority to do and perform any and all acts and things whatsoever required and necessary to be done, hereby ratifying and approving the acts of said attorneys and each of them and any substitute or substitutes.

This Power of Attorney may be executed in multiple counterparts, each of which shall be deemed an original with respect to the person executing it.

IN WITNESS WHEREOF, the undersigned have hereunto set their hands as of the 17th day of November, 2014.

/s/ Fokko Pentinga

Fokko Pentinga
President, Chief Executive Officer and Director
(Principal Executive Officer)

/s/ Jong S. Whang

Jong S. Whang
Executive Chairman

/s/ Alfred W. Giese

Alfred W. Giese
Director

/s/ Robert F. King

Robert F. King
Director

/s/ Michael Garnreiter

Michael Garnreiter
Director

/s/ Egbert Jan Gert Goudena

Egbert Jan Gert Goudena
Director

Preliminary Proxy Materials –
Subject to Completion

Amtech Systems, Inc.

IMPORTANT MEETING INFORMATION

Electronic Voting Instructions

You can vote by Internet or telephone!

Available 24 hours a day, 7 days a week!

Instead of mailing your proxy, you may choose one of the two voting methods outlined below to vote your proxy.

VALIDATION DETAILS ARE LOCATED BELOW IN THE TITLE BAR.

Proxies submitted by the Internet or telephone must be received by 1:00 a.m., Eastern Daylight Time, on [].

Vote by Internet

- Log on to the Internet and go to www.investorvote.com/
- Follow the steps outlined on the secured website.

Vote by telephone

- Call toll free 1-800-652-VOTE (8683) within the USA, US territories & Canada any time on a touch tone telephone. There is **NO CHARGE** to you for the call.
- Follow the instructions provided by the recorded message.

Using a **black ink** pen, mark your votes with an **X** as shown in this example. Please do not write outside the designated areas.



Special Meeting Proxy Card

IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE.

A Proposals — The Amtech board of directors recommends that you vote **“FOR”** the Amtech merger proposal and **“FOR”** the Amtech adjournment proposal (if necessary or appropriate).

1. To adopt the Agreement and Plan of Merger, dated as of October 21, 2014, by and between Amtech Systems, Inc., BTU Merger Sub, Inc. and BTU International, Inc., pursuant to which Merger Sub will merge with and into BTU, as more fully described in the attached joint proxy statement/prospectus

For	Against	Abstain
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. To adjourn the Amtech special meeting, if necessary or appropriate, to solicit additional proxies in favor of the Amtech merger proposal

For	Against	Abstain
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For	Against	Abstain
------------	----------------	----------------

B Non-Voting Items

Change of Address — Please print new address below.

C Authorized Signatures — **This section must be completed for your vote to be counted.** — **Date and Sign Below**

Please sign exactly as name(s) appears hereon. Joint owners should each sign. When signing as attorney, executor, administrator, corporate officer, trustee, guardian, or custodian, please give full title.

Date (mm/dd/yyyy) — Please print date below.

/ /

Signature 1 — Please keep signature within the box.

Signature 2 — Please keep signature within the box.

01MGDB

IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE.

Proxy — Amtech Systems, Inc.

SPECIAL MEETING

[]

The undersigned hereby constitutes and appoints Jong S. Whang and Bradley C. Anderson, or either of them with full power of substitution to each, proxies to vote and act at the Special Meeting of Stockholders on [] at [] a.m., and at any postponements or adjournments thereof, upon and with respect to the number of shares of Common Stock of the Company as to which the undersigned may be entitled to vote or act. The undersigned instructs such proxies, or their substitutes, to vote in such manner as they may determine on any matters which may come before the meeting, all as indicated in the accompanying Notice of Meeting and Proxy Statement, receipt of which is acknowledged, and to vote on the following as specified by the undersigned. All proxies heretofore given by the undersigned in respect of said meeting are hereby revoked.

