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

FORM 10-Q

(Mark One)

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended: March 31, 2024

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ________________ to ________________

Commission File Number: 0-11412

AMTECH SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Arizona (State or other jurisdiction of incorporation or organization)	86-0411215 (I.R.S. Employer Identification No.)
58 South River Drive Suite 370, Tempe, Arizona (Address of principal executive offices)	85288 (Zip Code)

Registrant's telephone number, including area code: 480-967-5146

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	ASYS	NASDAQ Global Select Market

Indicate by a check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). ☒ Yes ☐ No

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

Large Accelerated Filer	☐	Accelerated Filer	☒
Non-Accelerated Filer	☐	Smaller Reporting Company	☒
		Emerging Growth Company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

At May 3, 2024, there were outstanding 14,208,795 shares of Common Stock.

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
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Cautionary Note Regarding Forward-Looking Statements

Our discussion and analysis in this Quarterly Report on Form 10-Q ("Quarterly Report"), our Annual Report on Form 10-K for the fiscal year ended September 30, 2023 (the “2023 Form 10-K”), our other reports that we file with the Securities and Exchange Commission (“SEC”), our press releases and in public statements of our officers and corporate spokespersons contain “forward-looking” statements within the meaning of Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the Private Securities Litigation Reform Act of 1995. Forward-looking statements give our or our officers’ current expectations or forecasts of future events. You can also identify forward-looking statements by discussions of strategy, plans or intentions of management. We have tried, wherever possible, to identify such statements by using words such as “may,” “plan,” “anticipate,” “seek,” “will,” “expect,” “intend,” “estimate,” “believe,” “continue,” “predict,” “potential,” “project,” “should,” “would,” “could,” “likely,” “future,” “target,” “forecast,” “goal,” “observe,” and “strategy” or the negative thereof or variations thereon or similar terminology relating to the uncertainty of future events or outcomes. Any expectations based on these forward-looking statements are subject to risks and uncertainties and other important factors. Some factors that could cause actual results to differ materially from those anticipated include, among others, future economic conditions, including changes in the markets in which we operate; changes in demand for our services and products; our revenue and operating performance; difficulties in successfully executing our growth initiatives; difficulties in executing on our strategic initiatives with respect to our material and substrate business segment; the effects of competition in the markets in which we operate, including the adverse impact of competitive product announcements or new entrants into our markets and transfers of resources by competitors into our markets; the cyclical nature of the semiconductor industry; pricing and gross profit pressures; control of costs and expenses; risks associated with new technologies and the impact on our business; legislative, regulatory, and competitive developments in markets in which we operate; possible future claims, litigation or enforcement actions and the results of any such claim, litigation proceeding, or enforcement action; business interruptions, and any future pandemic on our business operations, financial results and financial position; risks of future cybersecurity incidents; adverse developments affecting financial institutions, including bank failures; failure to comply with financial and other covenants and other requirements under our credit agreement and forbearance agreement with UMB Bank, as well as the ability to extend, if necessary the forbearance period or obtain a waiver of the applicable defaults; and other circumstances and risks identified in this Quarterly Report or referenced from time to time in our filings with the SEC. The occurrence of the events described, and the achievement of expected results, depend on many events, some or all of which are not predictable or within our control. These and many other factors could affect Amtech’s future operating results and financial condition and could cause actual results to differ materially from expectations based on forward-looking statements made in this document or elsewhere by Amtech or on its behalf.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based on our or our officers’ current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to certain risks and uncertainties. In light of these risks and uncertainties, there can be no assurance that the forward-looking information contained in this Annual Report on Form 10-K will in fact transpire or prove to be accurate. You should not place undue reliance on these forward-looking statements, which speak only as of the date they were made.

The Company undertakes no obligation to update or publicly revise any forward-looking statement whether as a result of new information, future developments or otherwise after the date of this Annual Report on Form 10-K. All subsequent written or oral forward-looking statements attributable to the Company or persons acting on its behalf are expressly qualified in their entirety by this cautionary statement. You are advised, however, to consult any further disclosures we make on related subjects in our subsequently filed Form 10-Q and Form 8-K reports and our other filings with the SEC. Also note that we provide a cautionary discussion of risks, uncertainties and possibly inaccurate assumptions relevant to our business under “Item 1A. Risk Factors” of this Annual Report on Form 10-K. We note these factors for investors as permitted by the Private Securities Litigation Reform Act of 1995. You should understand it is not possible to predict or identify all such factors.

Unless the context indicates otherwise, the terms “Amtech,” the “Company,” “we,” “us” and “our” refer to Amtech Systems, Inc., an Arizona corporation, together with its subsidiaries.

PART I. FINANCIAL INFORMATION

Item 1. Condensed Consolidated Financial Statements

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Balance Sheets
(in thousands, except share data)

Assets		March 31, 2024 (Unaudited)		September 30, 2023
Current Assets				
Cash and cash equivalents	$	13,000	$	13,133
Accounts receivable (less allowance for credit losses of $115 and $146 at March 31, 2024 and September 30, 2023, respectively)		21,230		26,474
Inventories		31,308		34,845
Income taxes receivable		457		632
Other current assets		4,304		6,105
Total current assets		70,299		81,189
Property, Plant and Equipment - Net		9,476		9,695
Right-of-Use Assets - Net		9,784		11,217
Intangible Assets - Net		4,352		6,114
Goodwill		21,261		27,631
Deferred Income Taxes - Net		123		101
Other Assets		1,179		1,074
Total Assets	$	116,474	$	137,021
Liabilities and Shareholders' Equity				
Current Liabilities				
Accounts payable	$	6,741	$	10,815
Accrued compensation and related taxes		2,085		3,481
Accrued warranty expense		763		965
Other accrued liabilities		1,133		1,551
Current maturities of finance lease liabilities and long-term debt		4,243		2,265
Current portion of long-term operating lease liabilities		1,934		2,623
Contract liabilities		9,015		8,018
Total current liabilities		25,914		29,718
Finance Lease Liabilities and Long-Term Debt		65		8,422
Long-Term Operating Lease Liabilities		8,195		8,894
Income Taxes Payable		1,357		1,575
Other Long-Term Liabilities		52		47
Total Liabilities		35,583		48,656
Commitments and Contingencies (Note 10)				
Shareholders' Equity				
Preferred stock; 100,000,000 shares authorized; none issued		—		—
Common stock; $0.01 par value; 100,000,000 shares authorized; shares issued and outstanding: 14,208,795 and 14,185,977 at March 31, 2024 and September 30, 2023, respectively		142		142
Additional paid-in capital		127,658		126,963
Accumulated other comprehensive loss		(1,476)		(1,695)
Retained deficit		(45,433)		(37,045)
Total Shareholders' Equity		80,891		88,365
Total Liabilities and Shareholders' Equity	$	116,474	$	137,021

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Operations
(Unaudited)
(in thousands, except per share data)

	Three Months Ended March 31, 2024	Three Months Ended March 31, 2023	Six Months Ended March 31, 2024	Six Months Ended March 31, 2023
Revenues, net	$ 25,433	$ 33,310	$ 50,353	$ 54,868
Cost of sales	16,982	19,840	32,834	33,095
Intangible asset impairment	—	—	849	—
Gross profit	8,451	13,470	16,670	21,773
Selling, general and administrative	8,252	11,434	16,819	20,624
Research, development and engineering	921	1,517	2,509	2,910
Gain on sale of fixed assets	(2,197)	—	(2,197)	—
Goodwill impairment	—	—	6,370	—
Intangible asset impairment	—	—	430	—
Severance expense	112	—	310	400
Operating income (loss)	1,363	519	(7,571)	(2,161)
Interest income	14	49	33	339
Interest expense	(193)	(155)	(391)	(157)
Foreign currency loss	—	(168)	(187)	(515)
Other	9	13	9	4
Income (loss) before income tax provision	1,193	258	(8,107)	(2,490)
Income tax provision (benefit)	223	(2,946)	281	(2,950)
Net income (loss)	$ 970	$ 3,204	$ (8,388)	$ 460
Income (Loss) Per Share:				
Net income (loss) per basic share	$ 0.07	$ 0.23	$ (0.59)	$ 0.03
Net income (loss) per diluted share	$ 0.07	$ 0.23	$ (0.59)	$ 0.03
Weighted average shares outstanding:				
Basic	14,197	14,028	14,193	14,018
Diluted	14,209	14,157	14,193	14,142

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Comprehensive Income (Loss)
(Unaudited)
(in thousands)

	Three Months Ended March 31,		Six Months Ended March 31,	
	2024	2023	2024	2023
Net income (loss)	$ 970	$ 3,204	$ (8,388)	$ 460
Foreign currency translation adjustment	(50)	384	219	800
Comprehensive income (loss)	$ 920	$ 3,588	$ (8,169)	$ 1,260

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Shareholders' Equity
(Unaudited)
(in thousands)

	Common Stock			Accumulated Other		
	Shares	Par Value	Additional Paid-In Capital	Comprehensive (Loss) Income	Retained Deficit	Total Shareholders' Equity
Balance at September 30, 2022	13,994	$ 140	$ 124,458	$ (1,767)	$ (24,463)	$ 98,368
Net loss	—	—	—	—	(2,744)	(2,744)
Translation adjustment	—	—	—	416	—	416
Stock compensation expense	—	—	164	—	—	164
Stock options exercised	9	—	34	—	—	34
Balance at December 31, 2022	14,003	140	124,656	(1,351)	(27,207)	96,238
Net income	—	—	—	—	3,204	3,204
Translation adjustment	—	—	—	384	—	384
Stock compensation expense	—	—	174	—	—	174
Stock options exercised	36	—	297	—	—	297
Balance at March 31, 2023	14,039	$ 140	$ 125,127	$ (967)	$ (24,003)	$ 100,297
Balance at September 30, 2023	14,186	$ 142	$ 126,963	$ (1,695)	$ (37,045)	$ 88,365
Net loss	—	—	—	—	(9,358)	(9,358)
Translation adjustment	—	—	—	269	—	269
Stock compensation expense	—	—	317	—	—	317
Stock options exercised	5	—	28	—	—	28
Balance at December 31, 2023	14,191	142	127,308	(1,426)	(46,403)	79,621
Net income	—	—	—	—	970	970
Translation adjustment	—	—	—	(50)	—	(50)
Stock compensation expense	—	—	350	—	—	350
Stock options exercised	18	—	—	—	—	—
Balance at March 31, 2024	14,209	$ 142	$ 127,658	$ (1,476)	$ (45,433)	$ 80,891

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(in thousands)

