



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

Mail Stop 3030

February 2, 2016

Via E-mail

Bradley C. Anderson
Executive Vice President – Finance
and Chief Financial Officer
Amtech Systems, Inc.
131 South Clark Drive
Tempe, Arizona 85281

**Re: Amtech Systems, Inc.
Form 10-K for Fiscal Year Ended September 30, 2015
Filed November 19, 2015
File No. 000-11412**

Dear Mr. Anderson:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year Ended September 30, 2015

Sales and Marketing, page 11

1. Please revise to disclose the name and the relationship, if any, with Amtech Systems, of the customers who accounted for 15% and 11% of your net revenue in 2015 and the customers who accounted for 18% and 11% of your net revenue in 2014. Refer to Item 101(c)(1)(vii) of Regulation S-K.

Item 8. Financial Statements

Accounts Receivable and Allowance for Doubtful Accounts, page 51

2. In the column for 2015 you show an adjustment of \$1,090,000. In future filings please revise the table to describe your other additions and deductions and the accounts charged. Refer to Rule 12-09 of Regulation S-X.

Note 1. Summary of Significant Accounting Policies

Warranty, page 54

3. In future filings please disclose the methodology you used in determining your liability for product warranties and separately show in your tabular reconciliation for the warranty liability the aggregate reductions in that liability for payments made under the warranty, the aggregate changes in the liability for accruals related to product warranties issued during the reporting period, and the aggregate changes in the liability for accruals related to preexisting warranties (including adjustments related to changes in estimates) in accordance with ASC 460-10-50-8(b) and (c).

Note 10. Income Taxes, page 67

4. Please revise future filings to disclose the components of income (loss) before income tax expense (benefit) as either domestic or foreign in accordance with Rule 4-08(h)(1)(i) of Regulation S-X.

Note 14. Acquisitions, page 72

5. You disclose pro forma information for the fiscal year ended September 30, 2013 for your fiscal 2015 acquisition of BTU International. In future filings please only present comparative pro forma information for the period of the acquisition and the comparable annual reporting period. Refer to ASC 805-10-50-2(h)(3).

Note 15. Deconsolidation, page 73

6. Please explain how you considered ASC 810-10-40-5 and 40-4A related to the carrying amount of any noncontrolling interest in the former subsidiary (including any accumulated other comprehensive income attributable to the noncontrolling interest) at the date Kingstone was deconsolidated in determining the amount of the gain.
7. Please tell us the significant terms related to the agreements including the sale of exclusive sales and service rights in the solar ion implant equipment. Tell us whether the payment of \$5.6 million is in addition to the amount you will receive for the sale of part of your interest in Kingstone. Also tell us your consideration of filing the agreements related to the Kingstone transactions as exhibits under Item 601(b)(10) of Regulation S-K.
8. Please tell us your consideration of the requirements of Item 2.01 of Form 8-K related to the disposition of your controlling interest in Kingstone.

Item 9A. Controls and Procedures

Management's Report on Internal Control Over Financial Reporting, page 75

9. The audit report on page 44 refers to the framework Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Please confirm to us that management also used the COSO framework of 2013 in performing its assessment and revise the report in the requested amended Form 10-K to disclose the framework used, as required by Item 308(a)(2) of Regulation S-K.

Item 11. Executive Compensation, page 76

10. We note that you increased base salary and option awards compensation for your three named executive officers by significant amounts during fiscal year 2015. Please revise your disclosure in your Form 10-K to explain what factors you considered in the decision to make these material increases in compensation. Refer to Item 402(b)(2)(ix) of Regulation S-K. In this regard, we also note your disclosure on page 13 of your definitive proxy statement filed on January 25, 2016 that the compensation committee considers "the roles and performance." Please revise to discuss and analyze how individual performance contributes to actual base salary compensation for named executive officers. Refer to Item 402(b)(2) (vii) of Regulation S-K.
11. We note the disclosure on page 11 of your definitive proxy statement regarding your pay positioning compared to your peer group companies. Please revise your disclosure in your Form 10-K to discuss how each element of compensation relates to the data you analyzed from peer companies and include an analysis of where actual payments fell within the targeted parameters. If any of your named executive officers are compensated at levels that are materially different from targeted levels of compensation, please provide a discussion and analysis as to why. Refer to Item 402(b)(2)(xiv) of Regulation S-K.

Signatures, page 77

12. We note your Form 10-K has not been signed by the registrant. Please amend your Form 10-K to include both sets of signatures that are required by the "Signatures" section and by General Instruction D of Form 10-K.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Andri Boerman at (202) 551-3645 or Kate Tillan, Assistant Chief Accountant, at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. Please contact Brian Soares at (202) 551-3580 with any other questions.

Sincerely,

/s/ Kate Tillan for

Martin James
Senior Assistant Chief Accountant
Office of Electronics and Machinery