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS. Unless otherwise specified in the boxes provided on the reverse side hereof, the proxy will be voted "FOR" Proposals 1 and 2 and in the discretion of the named proxies as to any other matter that may come before this meeting or any postponement or adjournment thereof.

CONTINUED AND TO BE SIGNED ON REVERSE SIDE

SEE REVERSE SIDE

**Preliminary Proxy Materials –
Subject to Completion**

BTU International, Inc.

IMPORTANT MEETING INFORMATION

Electronic Voting Instructions

You can vote by Internet or telephone!

Available 24 hours a day, 7 days a week!

Instead of mailing your proxy, you may choose one of the two voting methods outlined below to vote your proxy.

VALIDATION DETAILS ARE LOCATED BELOW IN THE TITLE BAR.

Proxies submitted by the Internet or telephone must be received by 1:00 a.m., Eastern Daylight Time, on [].

Vote by Internet

- Log on to the Internet and go to www.investorvote.com/BTUI
- Follow the steps outlined on the secured website.

Vote by telephone

- Call toll free 1-800-652-VOTE (8683) within the USA, US territories & Canada any time on a touch tone telephone. There is **NO CHARGE** to you for the call.
- Follow the instructions provided by the recorded message.

Using a **black ink** pen, mark your votes with an **X** as shown in this example. Please do not write outside the designated areas.



Special Meeting Proxy Card

IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE.

A **Proposals** — The BTU board of directors recommends that you vote **‘FOR’** the BTU merger proposal, **‘FOR’** the BTU adjournment proposal (if necessary or appropriate) and **‘FOR’** the BTU merger-related compensation proposal.

1. To adopt the Agreement and Plan of Merger, dated as of October 21, 2014, by and between Amtech Systems, Inc., BTU Merger Sub, Inc. and BTU International, Inc., pursuant to which Merger Sub will merge with and into BTU, as more fully described in the attached joint proxy statement/prospectus

For **Against** **Abstain**

2. To adjourn the BTU special meeting, if necessary or appropriate, to solicit additional proxies in favor of the BTU merger proposal

For **Against** **Abstain**

3. To approve, on an advisory (non-binding) basis, the compensation that certain executive officers of BTU may receive in connection with the merger pursuant to existing agreements or arrangements with BTU

For Against Abstain

B Non-Voting Items

Change of Address — Please print new address below.

C Authorized Signatures — **This section must be completed for your vote to be counted.** — **Date and Sign Below**

Please sign exactly as name(s) appears hereon. Joint owners should each sign. When signing as attorney, executor, administrator, corporate officer, trustee, guardian, or custodian, please give full title.

Date (mm/dd/yyyy) — Please print date below.

/ /

Signature 1 — Please keep signature within the box.

Signature 2 — Please keep signature within the box.

01MGDB

IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE.

Proxy — BTU International, Inc.

SPECIAL MEETING

[]

The undersigned hereby constitutes and appoints Paul J. van der Wansem and Peter J. Tallian, or either of them with full power of substitution to each, proxies to vote and act at the Special Meeting of Stockholders on [] at [] a.m., and at any postponements or adjournments thereof, upon and with respect to the number of shares of Common Stock of the Company as to which the undersigned may be entitled to vote or act. The undersigned instructs such proxies, or their substitutes, to vote in such manner as they may determine on any matters which may come before the meeting, all as indicated in the accompanying Notice of Meeting and Proxy Statement, receipt of which is acknowledged, and to vote on the following as specified by the undersigned. All proxies heretofore given by the undersigned in respect of said meeting are hereby revoked.

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS. Unless otherwise specified in the boxes provided on the reverse side hereof, the proxy will be voted "FOR" Proposals 1, 2 and 3 and in the discretion of the named proxies as to any other matter that may come before this meeting or any postponement or adjournment thereof.

CONTINUED AND TO BE SIGNED ON REVERSE SIDE

SEE REVERSE SIDE