	Six Months Ended March 31, 2024	Six Months Ended March 31, 2023
Operating Activities		
Net (loss) income	$ (8,388)	$ 460
Adjustments to reconcile net (loss) income to net cash provided by (used in) operating activities:		
Depreciation and amortization	1,572	1,887
Write-down of inventory	940	517
Goodwill impairment	6,370	—
Intangible asset impairment	1,279	—
Deferred income taxes	(22)	(3,172)
Non-cash share-based compensation expense	667	338
Gain on sale of property, plant and equipment	(2,197)	—
Provision for allowance for credit losses	—	156
Changes in operating assets and liabilities:		
Accounts receivable	5,244	1,113
Inventories	2,617	(4,631)
Other assets	3,163	2,215
Accounts payable	(3,462)	(1,497)
Accrued income taxes	(42)	(1,192)
Accrued and other liabilities	(3,432)	(2,289)
Contract liabilities	998	768
Net cash provided by (used in) operating activities	5,307	(5,327)
Investing Activities		
Purchases of property, plant and equipment	(1,976)	(976)
Proceeds from the sale of property, plant and equipment	2,700	—
Acquisition, net of cash and cash equivalents acquired	—	(35,498)
Net provided by provided by (used in) investing activities	724	(36,474)
Financing Activities		
Proceeds from the exercise of stock options	28	331
Payments on long-term debt	(6,413)	(412)
Borrowings on long-term debt	—	12,000
Net cash (used in) provided by financing activities	(6,385)	11,919
Effect of Exchange Rate Changes on Cash and Cash Equivalents	221	741
Net Decrease in Cash and Cash Equivalents	(133)	(29,141)
Cash and Cash Equivalents, Beginning of Period	13,133	46,874
Cash and Cash Equivalents, End of Period	$ 13,000	$ 17,733
Supplemental Cash Flow Information:		
Income tax payments, net	$ 323	$ 1,529
Interest paid	$ 391	$ 94

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

1. Basis of Presentation and Significant Accounting Policies

Nature of Operations and Basis of Presentation – Amtech is a leading, global manufacturer of capital equipment, including thermal processing, wafer polishing and cleaning, and related consumables used in fabricating semiconductor devices, such as silicon carbide ("SiC") and silicon power devices, analog and discrete devices, electronic assemblies and light-emitting diodes ("LEDs"). We sell these products to semiconductor device and module manufacturers worldwide, particularly in Asia, North America and Europe.

We serve niche markets in industries that are experiencing technological advances, and which historically have been very cyclical. Therefore, our future profitability and growth depend on our ability to develop or acquire and market profitable new products and on our ability to adapt to cyclical trends.

The accompanying unaudited condensed consolidated financial statements have been prepared pursuant to the rules and regulations of the U.S. Securities and Exchange Commission (the “SEC”), and consequently do not include all disclosures normally required by accounting principles generally accepted in the United States of America (“GAAP”). In the opinion of management, the accompanying unaudited interim condensed consolidated financial statements contain all adjustments necessary, all of which are of a normal and recurring nature, to present fairly our financial position, results of operations and cash flows. Certain information and note disclosures normally included in financial statements have been condensed or omitted pursuant to the rules and regulations of the SEC. The condensed consolidated balance sheet at September 30, 2023, has been derived from the audited consolidated financial statements at that date but does not include all of the information and footnotes required by GAAP for complete financial statements. These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto included in our Annual Report on Form 10-K for the fiscal year ended September 30, 2023.

Our fiscal year is from October 1 to September 30. Unless otherwise stated, references to particular years, quarters, months or periods refer to our fiscal years ending or ended September 30, and the associated quarters, months, and periods of those fiscal years.

The consolidated results of operations for the three and six months ended March 31, 2024, are not necessarily indicative of the results to be expected for the full fiscal year.

Principles of Consolidation – The consolidated financial statements include the accounts of the Company and our wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates – The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Accounts Receivable and Allowance for Credit Losses – Accounts receivable are recorded at the sales price of products sold to customers on trade credit terms. We establish a valuation allowance to reflect our best estimate of expected losses inherent in our accounts receivable balance. The allowance is based on our evaluation of the aging of the receivables, historical write-offs, the current economic environment and communications with the customer. We write off individual accounts against the allowance when we no longer believe that it is probable that we will collect the receivable because we become aware of a customer’s inability to meet its financial obligations.

Intangible Assets – Intangible assets acquired in business combinations are capitalized and subsequently amortized on a straight-line basis over their estimated useful life. We regularly perform reviews to determine if facts and circumstances exist which indicate that the useful lives of our intangible assets are shorter than originally estimated or the carrying amount of these assets may not be recoverable. When indicators exist, recoverability of assets is measured by a comparison of the carrying value of the asset group to the estimated undiscounted future net cash flows expected to be generated by the asset group. If the asset group is determined not to be recoverable, the Company performs an analysis of the fair value of the individual long-lived assets and will recognize an impairment loss when the fair value is less than the carrying value of such long-lived assets. Patent costs consist primarily of legal and filing fees incurred to file patents on proprietary methods and technology we developed. Patent costs are expensed when incurred, as they are insignificant. Additional information on impairment testing of intangible assets can be found in Notes 1 and 9 of our Annual Report on Form 10-K for the year ended September 30, 2023.

In the first quarter of fiscal year 2024, we recorded an impairment of definite lived intangible assets in our Material and Substrate segment. See Note 7 for a description of the facts and circumstances leading to the intangible asset impairment.

Goodwill – Goodwill is recorded when the purchase price paid for an acquisition exceeds the estimated fair value of net identified tangible and intangible assets acquired. Goodwill is not subject to amortization but is tested for impairment annually or when it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If it is concluded that there is impairment, we would recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value (although the loss would not exceed the total amount of goodwill allocated to the reporting unit). Additional information on impairment testing of goodwill can be found in Notes 1 and 10 of our Annual Report on Form 10-K for the year ended September 30, 2023.

In the first quarter of fiscal year 2024, we recorded an impairment of goodwill in our Material and Substrate segment. See Note 7 for a description of the facts and circumstances leading to goodwill impairment.

Contract Liabilities – Contract liabilities are reflected in current liabilities on the Condensed Consolidated Balance Sheets as all performance obligations are expected to be satisfied within the next 12 months. Contract liabilities relate to payments invoiced or received in advance of completion of performance obligations under a contract. Contract liabilities are recognized as revenue upon the fulfillment of performance obligations. Contract liabilities consist of customer deposits and deferred revenue as of March 31, 2024 and September 30, 2023.

The following is a summary of activity for contract liabilities, in thousands:

	Three Months Ended March 31,		Six Months Ended March 31,	
	2024	2023	2024	2023
Beginning balance	$ 9,518	$ 6,955	$ 8,018	$ 7,231
New deposits	724	3,552	3,547	4,279
Deferred revenue	(9)	—	(6)	—
Revenue recognized	(1,218)	(846)	(2,544)	(1,414)
Adjustment	—	—	—	(435)
Ending balance	$ 9,015	$ 9,661	$ 9,015	$ 9,661

As of March 31, 2024, we had approximately $44.3 million of remaining performance obligations, which included recognized contract liabilities as well as amounts to be invoiced and recognized in future periods. As of September 30, 2023, we had approximately $51.8 million of remaining performance obligations. The orders included in our remaining performance obligations are expected to ship within the next twelve months.

Warranty – A limited warranty is provided free of charge, generally for periods of 12 to 36 months to all purchasers of our new products and systems. Accruals are recorded for estimated warranty costs at the time revenue is recognized. While our warranty costs have historically been within our expectations and we believe that the amounts accrued for warranty expenditures are sufficient for all systems sold through March 31, 2024, we cannot guarantee that we will continue to experience a similar level of predictability regarding warranty costs. In addition, technological changes or previously unknown defects in raw materials or components may result in more extensive and frequent warranty service than anticipated, which could result in an increase in our warranty expense. Our accrued warranty expense was $0.8 million at March 31, 2024 and $1.0 million at September 30, 2023.

The following is a summary of activity in accrued warranty expense, in thousands:

	Six Months Ended March 31,	
	2024	2023
Beginning balance	$ 965	$ 871
Additions for warranties issued during the period	97	342
Costs incurred during the period	(19)	9
Changes in estimate for pre-existing warranties	(280)	(139)
Ending balance	$ 763	$ 1,083

Shipping Expense – Shipping and handling fees associated with outbound freight are expensed as incurred and included in selling, general and administrative expenses. Shipping expense was $0.5 million and $0.8 million for the three months ended March 31, 2024 and 2023, respectively, and $1.1 million and $1.4 million for the six months ended March 31, 2024 and 2023, respectively.

Concentrations of Credit Risk – Our customers are primarily manufacturers of semiconductor substrates and devices and electronic assemblies. Financial instruments that potentially subject us to significant concentrations of credit risk consist principally of cash and trade accounts receivable. Credit risk is managed by performing credit evaluations of the customers' financial condition, by requiring significant deposits where appropriate, and by actively monitoring collections. Letters of credit are required of certain customers depending on the size of the order, type of customer or its creditworthiness, and country of domicile.

As of March 31, 2024, two Semiconductor segment customers each represented 14% of accounts receivable. As of September 30, 2023, two Semiconductor segment customers each represented 17% of accounts receivable.

We maintain our cash and cash equivalents in multiple financial institutions. Balances in the United States, which account for approximately 72% and 56% of total cash balances as of March 31, 2024 and September 30, 2023, respectively, are primarily invested in financial institutions insured by the FDIC as well as a money market account. The remainder of our cash is maintained with financial institutions with reputable credit in China, the United Kingdom, Singapore, and Malaysia. We maintain cash in bank accounts in amounts which at times may exceed federally insured limits. At March 31, 2024 and September 30, 2023 Amtech's balances exceeded insured limits by approximately $8.2 million and $6.0 million. We have not experienced any losses on such accounts.

Refer to Note 12 to Condensed Consolidated Financial Statements for information regarding major customers, foreign sales and revenue in other countries subject to fluctuation in foreign currency exchange rates.

Fair Value of Financial Instruments – We group our financial assets and liabilities measured at fair value on a recurring basis into 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.

It is our policy to use observable inputs whenever reasonably practicable in order to minimize the use of unobservable inputs when developing fair value measurements. When available, we use 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, we are 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 current or future valuations.

Cash and Cash Equivalents – Included in cash and cash equivalents in the Consolidated Balance Sheets are money market funds and time deposit accounts. Cash equivalents are classified as Level 1 in the fair value hierarchy.

Receivables and Payables – The recorded amounts of these financial instruments, including accounts receivable and accounts payable, approximate their fair value because of the short maturities of these instruments.

Debt – The carrying value of debt under our amended Loan Agreement is based on a floating per annum rate of interest equal to the Prime Rate, adjusted daily, plus a margin. At March 31, 2024, the carrying value of the Company's total debt was $4.2 million, which approximates fair value. The fair value for the amended Loan Agreement was estimated by discounting the future cash flows using the current rates at which similar loans would be made to borrowers with similar credit ratings and is therefore classified as Level 2 in the fair value hierarchy.

Impact of Recently Issued Accounting Pronouncements

In December 2023, the FASB issued ASU 2023-09, "Income Taxes (Topic 740): Improvements to Income Tax Disclosures" ("ASU 2023-09"), which enhances the transparency and decision usefulness of income tax disclosures. Adjustments to the annual disclosure of income taxes include: a tabular rate reconciliation comprised of eight specific categories. Incomes taxes paid, disaggregated between significant federal, state, and foreign jurisdictions. Eliminating requirements to disclose the nature and estimate of reasonably possible changes to unrecognized tax benefits in the next 12 months or that an estimated range cannot be made. Adds a requirement to disclose income (or loss) from continuing operations before income tax expense (or benefit) and income tax expense (or benefit) from continuing operations disaggregated between domestic and foreign. The ASU is effective for public business entities for fiscal years beginning on or after December 15, 2024, with early adoption permitted. The amendments in ASU 2023-09 should be applied on a prospective basis. Retrospective application is permitted. This ASU is not expected to have a material effect on our financial condition or results of operations.

In November 2023, the FASB issued ASU 2023-07, "Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures" ("ASU 2023-07"), which improves reportable segment disclosure requirements, primarily through enhanced disclosures about significant segment expenses. The ASU is effective for public business entities for fiscal years beginning after December 15, 2023, and for interim reporting periods within fiscal years beginning after December 15, 2024. Early adoption permitted. The amendments in ASU 2023-07 should be applied retrospectively to all prior periods presented in the financial statements. We are currently evaluating the impact this guidance will have on our consolidated financial statements.

There were no other new accounting pronouncements issued or effective as of March 31, 2024 that had or are expected to have a material impact on our consolidated financial statements.

2. Long-Term Debt

Our finance lease liabilities and long-term debt consists of the following, in thousands:

	March 31, 2024	September 30, 2023
Revolving credit facility	$ —	$ —
Term loan	4,202	10,573
Finance leases	106	114
Total	4,308	10,687
Less: current portion of finance lease liabilities and long-term debt	(4,243)	(2,265)
Finance Lease Liabilities and Long-Term Debt	$ 65	$ 8,422

Interest expense on finance lease liabilities and long-term debt was $0.2 million for the three months ended March 31, 2024 and 2023, and $0.4 million and $0.2 million for the six months ended March 31, 2024 and 2023, respectively.

Loan and Security Agreement

On January 17, 2023, we entered into a Loan and Security Agreement (the "Loan Agreement") among Amtech, its U.S. based wholly owned subsidiaries Bruce Technologies, Inc., a Massachusetts corporation, BTU International, Inc., a Delaware corporation, Intersurface Dynamics, Incorporated, a Connecticut corporation, P.R. Hoffman Machine Products, Inc., an Arizona corporation, and Entrepix, Inc. (collectively the "Borrowers"), and UMB Bank, N.A., national banking association (the "Lender"). The Loan Agreement provides for (i) a term loan (the "Term Loan") in the amount of $12.0 million maturing January 17, 2028, and (ii) a revolving loan facility (the "Revolver") with an availability of $8.0 million maturing January 17, 2024. The recorded amount of the Term Loan has an interest rate of 6.38%. The Revolver has a floating per annum rate of interest equal to the Prime Rate, adjusted daily. Under the Loan Agreement, we are required to pay a non-utilization fee equal to 0.125% of any unused portion of the Revolver in excess of any letter of credit obligations.

The Term Loan and Revolver are secured by a first priority lien on substantially all of the Borrowers' assets (other than certain customary excluded assets) and the Loan Agreement contains customary events of default, representations and warranties, and covenants that restrict the Borrowers' ability to, among other things, incur additional indebtedness, other than permitted indebtedness, enter into mergers or acquisitions, sell or otherwise dispose of assets, or pay dividends, subject to customary exceptions.

The Loan Agreement additionally contains financial covenants such that, as of the end of each of their fiscal quarters, beginning March 31, 2023, the Borrowers must maintain (i) a ratio of consolidated debt owed to Lender to consolidated EBITDA (as defined in the Loan Agreement) for such fiscal quarter, of not greater than 1.50 to 1.00, through December 31, 2024, based on a building four quarters (as described in the Loan Agreement), and then 1.00 to 1.00 each fiscal quarter thereafter, (ii) a ratio of (a) the total for such fiscal quarter of EBITDAR (as defined in the Loan Agreement) minus the sum of all income taxes paid in cash plus cash dividends/distributions plus maintenance Capital Expenditures (as defined in the Loan Agreement) plus management fees paid in cash, to (b) the sum for such fiscal quarter of (1) Interest Charges (as defined in the Loan Agreement) plus (2) required payments of principal on Debt (as defined in the Loan Agreement) (including the Term Loan, but excluding the Revolver) plus (3) operating lease/rent expense, of not less than 1.30 to 1.00 based on a building four quarters (as described in the Loan Agreement), and (iii) a consolidated working capital of current assets (excluding related party receivables and prepaid expenses) minus current liabilities of at least $35.0 million.

At September 30, 2023, we were not in compliance with the Debt to EBITDA and Fixed Charge Coverage Ratio financial covenants under our Loan Agreement. On December 5, 2023, we entered into a Forbearance & Modification Agreement (the "Forbearance Agreement") with UMB Bank related to such non-compliance, pursuant to which UMB Bank agreed to forbear from exercising its rights and remedies available to it as a result of such defaults. We will be operating under the terms of such Forbearance Agreement through January 17, 2025 (the "Forbearance Period").

The Forbearance Agreement also amends the Loan Agreement to, among other things, (i) increase the availability under the revolving line of credit from $8.0 million to $14.0 million (the "Revolver"), and (ii) reduce the term loan commitment from $12.0 million to $4.4 million (the "Term Loan"). The Revolver maturity date was extended one year to January 17, 2025 and the Term Loan maturity date was extended one year to January 17, 2029. Both the Revolver and the Term Loan have a floating per annum rate of interest equal to the Prime Rate, adjusted daily, plus the Applicable Margin (as such terms are defined in the Loan Agreement). We are required to pay a non-utilization fee equal to 0.125% of any unused portion of the Revolver in excess of any letter of credit obligations. As of September 30, 2023, no amounts were borrowed against the Revolver and there were no letters of credit outstanding. As of the effective date of the Forbearance Agreement, $10.0 million was drawn under the Loan Agreement, which included $4.4 million under the Term Loan and $5.6 million under the Revolver. As of March 31, 2024, $4.2 million was outstanding on the Term Loan, no amounts were borrowed against the Revolver, and there was an outstanding letter of credit in the amount of $0.3 million.

Future borrowings, if any, under the Loan Agreement are subject to, among other things, having sufficient unencumbered Eligible Accounts, Eligible Foreign Accounts and Eligible Inventory (as such terms are defined in the Loan Agreement) to meet the borrowing base requirements included in the amended Loan Agreement.

Under the amended Loan Agreement, the Company is required to comply with the following financial covenants:

- Maintaining, on a consolidated basis, a minimum EBITDA (as defined in the Loan Agreement) through the fiscal year ending September 30, 2024, measured on a quarterly basis (the “Minimum EBITDA Covenant”). The Minimum EBITDA Covenant amount increases each quarter during such period. At March 31, 2024, we were in compliance with the Minimum EBITDA Covenant for such period (not less than negative EBITDA of $800,000 for the six-month period ended March 31, 2024), with actual positive EBITDA of $1.0 million for such period. The Minimum EBITDA Covenant replaced the Senior Debt to EBITDA covenant set forth in the original Loan Agreement.
- As of the end of each of the Company’s fiscal years, commencing for the fiscal year ending September 30, 2024, the Company must maintain a ratio of (a) the total for such fiscal year of EBITDAR (as defined in the Loan Agreement) minus the sum of all income taxes paid in cash plus cash dividends/distributions plus maintenance Capital Expenditures (as defined in the Loan Agreement) plus management fees paid in cash, to (b) the sum for such fiscal quarter of (1) Interest Charges (as defined in the Loan Agreement) plus (2) required payments of principal on Debt (as defined in the Loan Agreement) (including the Term Loan, but excluding the Revolver) plus (3) operating lease/rent expense, of not less than 1.30 to 1.00 based on a trailing four (4) quarter basis (the “Fixed Charge Coverage Ratio Covenant”). Prior to entering into the Forbearance Agreement, this covenant was measured as of the end of each of the Company’s fiscal quarters, beginning March 31, 2023.
- As of the end of each of the Company’s fiscal quarters, commencing March 31, 2023, the Company must maintain a consolidated working capital of current assets (excluding related party receivables and prepaid expenses) minus current liabilities of at least $35.0 million. This financial covenant is unchanged in the Forbearance Agreement.

If the Lender does not extend the Forbearance Period or otherwise grant a waiver in the future for the covenant defaults described above, an event of default under the Loan Agreement would exist. To the extent the Lender so elects, the outstanding indebtedness under the Loan Agreement could be accelerated following the expiration of any applicable cure periods, causing such debt to be immediately due and payable. In addition, should the Company default in its obligation to comply with any of the covenants described immediately above during the Forbearance Period, an event of default would then exist, and, absent a further forbearance agreement or waiver granted by the Lender, the Lender would have the right to accelerate the indebtedness following the expiration of any applicable cure periods, causing such debt to be immediately due and payable. Both of the foregoing events would also result in the termination of all commitments to extend further credit under the Loan Agreement. There is no guarantee we will have sufficient liquidity to repay our outstanding debt under the Loan Agreement in full if such debt were accelerated. As of March 31, 2024, we had $13.0 million in cash and cash equivalents, and $4.2 million in debt under the Loan Agreement. If we are unable to pay such debt as it comes due, or obtain waivers for such payments, our Lender could foreclose on the assets securing such debt. These events could materially adversely affect our business, results of operations and financial condition. As of March 31, 2024, all outstanding debt under the Loan Agreement was classified as current as a result of the Lender’s ability, in its sole discretion, to call the amounts due thereunder at the end of the Forbearance Period.

Finance Lease Obligations

Our finance lease obligations totaled $0.1 million as of March 31, 2024 and September 30, 2023.

The current and long-term portions of our finance leases are included in the current and long-term portions of finance lease liabilities and long-term debt in the table above and in our Condensed Consolidated Balance Sheets as of March 31, 2024 and September 30, 2023. Further, see Note 6 for additional information.

3. Acquisition

Entrepix Merger

On January 17, 2023 (the "Closing Date"), the Company acquired 100% of the issued and outstanding shares of capital stock of Entrepix, Inc., an Arizona corporation ("Entrepix"), which primarily manufactures chemical mechanical polishing ("CMP") technology, through a reverse triangular merger. Entrepix's CMP technology portfolio and wafer cleaning equipment will complement our existing substrate polishing and wet process chemical offerings. Pursuant to the terms and conditions of the Agreement and Plan of Merger dated January 17, 2023 (the "Merger Agreement"), Emerald Merger Sub, Inc., a wholly-owned subsidiary of the Company ("Merger Sub"), merged with and into Entrepix (the "Merger"), resulting in Entrepix surviving the Merger and becoming a wholly-owned subsidiary of the Company (the "Acquisition" or "Transaction").

On the Closing Date, in connection with the Merger Agreement and in contemplation of the Transaction, the Company entered into a Loan and Security Agreement with UMB Bank, N.A., under which the Lender provided the Company with (i) a $12.0 million term loan maturing January 17, 2028, and (ii) an $8.0 million revolving loan facility maturing January 17, 2024 (see Note 2). The proceeds of the Term Loan were used to partially fund the Transaction.

The Acquisition is accounted for using the acquisition method of accounting for business combinations under FASB Accounting Standard Codification Topic No. 805, *Business Combinations* ("ASC 805"), with Amtech representing the accounting acquirer under this guidance.

Summary of Consideration Transferred

The total consideration for the Acquisition was $39.2 million, consisting of $35.2 million cash consideration to the sellers and $4.0 million cash paid for debt and Entrepix transaction costs.

Goodwill is calculated as the excess of the consideration transferred over the net assets recognized and represents the estimated future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. Such assets include synergies the Company expects to achieve, such as deeper penetration into an overlapping customer base, complementary product offerings, and cost redundancy reductions. In accordance with the measurement principles in FASB Accounting Standard Codification Topic No. 820, *Fair Value Measurement*, the purchase consideration for the Acquisition has been allocated under the acquisition method of accounting to the estimated fair market value of the net assets acquired, including a residual amount of goodwill, none of which is deductible for tax purposes. Amtech's acquisition costs incurred were $2.5 million as of the year ended September 30, 2023, and were recorded as "Selling, general and administrative expenses" in the accompanying Condensed

Consolidated Statements of Operations. The following table summarizes the fair values assigned to identifiable assets acquired and liabilities assumed, in thousands:

		September 30, 2023
Fair value of total cash consideration transferred	$	39,227
Estimated fair value of identifiable assets acquired and liabilities assumed:		
Cash and cash equivalents	$	4,289
Accounts receivable, net		5,884
Inventories		5,683
Other current assets		179
Property, plant, and equipment		2,040
Right-of-use assets		2,246
Intangible assets		13,600
Goodwill		16,463
Other assets		80
Total assets acquired		50,464
Accounts payable		1,574
Other accrued liabilities		1,994
Contract liabilities		1,949
Income taxes payable		985
Current portion of long-term operating lease liabilities		515
Long-term operating lease liabilities		1,730
Deferred tax liability		2,490
Total liabilities assumed		11,237
Net assets acquired	$	39,227

The establishment of the allocation to goodwill requires the extensive use of accounting estimates and management judgment. In accordance with ASC 805, the Company has up to one year from the acquisition date (referred to as the measurement period) to account for changes in the fair values of the identifiable assets acquired and the liabilities assumed in the acquired entity. As of January 17, 2024 the measurement period is closed.

The fair value associated with acquired intangible assets and their associated weighted-average amortization periods consist of the following, in thousands:

	Classification of Amortization		Amount	Weighted-Average Amortization Period
Developed technology	Cost of sales	$	6,700	5.0 years
Customer relationships	Selling, general and administrative		2,800	10.0 years
Backlog	Selling, general and administrative		2,100	1.0 year
Trade names	Selling, general and administrative		1,800	10.0 years
Noncompetition agreements	Selling, general and administrative		200	5.0 years
Total intangible assets		$	13,600	6.1 years

Unaudited Pro Forma Financial Information

The following unaudited pro forma financial information presents the combined results of operations of Amtech and Entrepix, in thousands, as if the acquisition occurred on October 1, 2021. The unaudited pro forma financial information is presented for informational purposes only and is not indicative of the results of operations that would have been achieved if the acquisition had taken place on the date indicated or of results that may occur in the future.

		Three Months Ended March 31, 2023		Six Months Ended March 31, 2023
Revenues, Net	$	34,623	$	63,778
Net Income	$	4,285	$	1,149

The unaudited pro forma financial information presented above include the following adjustments:

3 Months Ended March 31, 2023

- reversal of amortization expense on intangible assets acquired of $0.5 million for the three months ended March 31, 2023;
- incremental interest expense on the Term Loan of $0.2 million for the three months ended March 31, 2023; and
- non-recurring adjustments directly attributable to the business combination.

6 Months Ended March 31, 2023

- incremental amortization expense on intangible assets acquired of $0.9 million for the six months ended March 31, 2023;
- incremental interest expense on the Term Loan of $0.3 million for the six months ended March 31, 2023; and
- non-recurring adjustments directly attributable to the business combination.

The unaudited pro forma financial information includes adjustments to align accounting policies, which were materially similar to the Company's accounting policies. Any differences in accounting policies were adjusted to reflect the accounting policies of the Company in the unaudited pro forma financial information presented.

4. Earnings Per Share

Basic earnings per share ("EPS") is computed by dividing net income by the weighted average number of common shares outstanding for the period. Diluted EPS is computed similarly to basic EPS except that the denominator is increased to include the number of additional common shares that would have been outstanding if potentially dilutive common shares had been issued. Dilutive potential common shares include outstanding restricted stock units ("RSUs") and stock options. In the case of a net loss, diluted earnings per share is calculated in the same manner as basic EPS.

For the three and six months ended March 31, 2024, options for 817,191 and 645,244 weighted average shares, respectively, were excluded from the diluted EPS calculations because they were anti-dilutive. For the three and six months ended March 31, 2023, options for 327,000 and 293,000 weighted average shares, respectively, were excluded from the diluted EPS calculations because they were anti-dilutive. These shares could become dilutive in the future.

A reconciliation of the components of the basic and diluted EPS calculations follows, in thousands, except per share amounts:

	Three Months Ended March 31, 2024	Three Months Ended March 31, 2023	Six Months Ended March 31, 2024	Six Months Ended March 31, 2023
Numerator:				
Net income (loss)	$ 970	$ 3,204	$ (8,388)	$ 460
Denominator:				
Weighted-average shares used to compute basic EPS	14,197	14,028	14,193	14,018
Dilutive potential common shares due to stock options (1)	—	128	—	124
Dilutive potential common shares due to RSUs (1)	12	1	—	—
Weighted-average shares used to compute diluted EPS	14,209	14,157	14,193	14,142
Income (loss) per share:				
Net income (loss) per basic share	$ 0.07	$ 0.23	$ (0.59)	$ 0.03
Net income (loss) per diluted share	$ 0.07	$ 0.23	$ (0.59)	$ 0.03

(1)The number of common stock equivalents is calculated using the treasury method and the average market price during the period.

5. Inventories

The components of inventories are as follows, in thousands:

	March 31, 2024	September 30, 2023
Purchased parts and raw materials	$ 21,558	$ 22,627
Work-in-process	7,058	7,774
Finished goods	2,692	4,444
	$ 31,308	$ 34,845

6. Leases

The following table provides information about the financial statement classification of our lease balances reported within the Condensed Consolidated Balance Sheets, in thousands:

	March 31, 2024	September 30, 2023
Assets		
Right-of-use assets - operating	$ 9,784	$ 11,217
Right-of-use assets - finance	106	123
Total right-of-use assets	$ 9,890	$ 11,340
Liabilities		
Current		
Operating lease liabilities	$ 1,934	$ 2,623
Finance lease liabilities	41	64
Total current portion of long-term lease liabilities	1,975	2,687
Long-term		
Operating lease liabilities	8,195	8,894
Finance lease liabilities	65	50
Total long-term lease liabilities	8,260	8,944
Total lease liabilities	$ 10,235	$ 11,631

The following table provides information about the financial statement classification of our lease expenses reported in the Condensed Consolidated Statements of Operations, in thousands:

		Three Months Ended March 31,		Six Months Ended March 31,	
Lease cost	**Classification**	**2024**	**2023**	**2024**	**2023**
Operating lease cost	Cost of sales	$ 373	$ 688	$ 1,118	$ 1,149
Operating lease cost	Selling, general and administrative	464	202	668	379
Operating lease cost	Research, development and engineering	3	4	6	7
Finance lease cost	Cost of sales	1	1	2	2
Finance lease cost	Selling, general and administrative	22	18	42	36
Short-term lease cost	Cost of sales	—	9	—	17
Total lease cost		$ 863	$ 922	$ 1,836	$ 1,590

Future minimum lease payments under non-cancelable leases as of March 31, 2024 are as follows, in thousands:

	Operating Leases	Finance Leases	Total
Remainder of 2024	$ 1,416	$ 31	$ 1,447
2025	2,059	29	2,088
2026	1,725	29	1,754
2027	1,106	21	1,127
2028	1,115	5	1,120
Thereafter	5,144	—	5,144
Total lease payments	12,565	115	12,680
Less: Interest	2,436	9	2,445
Present value of lease liabilities	$ 10,129	$ 106	$ 10,235

Operating lease payments include $2.3 million related to options to extend lease terms that are reasonably certain of being exercised.

The following table provides information about the remaining lease terms and discount rates applied:

	March 31, 2024	September 30, 2023
Weighted average remaining lease term		
Operating leases	7.72 years	7.31 years
Finance leases	4.88 years	2.54 years
Weighted average discount rate		
Operating leases	5.60 %	5.50 %
Finance leases	5.52 %	4.91 %

During the fourth quarter of fiscal 2023 and the second quarter of fiscal 2024, we entered into leases that have not yet commenced. We expect to record $8.6 million of ROU asset and lease liability upon the commencement of these leases in the third quarter of fiscal 2024.

7. Goodwill and Intangible Assets

The Company accounts for goodwill at acquisition-date fair value and other finite intangibles at acquisition-date fair value less accumulated amortization. See Note 1 for a summary of the Company’s policies relating to goodwill and intangible assets.

Intangible Assets

The Company's intangible assets, net consists of the following, in thousands:

	Amortization Period	March 31, 2024	September 30, 2023
Backlog	1 year	$ 2,100	$ 2,100
Customer relationships	6-10 years	4,409	4,409
Developed technology	5 years	6,700	6,700
Noncompetition agreements	5 years	200	200
Trade names	3-15 years	2,679	2,679
		16,088	16,088
Accumulated amortization		(5,268)	(4,785)
Less asset impairments:			
Backlog		(425)	(425)
Customer relationships		(339)	(119)
Developed technology		(5,494)	(4,645)
Noncompetition agreements		(160)	—
Trade names		(50)	—
Intangible assets, net		$ 4,352	$ 6,114

The estimated aggregate amortization expense for each of the five succeeding fiscal years as of March 31, 2024 is as follows, thousands:

Year ending September 30:	Amount
2024	$ 348
2025	511
2026	511
2027	511
2028	511
Thereafter	1,960
Total	$ 4,352

The aggregate amortization expense during the three months ended March 31, 2024 and 2023 was $0.2 million and $1.0 million, respectively. The aggregate amortization expense during the six months ended March 31, 2024 and 2023 were $0.5 million and $1.0 million, respectively.

During each fiscal year, we periodically assess whether any indicators of impairment existed related to our intangible assets. At the end of December 2023, we identified a triggering event. As a result of the decline in our stock price as of December 31, 2023, our book value materially exceeded our market value. This triggering event indicated we should test the related long-lived assets for impairment in our Material and Substrate segment. We tested each identified asset group within our Material and Substrate segment by first performing a recoverability test, comparing projected undiscounted cash flows from the use and eventual disposition of each asset group to its carrying value. This test indicated that the undiscounted cash flows were not sufficient to recover the carrying value of certain asset groups. We then compared the carrying value of the individual long-lived assets within those asset groups against their fair value in order to determine if impairment existed. Determining the fair value of those asset groups involves the use of significant estimates and assumptions, including projections of revenues and expenses and related cash flows based on assumed long-term growth rates and demand trends, and estimated discount rates based on the asset group's weighted average return on assets, as derived from various methods. The fair value of the intangible assets were estimated using various valuation methodologies, including the multi-period excess earnings method, the relief from royalty method and the distributor method. These fair value measurements fall under Level 3 of the fair value hierarchy. As a result, we recorded a total impairment charge for intangible assets in our Materials and Substrate segment of $1.3 million during the quarter ended December 31, 2023. This impairment charge relates to developed technology, trade name, customer relationships and non-competition agreements at Entrepix.

Goodwill

The Company evaluates goodwill at the reporting unit level, which, for the Company, is at the level of the reportable segments, semiconductor and material and substrate. The changes in carrying amount of goodwill allocated to each of the reporting units for the six months ended March 31, 2024 is as follows, in thousands:

	Semiconductor	Material and Substrate	Total Goodwill
Goodwill	$ 5,905	$ 21,726	$ 27,631
Accumulated impairment losses	—	—	—
Balance at September 30, 2023	5,905	21,726	27,631
Goodwill acquired	—	—	—
Impairment of goodwill	—	(6,370)	(6,370)
Balance at March 31, 2024	$ 5,905	$ 15,356	$ 21,261
Goodwill	$ 5,905	$ 21,726	$ 27,631
Accumulated impairment losses	—	(6,370)	(6,370)
Balance at March 31, 2024	$ 5,905	$ 15,356	$ 21,261

During each fiscal year, we periodically assess whether any indicators of impairment exist which would require us to perform an interim impairment review. At the end of December 2023, we identified a triggering event. As a result of the decline in our stock price as of December 31, 2023, our book value materially exceeded our market value. This triggering event indicated we should test goodwill for impairment. The results of the goodwill impairment test indicated that the book value of our Material and Substrate reporting unit was in excess of the fair value, and, thus, was impaired. There was no impairment of goodwill identified for our Semiconductor reporting unit. As of the three months ended March 31, 2024, there was no new impairment of goodwill for either the Material and Substrate reporting unit or the Semiconductor reporting unit.

Determining the fair value of a reporting unit involves the use of significant estimates and assumptions. Our goodwill impairment test uses a weighting of the income approach and the market approach to estimate a reporting unit's fair value. The income approach is based on a discounted future cash flow analysis that uses certain assumptions including: projections of revenues and expenses and related cash flows based on assumed long-term growth rates and demand trends; expected future investments and working capital requirements to sustain and grow the business; and estimated discount rates based on the reporting unit's weighted average cost of capital as derived by the Capital Asset Pricing Model and other methods, which includes observable market inputs and other data from identified comparable companies. The same estimates are also used internally for our capital budgeting process, and for long-term and short-term business planning and forecasting. We test the reasonableness of the inputs and outcomes of our discounted cash flow analysis against available comparable market data, and we also perform a reconciliation of our total market capitalization to the estimated fair value of all of our reporting units. The market approach is based on the application of appropriate market-derived multiples selected from (i) comparable publicly-traded companies and/or (ii) the implied transaction multiples derived from identified merger and acquisition activity in the market. Multiples are then selected based on a comparison of the reviewed data to that of the reporting unit and applied to relevant historical and forecasted financial parameters such as levels of revenues, EBITDA, EBIT or other metrics. The calculation of fair value falls under Level 3 of the fair value hierarchy.

If the future performance of these reporting units fall short of our expectations, if there are significant changes in operations due to changes in market conditions or if our stock price continues to decline, we could be required to recognize additional material impairment charges in future periods.

8. Income Taxes

Our effective tax rate was (3.5%) and 118.0% for the six months ended March 31, 2024 and 2023, respectively. The effective tax rate for the six months ended March 31, 2024 differs from the U.S. statutory tax rate of 21% primarily due to losses for which no tax benefit can be recognized. The effective tax rate for the six months ended March 31, 2023 differs from the U.S. statutory tax rate of 21% primarily due to the release of a portion of our valuation allowance in connection with a deferred tax liability related to the Entrepix acquisition resulting in recognition of previously recorded deferred tax assets. For the three months ended March 31, 2024 and 2023, we recorded income tax expense of $0.2 million and an income tax benefit of $2.9 million, respectively. For the six months ended March 31, 2024 and 2023, we recorded an income tax expense of $0.3 million and income tax benefit of $3.0 million, respectively. The quarterly income tax provision is calculated using an estimated annual effective tax rate, based upon expected annual income, permanent items, statutory rates and planned tax strategies in the various jurisdictions in which we operate. However, losses in certain jurisdictions and discrete items are excluded from the determination of the estimated annual effective tax rate.

9. Equity and Stock-Based Compensation

Stock-based compensation expense was $0.3 million and $0.2 million in the three months ended March 31, 2024 and 2023, respectively, and $0.7 million and $0.3 million in the six months ended March 31, 2024 and 2023, respectively. Stock-based compensation expense is included in selling, general and administrative expenses.

The following table summarizes our stock option activity during the six months ended March 31, 2024:

	Options	Weighted Average Exercise Price
Outstanding at beginning of period	672,924	$ 8.76
Granted	557,500	5.66
Exercised	(5,000)	5.67
Forfeited	(43,991)	9.63
Outstanding at end of period	1,181,433	$ 7.28
Exercisable at end of period	424,643	$ 8.49
Weighted average fair value of options granted during the period	$ 2.44	

The fair value of options was estimated at the applicable grant date using the Black-Scholes option pricing model with the following assumptions:

	Six Months Ended March 31, 2024	Six Months Ended March 31, 2023
Risk free interest rate	4 %	4 %
Expected term	5 years	5 years
Dividend rate	— %	— %
Volatility	60 %	56 %

The following table summarizes our RSU activity during the six months ended March 31, 2024:

	Number		Weighted Average Grant Date Fair Value
Nonvested at beginning of year	75,977	$	9.15
Granted	24,897		4.82
Released	(20,421)		9.55
Forfeited	—		—
Nonvested at end of period	80,453	$	7.71

2023 Stock Repurchase Plan

On February 7, 2023, our Board of Directors (the "Board") approved a stock repurchase program, pursuant to which we may repurchase up to $5 million of our outstanding Common Stock over a one-year period, commencing on February 10, 2023. Repurchases under the program will be made in open market transactions at prevailing market prices, in privately negotiated transactions, or by other means in compliance with the rules and regulations of the Securities and Exchange Commission; however, we have no obligation to repurchase shares and the timing, actual number, and value of shares to be repurchased is subject to management's discretion and will depend on our stock price and other market conditions. We may, in the sole discretion of the Board, terminate the repurchase program at any time while it is in effect. Repurchased shares may be retired or kept in treasury for further issuance. There were no repurchases during the quarter ended March 31, 2024. The term of this plan expired during the quarter ended March 31, 2024.

10. Commitments and Contingencies

Purchase Obligations – As of March 31, 2024, we had unrecorded purchase obligations in the amount of $16.3 million. These purchase obligations consist of outstanding purchase orders for goods and services. While the amount represents purchase agreements, the actual amounts to be paid may be less in the event that any agreements are renegotiated, canceled or terminated.

Legal Proceedings and Other Claims – From time to time, we are a party to claims and actions for matters arising out of our business operations. We regularly evaluate the status of the legal proceedings and other claims in which we are involved to assess whether a loss is probable or there is a reasonable possibility that a loss, or an additional loss, may have been incurred and determine if accruals are appropriate. If accruals are not appropriate, we further evaluate each legal proceeding to assess whether an estimate of possible loss or range of possible loss can be made for disclosure. Although the outcome of claims and litigation is inherently unpredictable, we believe that we have adequate provisions for any probable and estimable losses. It is possible, nevertheless, that our consolidated financial position, results of operations or liquidity could be materially and adversely affected in any period by the resolution of a claim or legal proceeding. Legal expenses related to defense, negotiations, settlements, rulings and advice of outside legal counsel are expensed as incurred.

Employment Contracts – We have employment contracts and change in control agreements with, and severance plans covering, certain officers and management employees under which severance payments would become payable in the event of specified terminations without cause or terminations under certain circumstances after a change in control. If severance payments under the current employment contracts or severance plans were to become payable, the severance payments would generally range from six to twelve months of salary.

11. Reportable Segments

Amtech has two operating segments that are structured around the types of product offerings provided to our customers. In addition, the operating segments may be further distinguished by the Company's respective brands. These two operating segments comprise our two reportable segments discussed below. Our two reportable segments are as follows:

Semiconductor – We design, manufacture, sell and service thermal processing equipment and related controls for use by leading semiconductor manufacturers, and in electronics, automotive and other industries.

Material and Substrate – We produce consumables and machinery for lapping (fine abrading), polishing and cleaning of materials, such as sapphire substrates, optical components, silicon wafers, numerous types of crystal materials, ceramics and metal components.

Information concerning our reportable segments is as follows, in thousands:

	Three Months Ended March 31,		Six Months Ended March 31,	
	2024	2023	2024	2023
Net Revenues:				
Semiconductor	$ 17,441	$ 22,047	$ 34,968	$ 38,934
Material and Substrate	7,992	11,263	15,385	15,934
	$ 25,433	$ 33,310	$ 50,353	$ 54,868
Operating income (loss):				
Semiconductor	$ 896	$ 2,950	$ 1,977	$ 3,819
Material and Substrate	900	297	(6,943)	930
Non-segment related	(433)	(2,728)	(2,605)	(6,910)
	$ 1,363	$ 519	$ (7,571)	$ (2,161)

	March 31, 2024	September 30, 2023
Identifiable Assets:		
Semiconductor	$ 63,986	$ 72,466
Material and Substrate	50,579	61,576
Non-segment related*	1,909	2,979
	$ 116,474	$ 137,021

* Non-segment related assets include cash, property, and other assets.

12. Major Customers and Foreign Sales

During the six months ended March 31, 2024, one Semiconductor segment customer represented 12% of our net revenues. During the six months ended March 31, 2023, two Semiconductor segment customers individually represented 12% and 11% of our net revenues.

Our net revenues were from customers in the following geographic regions:

	Six Months Ended March 31, 2024	Six Months Ended March 31, 2023
United States	43 %	33 %
Canada	1 %	8 %
Mexico	1 %	3 %
Other	— %	2 %
Total Americas	**45 %**	**46 %**
China	23 %	13 %
Malaysia	8 %	9 %
Taiwan	4 %	5 %
Other	4 %	9 %
Total Asia	**39 %**	**36 %**
Germany	8 %	2 %
Austria	1 %	6 %
Czech Republic	3 %	3 %
Other	4 %	7 %
Total Europe	**16 %**	**18 %**
	100 %	**100 %**

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our "Condensed Consolidated Financial Statements" in Item 1 of this Quarterly Report on Form 10-Q ("Quarterly Report") and our consolidated financial statements and related notes included in "Item 8. Financial Statements and Supplementary Data" in our Annual Report on Form 10-K for the fiscal year ended September 30, 2023 (the "2023 Form 10-K").

Overview

We are a leading, global manufacturer of capital equipment, including thermal processing and wafer polishing and related consumables used in fabricating semiconductor devices, such as silicon carbide ("SiC") and silicon power devices, analog and discrete devices, electronic assemblies, and light-emitting diodes ("LEDs"). We sell these products to semiconductor device and module manufacturers worldwide, particularly in Asia, North America and Europe.

We operate in two reportable segments, based primarily on the industries they serve: (i) Semiconductor and (ii) Material and Substrate. In our Semiconductor segment, we supply thermal processing equipment, including solder reflow ovens, horizontal diffusion furnaces, and custom high-temp belt furnaces for use by semiconductor, electronics and electro/mechanical assembly manufacturers. Our semiconductor customers are primarily manufacturers of integrated circuits and optoelectronic sensors and discrete ("O-S-D") components used in analog, power and radio frequency ("RF"). In our Material and Substrate segment, we produce wafer cleaning equipment as well as substrate consumables and chemicals for lapping (fine abrading) and polishing of materials, such as silicon wafers for semiconductor products, sapphire wafers for LED applications, and compound substrates, like SiC wafers, for power device applications.

The semiconductor industry is cyclical, but not seasonal, and historically has experienced fluctuations. Our revenue is impacted by these broad industry trends.

Strategy

We continue to focus on our plans to profitably grow our business and have developed a strategic growth plan and a capital allocation plan that we believe will support our growth objectives. Our Power Semiconductor strategic growth plan leverages our experience, products and capabilities in pursuit of growth, profitability and sustainability. Our core focus areas are:

- ***Advanced Mobility*** - Advanced Mobility encompasses both the development and adoption of electric vehicles and charging infrastructure, including both electric vehicle (EV) and hybrid electric vehicles (HEV), as well as advanced automotive electronics including Advanced Driver Assistance Systems (ADAS), infotainment and telematics. Our products intersect these markets in multiple ways: consumables and wafer cleaning systems for the SiC substrates used in power modules; thermal processing systems for cooling modules and DBC substrate manufacturing; and reflow ovens for ADAS, infotainment and telematics component assemblies.
- ***Supply Chain Resiliency*** - There is a global trend of creating supply chain resiliency by expanding and/or relocating operations outside of mainland China. These factory openings will create demand for new equipment and services in growing regions like Mexico and Southeast Asia.
- ***Artificial Intelligence*** - With Artificial Intelligence (AI), our reflow oven systems are the favored choice for Outsourced Semiconductor Assembly and Test Services (OSATS) providers who perform advanced packaging of the AI chips.

We anticipate future investments will be required to meet the expected demand from our growing served markets to achieve our revenue growth targets, including investments in research and development as well as capital expenditures, which also includes further investments in talent and management information systems. In June 2022, we completed the sale of the real property where our manufacturing facility in Massachusetts is located. In connection with this sale, we entered into a two-year leaseback of the facility. This sale-leaseback transaction resulted in a net cash inflow of approximately $14.9 million, after repayment of the existing mortgage and settlement of related sale expenses. In September 2023, we signed a lease for a new location more in line with the needs of our Semiconductor product lines. The new location has less square footage as we expand our use of contract manufacturers. We expect to complete the move to this new facility in the third quarter of fiscal 2024. In March 2024, we completed the sale of our corporate headquarters real property in Arizona. The sale resulted in a net cash inflow of approximately $2.5 million, after settlement of related sale expenses. Following the closing of this transaction, we entered into a lease agreement for a new office for our corporate headquarters, which is expected to commence during the third quarter of fiscal year 2024. In addition, we are evaluating business continuity and resiliency within our operations, our management information systems, and our needs to allow for greater efficiencies and to ensure our infrastructure can support our future growth plans. As a capital equipment manufacturer, we will continue to invest in our business to drive future growth.

Results of Operations

The following table sets forth certain operational data as a percentage of net revenue for the periods indicated:

	Three Months Ended March 31,		Six Months Ended March 31,	
	2024	2023	2024	2023
Revenues, net	100 %	100 %	100 %	100 %
Cost of sales	67 %	60 %	65 %	60 %
Intangible asset impairment	— %	— %	2 %	— %
Gross margin	33 %	40 %	33 %	40 %
Selling, general and administrative	32 %	34 %	33 %	38 %
Research, development and engineering	4 %	4 %	5 %	5 %
Gain on sale of fixed assets	(9)%	— %	(4)%	— %
Goodwill impairment	— %	— %	13 %	— %
Intangible asset impairment	— %	— %	1 %	— %
Severance expense	— %	— %	— %	1 %
Operating income (loss)	6 %	2 %	(15)%	(4)%
Interest income	— %	— %	— %	— %
Interest expense	(1)%	— %	(1)%	— %
Foreign currency loss	— %	(1)%	— %	(1)%
Other	— %	— %	— %	— %
Income (loss) before income taxes	5 %	1 %	(16)%	(5)%
Income tax provision (benefit)	1 %	(9)%	1 %	(6)%
Net income (loss)	4 %	10 %	(17)%	1 %

Net Revenue

Net revenue consists of revenue recognized upon shipment or delivery of equipment. Spare parts sales are recognized upon shipment and service revenue is recognized upon completion of the service activity, which is generally ratable over the term of the service contract. Since the majority of our revenue is generated from large system sales, revenue, gross profit and operating income can be significantly impacted by the timing of system shipments.

Our net revenue by reportable segment was as follows, dollars in thousands:

	Three Months Ended March 31,				Six Months Ended March 31,			
Segment	2024	2023	Change	% Change	2024	2023	Change	% Change
Semiconductor	17,441	$ 22,047	$ (4,606)	(21)%	34,968	$ 38,934	$ (3,966)	(10)%
Material and Substrate	7,992	11,263	(3,271)	(29)%	15,385	15,934	(549)	(3)%
Total net revenue	$ 25,433	$ 33,310	$ (7,877)	(24)%	$ 50,353	$ 54,868	$ (4,515)	(8)%

Total net revenue for the three months ended March 31, 2024 and 2023 was $25.4 million and $33.3 million, respectively, a decrease of approximately $7.9 million or 24%. Our Semiconductor results for the second quarter of fiscal 2024 reflect decreases in shipments of our belt furnaces, surface-mount technology (“SMT”) and packaging equipment. We continue to experience softness in shipments of our advanced packaging and SMT equipment, primarily related to a slowdown in global demand in the consumer markets. Material and Substrate revenue decreased due to a lower sales of our wafer cleaning equipment and lower demand for spare parts.

Total net revenue for the six months ended March 31, 2024 and 2023 was $50.4 million and $54.9 million, respectively, a decrease of approximately $4.5 million or 8%. Revenue from the Semiconductor segment decreased $4.0 million compared to the prior year period. This change is primarily attributable to fewer shipments of our horizontal diffusion furnaces, SMT and packaging equipment partially offset by an increase in shipments of our belt furnaces. Revenue from our Material and Substrate segment decreased $0.5 million due to decreased shipments of consumables.

Orders and Backlog

New orders booked by reportable segment were as follows, dollars in thousands:

	Three Months Ended March 31,				Six Months Ended March 31,			
Segment	**2024**	**2023**	**Change**	**% Change**	**2024**	**2023**	**Change**	**% Change**
Semiconductor	$ 12,061	$ 24,606	$ (12,545)	(51)%	$ 29,189	$ 45,690	$ (16,501)	(36)%
Material and Substrate	7,710	9,660	(1,950)	(20)%	13,687	13,805	(118)	(1)%
Total new orders	$ 19,771	$ 34,266	$ (14,495)	(42)%	$ 42,876	$ 59,495	$ (16,619)	(28)%

Our backlog by reportable segment was as follows, dollars in thousands:

	March 31,			
Segment	**2024**	**2023**	**Change**	**% Change**
Semiconductor	$ 39,455	$ 54,767	$ (15,312)	(28)%
Material and Substrate	4,861	11,071	(6,210)	(56)%
Total backlog	$ 44,316	$ 65,838	$ (21,522)	(33)%

As of March 31, 2024, one of our Semiconductor segment customers individually accounted for 29% of our backlog. Additionally, one customer of both our Semiconductor and Material and Substrate segments accounted for 23% of our backlog. No other customer accounted for more than 10% of our backlog as of March 31, 2024. The orders included in our backlog are generally credit approved customer purchase orders believed to be firm and are generally expected to ship within the next twelve months. Our backlog at any particular point in time is not necessarily representative of actual sales for succeeding periods, nor is backlog any assurance that we will realize profit from completing these orders.

Gross Profit and Gross Margin

Gross profit is the difference between net revenue and cost of goods sold. Cost of goods sold consists of purchased material, labor and overhead to manufacture equipment and spare parts and the cost of service and support to customers for installation, warranty and paid service calls. Gross margin is gross profit as a percent of net revenue. Our gross profit and gross margin by business segment were as follows, dollars in thousands:

	Three Months Ended March 31,					Six Months Ended March 31,				
Segment	**2024**	**Gross Margin**	**2023**	**Gross Margin**	**Change**	**2024**	**Gross Margin**	**2023**	**Gross Margin**	**Change**
Semiconductor	$ 5,040	29 %	$ 8,931	41 %	$ (3,891)	$ 11,199	32 %	$ 15,103	39 %	$ (3,904)
Material and Substrate	3,411	43 %	4,539	40 %	(1,128)	5,471	36 %	6,670	42 %	(1,199)
Total gross profit	$ 8,451	33 %	$ 13,470	40 %	$ (5,019)	$ 16,670	33 %	$ 21,773	40 %	$ (5,103)

Our gross margins can be affected by capacity utilization, material costs, and the type and volume of machines and consumables sold each quarter. Gross profit for the three months ended March 31, 2024 and 2023 was $8.5 million (33% of net revenue) and $13.5 million (40% of net revenue), respectively, a decrease of $5.0 million. Gross margin on products from our Semiconductor segment decreased due to changes in our product mix, higher material costs, and lower utilization at our Shanghai facility. Gross margin on products from our Material and Substrate segment increased compared to the three months ended March 31, 2023, primarily due to a more favorable product mix, with increased consumable sales partially offset by lower equipment sales. We are experiencing increased material costs across all our segments. In response to such increased costs, we continually review our pricing plans and supplier agreements, with the objective of passing these increased costs to our customers where possible; however, we continue to experience pricing pressure from our customers. Additionally, there is the potential that our backlog could be negatively affected due to rising material costs. We are also exploring partnerships with contract manufacturers, who can leverage their buying power on a larger scale. In the first quarter of fiscal 2024, we began making targeted labor reductions as a result of the shift to contract manufacturing and the continuing slowdown in the broader semiconductor industry.

Gross profit for the six months ended March 31, 2024 and 2023 was $16.7 million (33% of net revenue) and $21.8 million (40% of net revenue), respectively, a decrease of $5.1 million. Gross margin on products from our Semiconductor segment decreased compared to the six months ended March 31, 2023 primarily due to changes in our product mix and increased material costs. Gross margin on products from our Material and Substrate segment decreased compared to the six months ended March 31, 2023 primarily due to an impairment charge of $0.8 million for intangible assets.

Selling, General and Administrative

Selling, general and administrative ("SG&A") expenses consists of the cost of employees, consultants and contractors, facility costs, sales commissions, shipping costs, promotional marketing expenses, legal and accounting expenses and bad debt expense.

SG&A expenses for the three months ended March 31, 2024 and 2023 were $8.3 million and $11.4 million, respectively. SG&A decreased compared to the prior year quarter due primarily to decreased shipping expense on lower sales and decreased labor and employee-related expenses as a result of staff reductions across all of our divisions. Additionally, the prior year period included $1.5 million of transaction expenses related to the acquisition of Entrepix.

SG&A expenses for the six months ended March 31, 2024 and 2023 were $16.8 million and $20.6 million, respectively. SG&A decreased compared to the prior year period primarily due to decreased shipping expense on lower sales, decreased labor and employee-related expenses as a result of staff reductions across all of our divisions, and lower consulting fees. Additionally, the six months ended March 31, 2023 included $3.0 million of transaction expenses related to the acquisition of Entrepix.

Research, Development and Engineering

Research, development and engineering ("RD&E") expenses consist of the cost of employees, consultants and contractors who design, engineer and develop new products and processes as well as materials and supplies used in producing prototypes. RD&E expenses may vary from period to period depending on the engineering projects in process. Expenses related to engineers working on strategic projects or sustaining engineering projects are recorded in RD&E. However, from time to time we add functionality to our products or develop new products during engineering and manufacturing to fulfill specifications in a customer's order, in which case the cost of development, along with other costs of the order, are charged to cost of goods sold. Occasionally, we receive reimbursements through governmental research and development grants which are netted against these expenses when certain conditions have been met.

RD&E expense, net of grants earned, for the three months ended March 31, 2024 and 2023 were $0.9 million and $1.5 million, respectively, and $2.5 million and $2.9 million in the six months ended March 31, 2024 and 2023, respectively. The decrease in RD&E is due to the timing of purchases related to specific strategic-development projects at our Semiconductor segment. Grants earned are immaterial in all periods presented.

Goodwill Impairment

During the six months ended March 31, 2024, we recognized impairment of our goodwill of $6.4 million at our Material and Substrate segment as a result of a triggering event identified at the end of the first quarter.

Intangible Asset Impairment

During the six months ended March 31, 2024, we recognized impairment of our definite lived intangible assets of $1.3 million at our Material and Substrate segment. As stated above, $0.8 million of this impairment was recorded in cost of goods sold, and the remainder was recorded within operating expenses in the Condensed Consolidated Statement of Operations.

Severance Expense

Severance expense was $0.1 million for the three months ended March 31, 2024. There was no severance expense recorded in the three months ended March 31, 2023. Severance expense was $0.3 million and $0.4 million for the six months ended March 31, 2024 and 2023, respectively. For the three and six months ended March 31, 2024, the amount relates to staff reductions across all our divisions. Severance expense for the six months ended March 31, 2023 relates to the retirement of our founder, Mr. J.S. Whang.

Income Taxes

Our effective tax rate was (3.5%) and 118.0% for the six months ended March 31, 2024 and 2023, respectively. The effective tax rate for the six months ended March 31, 2024 differs from the U.S. statutory tax rate of 21% primarily due to losses for which no tax benefit can be recognized. The effective tax rate for the six months ended March 31, 2023 differs from the U.S. statutory tax rate of 21% primarily due to the release of a portion of our valuation allowance in connection with a deferred tax liability related to the Entrepix acquisition resulting in recognition of previously recorded deferred tax assets. For the three months ended March 31, 2024 and 2023, we recorded income tax expense of $0.2 million and an income tax benefit of $2.9 million, respectively. For the six months ended March 31, 2024 and 2023, we recorded income tax expense of $0.3 million and income tax benefit of $3.0 million, respectively. The quarterly income tax provision is calculated using an estimated annual effective tax rate, based upon expected annual income, permanent items, statutory rates and planned tax strategies in the various jurisdictions in which we operate. However, losses in certain jurisdictions and discrete items are excluded from the determination of the estimated annual effective tax rate.

Our future effective income tax rate depends on various factors, such as the amount of income (loss) in each tax jurisdiction, tax regulations governing each region, non-tax deductible expenses incurred as a percent of pre-tax income and the effectiveness of our tax planning strategies.

Liquidity and Capital Resources

Cash and Cash Flow

The following table sets forth for the periods presented certain consolidated cash flow information, in thousands:

	Six Months Ended March 31,	
	2024	2023
Net cash provided by (used in) operating activities	$ 5,307	$ (5,327)
Net cash provided by (used in) investing activities	724	(36,474)
Net cash (used in) provided by financing activities	(6,385)	11,919
Effect of exchange rate changes on cash and cash equivalents	221	741
Net decrease in cash and cash equivalents	(133)	(29,141)
Cash and cash equivalents, beginning of period	13,133	46,874
Cash and cash equivalents, end of period	$ 13,000	$ 17,733

A summary of our cash position as of March 31, 2024 and September 30, 2023, is as follows, in thousands, except working capital ratio:

	March 31, 2024	September 30, 2023
Cash and cash equivalents	$ 13,000	$ 13,133
Restricted cash	$ —	$ —
Working capital	$ 44,385	$ 51,471
Current ratio (current assets to current liabilities)	2.7:1	2.7:1

The decrease in cash and cash equivalents from September 30, 2023 of $0.1 million was primarily due to payments on long-term debt and fixed asset purchases, partially offset by increased customer down payments, collections from customers and proceeds from the sale of our real property in Arizona. We maintain a portion of our cash and cash equivalents in Renminbis, a Chinese currency, at our operations in China; therefore, changes in the exchange rates have an impact on our cash balances. The decrease in working capital of $7.1 million (calculated in the table above) was primarily due to the decrease in accounts receivable and inventories.

During periods of weakening demand, we typically generate cash from operating activities, which we may decide to reinvest in our business via strategic projects. Conversely, we are more likely to use operating cash flows for working capital requirements during periods of higher growth. Our sources of capital in the past have included the sale of equity securities, which includes common stock sold in private transactions and public offerings, the incurrence of long-term debt and customer deposits. Additionally, in January 2023, we entered into the Loan Agreement with UMB Bank, which included a revolving line of credit with availability up to $8.0 million. On December 5, 2023, we amended this credit facility to, among other things, (i) increase the availability under the revolving line of credit from $8.0 million to $14.0 million (the "Revolver"), (ii) reduce the term loan commitment from $12.0 million to $4.4 million (the "Term Loan"), (iii) extend the maturity date of the Revolver one year to January 17, 2025 and the Term Loan one year to January 17, 2029. See the Forbearance Agreement disclosure under the heading Financing Facilities. Future borrowings, if any, under the Loan Agreement are subject to, among other things, having sufficient unencumbered Eligible Accounts, Eligible Foreign Accounts and Eligible Inventory (as such terms are defined in the Loan Agreement) to meet the borrowing base requirements included in the amended credit facility. There can be no assurance that we can raise such additional capital resources when needed or on satisfactory terms. We believe that our principal sources of liquidity discussed above are sufficient to support operations for at least the next twelve months.

Cash Flows from Operating Activities

Cash provided by our operating activities was $5.3 million for the six months ended March 31, 2024, compared to $5.3 million used in operating activities for the six months ended March 31, 2023. During the first half of fiscal 2024, our accounts receivable collections exceeded new accounts receivable due to the timing of shipments and collections. Additionally, we received more down payments from customers for future shipments during the quarter. During the six months ended March 31, 2023, we used cash to increase our inventory balances in preparation for shipments scheduled over the next four quarters and to pay the related accounts payable.

Cash Flows from Investing Activities

Cash provided by investing activities was $0.7 million for the six months ended March 31, 2024, compared to $36.5 million used in investing activities in the six months ended March 31, 2023. The fiscal 2024 amount consists of $2.7 million of proceeds from the sale of our real property in Arizona, partially offset by capital expenditures. The fiscal 2023 amount consists primarily of cash paid for the acquisition of Entrepix. We expect capital expenditures to increase in the third quarter of fiscal 2024 as we relocate our Massachusetts operations to a smaller facility.

Cash Flows from Financing Activities

For the six months ended March 31, 2024, cash used in financing activities was $6.4 million, primarily comprised of $6.4 million in payments on long-term debt. For the six months ended March 31, 2023, cash provided by financing activities was $11.9 million, comprised of $12.0 million in borrowings on debt facility and $0.3 million of proceeds received from the exercise of stock options partially offset by $0.4 million in payments on long-term debt.

Financing Facilities

Our debt balance as of March 31, 2024 was $4.3 million, including our finance lease obligations. As previously disclosed in our Form 10-K for the fiscal year ended September 30, 2023, at such date we were not in compliance with the Debt to EBITDA and Fixed Charge Coverage Ratio financial covenants under our Loan Agreement. On December 5, 2023, we entered into a Forbearance & Modification Agreement (the “Forbearance Agreement”) with UMB Bank related to such non-compliance, pursuant to which UMB Bank agreed to forbear from exercising its rights and remedies available to it as a result of such defaults. We will be operating under the terms of such Forbearance Agreement through January 17, 2025 (the “Forbearance Period”).

The Forbearance Agreement also amends the Loan Agreement to, among other things, (i) increase the availability under the revolving line of credit from $8.0 million to $14.0 million (the "Revolver"), and (ii) reduce the term loan commitment from $12.0 million to $4.4 million (the “Term Loan”). The Revolver maturity date was extended one year to January 17, 2025 and the Term Loan maturity date was extended one year to January 17, 2029. Both the Revolver and the Term Loan have a floating per annum rate of interest equal to the Prime Rate, adjusted daily, plus the Applicable Margin (as such terms are defined in the Loan Agreement). We are required to pay a non-utilization fee equal to 0.125% of any unused portion of the Revolver in excess of any letter of credit obligations. As of September 30, 2023, no amounts were borrowed against the Revolver and there were no letters of credit outstanding. As of the effective date of the Forbearance Agreement, $10.0 million will be drawn under the Loan Agreement, which includes $4.4 million under the Term Loan and $5.6 million under the Revolver. As of March 31, 2024, $4.2 million was outstanding on the Term Loan, no amounts were borrowed against the Revolver, and there was an outstanding letter of credit in the amount of $0.3 million..

Future borrowings, if any, under the Loan Agreement are subject to, among other things, having sufficient unencumbered Eligible Accounts, Eligible Foreign Accounts and Eligible Inventory (as such terms are defined in the Loan Agreement) to meet the borrowing base requirements included in the amended Loan Agreement.

Under the Loan Agreement, as amended by the Forbearance Agreement, the Company is required to comply with the following financial covenants:

- Maintaining, on a consolidated basis, a minimum EBITDA (as defined in the Loan Agreement) through the fiscal year ending September 30, 2024, measured on a quarterly basis (the “Minimum EBITDA Covenant”). The Minimum EBITDA Covenant amount increases each quarter during such period. At March 31, 2024, we were in compliance with the Minimum EBITDA Covenant for such period (not less than negative EBITDA of $800,000 for the six-month period ended March 31, 2024), with actual positive EBITDA of $1.0 million for such period. The Minimum EBITDA Covenant replaced the Senior Debt to EBITDA covenant set forth in the original Loan Agreement.
- As of the end of each of the Company’s fiscal years, commencing for the fiscal year ending September 30, 2024, the Company must maintain a ratio of (a) the total for such fiscal year of EBITDAR (as defined in the Loan Agreement) minus the sum of all income taxes paid in cash plus cash dividends/distributions plus maintenance Capital Expenditures (as defined in the Loan Agreement) plus management fees paid in cash, to (b) the sum for such fiscal quarter of (1) Interest Charges (as defined in the Loan Agreement) plus (2) required payments of principal on Debt (as defined in the Loan Agreement) (including the Term Loan, but excluding the Revolver) plus (3) operating lease/rent expense, of not less than 1.30 to 1.00 based on a trailing four (4) quarter basis (the “Fixed Charge Coverage Ratio Covenant”). Prior to entering into the Forbearance Agreement, this covenant was measured as of the end of each of the Company’s fiscal quarters, beginning March 31, 2023.
- As of the end of each of the Company’s fiscal quarters, commencing March 31, 2023, the Company must maintain a consolidated working capital of current assets (excluding related party receivables and prepaid expenses) minus current liabilities of at least $35.0 million. This financial covenant is unchanged in the Forbearance Agreement.

If the Lender does not extend the Forbearance Period or otherwise grant a waiver in the future for the covenant defaults described above, an event of default under the Loan Agreement would exist. To the extent the Lender so elects, the outstanding indebtedness under the Loan Agreement could be accelerated following the expiration of any applicable cure periods, causing such debt to be immediately due and payable. In addition, should the Company default in its obligation to comply with any of the covenants described immediately above during the Forbearance Period, an event of default would then exist, and, absent a further forbearance agreement or waiver granted by the Lender, the Lender would have the right to accelerate the indebtedness following the expiration of any applicable cure periods, causing such debt to be immediately due and payable. Both of the foregoing events would also result in the termination of all commitments to extend further credit under the Loan Agreement. There is no guarantee we will have sufficient liquidity to repay our outstanding debt under the Loan Agreement in full if such debt were accelerated. As of March 31, 2024, we had $13.0 million in cash and cash equivalents, and $4.2 million in debt under the Loan Agreement. If we are unable to pay such debt as it comes due, or obtain waivers for such payments, our Lender could foreclose on the assets securing such debt. These events could materially adversely affect our business, results of operations and financial condition. As of March 31, 2024, all outstanding debt under the Loan Agreement was classified as current as a result of the Lender’s ability, in its sole discretion, to call the amounts due thereunder at the end of the Forbearance Period.

The Loan Agreement also includes quarterly and annual reporting requirements and other customary affirmative and negative covenants and events of default for facilities of this type. At March 31, 2024, we were in compliance with all such covenants.

Off-Balance Sheet Arrangements

As of March 31, 2024, we had no off-balance sheet arrangements as defined in Item 303(a)(4) of Regulation S-K promulgated by the SEC that have or are reasonably likely to have a current or future effect on financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors.

Contractual Obligations

Unrecorded purchase obligations were $16.3 million as of March 31, 2024, compared to $24.3 million as of September 30, 2023, a decrease of $8.0 million.

Other than as described in Note 2, there were no material changes to the contractual obligations included in "Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” of our 2023 Form 10-K.

Critical Accounting Estimates

"Part I, Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations” of this Quarterly Report discusses our condensed consolidated financial statements that have been prepared in accordance with GAAP. The preparation of these condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amount of assets and liabilities at the date of the condensed consolidated financial statements, the disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and the reported amounts of revenue and expenses during the reporting period.

On an ongoing basis, we evaluate our estimates and judgments, including those related to revenue recognition, income taxes, inventory valuation, business combination, goodwill, and long-lived asset impairment. We base our estimates and judgments on historical experience, expectations regarding the future and on various other factors that we believe to be reasonable under the circumstances. The results of these estimates and judgments form the basis for making conclusions about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

A critical accounting estimate is one that is both important to the presentation of our financial position and results of operations, and requires management’s most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. These uncertainties are discussed in Part I, Item 1A of our 2023 Form 10-K. We believe our critical accounting estimates relate to the more significant judgments and estimates used in the preparation of our consolidated financial statements.

We believe the critical accounting estimates discussed in the section entitled “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies” in our 2023 Form 10-K represent the most significant judgments and estimates used in the preparation of our consolidated financial statements. There have been no material changes in our critical accounting estimates during the six months ended March 31, 2024.

Impact of Recently Issued Accounting Pronouncements

For discussion of the impact of recently issued accounting pronouncements, see “Part I, Item 1. Financial Information” under “Impact of Recently Issued Accounting Pronouncements.”

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

As a smaller reporting company, as defined by Rule 12b-2 of the Exchange Act and in Item 10(f)(1) of Regulation S-K, we are electing scaled disclosure reporting obligations and, therefore, are not required to provide the information requested by this Item.

Item 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures.

We maintain “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is (1) recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms and (2) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2024. Based upon the evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were not effective at a reasonable assurance level, due to the material weaknesses previously identified and disclosed in our 2023 Form 10-K and listed below. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting (“ICFR”) such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

Changes in Internal Control over Financial Reporting

Other than as discussed below, there were no other changes to our internal control over financial reporting during the six months ended March 31, 2024, that have materially affected, or that are reasonably likely to materially affect, our internal control over financial reporting.

We closed on the acquisition of Entrepix during the year ended September 30, 2023. We have evaluated the existing controls and procedures of Entrepix and integrated our internal control structure over this acquired business.

Remediation Plan for Existing Material Weaknesses

We are in the process of, and continue to focus on, designing and implementing effective measures to strengthen our ICFR and remediate the material weaknesses disclosed in our 2023 Form 10-K.

In relation to the material weakness identified in the areas of goodwill and intangible assets, we have evaluated the design of internal controls over non-routine and complex transactions, including the preparation and review of the third-party service provider valuation reports. Management engaged a new valuation firm to perform the impairment assessment for goodwill and intangible assets for the quarter ended December 31, 2023.

With respect to the material weakness related to general information technology controls, our management, under the oversight of our Audit Committee, has evaluated the current processes and has redesigned existing controls and implemented new controls to remediate the control deficiencies giving rise to this material weakness. Remediation efforts include, but are not limited to:

- Assessing and formalizing the design of certain information technology policies.
- Developing monitoring controls and protocols that will allow us to timely assess the design and operating effectiveness of the new controls.
- Strengthening of user access reviews and enhanced procedures surrounding program change management for systems supporting substantially all of the Company’s internal control processes.
- Assessing segregation of duties within the Company’s business processes.

The material weaknesses will not be considered remediated until the applicable controls operate for a sufficient period of time and management has concluded, through testing, that these controls are operating effectively. We anticipate that the remediation of this material weakness will be completed during fiscal year 2024. We are committed to continuing to improve our internal control processes, and, as we continue to evaluate and work to improve our internal control over financial reporting, we may take additional measures to address control deficiencies, or we may modify certain of our remediation measures.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

For discussion of legal proceedings, see Note 10 to our condensed consolidated financial statements under “Part I, Item 1. Financial Information” under “Commitments and Contingencies” of this Quarterly Report.

Item 1A. Risk Factors

We refer you to documents filed by us with the SEC, specifically “Item 1A. Risk Factors” in our 2023 Form 10-K, which identifies important risk factors that could materially affect our business, financial condition and future results. We also refer you to the factors and cautionary language set forth in the section entitled “Cautionary Statements Regarding Forward-Looking Statements” immediately preceding “Item 1. Condensed Consolidated Financial Statements” of this Quarterly Report. This Quarterly Report, including the accompanying condensed consolidated financial statements and related notes, should be read in conjunction with such risks and other factors for a full understanding of our operations and financial condition. The risks described in our 2023 Form 10-K and any described herein are not the only risks facing us. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition or operating results. There have been no material changes to the risk factors previously disclosed in our 2023 Form 10-K and our Form 10-Q for the quarter ended December 31, 2023.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Issuer Purchases of Equity Securities

On February 7, 2023, the Board approved a stock repurchase program, pursuant to which the Company may repurchase up to $5 million of its outstanding Common Stock over a one-year period, commencing on February 10, 2023. Repurchases under the program will be made in open market transactions at prevailing market prices, in privately negotiated transactions, or by other means in compliance with the rules and regulations of the Securities and Exchange Commission; however, the Company has no obligation to repurchase shares and the timing, actual number, and value of shares to be repurchased is subject to management’s discretion and will depend on the Company’s stock price and other market conditions. The Company may, in the sole discretion of the Board, terminate the repurchase program at any time while it is in effect. Repurchased shares may be retired or kept in treasury for further issuance. The term of this plan expired during the quarter ended March 31, 2024.

During the six months ended March 31, 2024, we did not repurchase any of our equity securities nor did we sell any equity securities that were not registered under the Securities Act of 1933, as amended.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

During the three months ended March 31, 2024, none of our directors or officers (as defined in Rule 16a-1(f) promulgated under the Securities Exchange Act of 1934, as amended) adopted, terminated, or modified a Rule 10b5-1 trading arrangement or a non-Rule 10b5-1 trading arrangement (as such terms are defined in Item 408 of Regulation S-K).

Item 6. Exhibits

EXHIBIT NO.	EXHIBIT DESCRIPTION	INCORPORATED BY REFERENCE FORM	FILE NO.	EXHIBIT NO.	FILING DATE	FILED HEREWITH
31.1	Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as Amended					X
31.2	Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as Amended					X
32.1	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.					X
101.SCH	Inline XBRL Taxonomy Extension Schema With Embedded Linkbase Documents					X
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)					X

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

AMTECH SYSTEMS, INC.

By	/s/ Lisa D. Gibbs Lisa D. Gibbs Vice President and Chief Financial Officer (Principal Financial Officer and Duly Authorized Officer)	Dated:	May 8, 2024

Exhibit 31.1

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES
CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a)
OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Robert C. Daigle, certify that:

1.I have reviewed this Quarterly Report on Form 10-Q of Amtech Systems, Inc. (the “registrant”),

2.Based on my knowledge, this quarterly report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this quarterly report;

3.Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this quarterly report;

4.The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a)Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b)Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c)Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d)Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5.The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a)All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b)Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

By /s/ Robert C. Daigle
Robert C. Daigle
Chairman of the Board and Chief Executive Officer
Amtech Systems, Inc.

Date: May 8, 2024

Exhibit 31.2

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES
CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a)
OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Lisa D. Gibbs, certify that:

1.I have reviewed this Quarterly Report on Form 10-Q of Amtech Systems, Inc. (the “registrant”),

2.Based on my knowledge, this quarterly report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this quarterly report;

3.Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this quarterly report;

4.The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a)Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b)Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c)Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d)Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5.The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a)All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b)Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

By /s/ Lisa D. Gibbs
Lisa D. Gibbs
Vice President and Chief Financial Officer
Amtech Systems, Inc.

Date: May 8, 2024

Exhibit 32.1

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Amtech Systems, Inc. (the “Company”) on Form 10-Q for the period ended March 31, 2024, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Robert C. Daigle, Chairman of the Board and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1)The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2)The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By /s/ Robert C. Daigle
Robert C. Daigle
Chairman of the Board and Chief Executive Officer
Amtech Systems, Inc.

Date: May 8, 2024

The foregoing certification is being furnished pursuant to 18 U.S.C. Section 1350. It is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and it is not to be incorporated by reference into any filing of the Company, regardless of any general incorporation language in such filing.

Exhibit 32.2

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Amtech Systems, Inc. (the "Company") on Form 10-Q for the period ended March 31, 2024, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Lisa D. Gibbs, Vice President and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. sections 1350, as adopted pursuant to sections 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1)The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2)The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By /s/ Lisa D. Gibbs
Lisa D. Gibbs
Vice President and Chief Financial Officer
Amtech Systems, Inc.

Date: May 8, 2024

The foregoing certification is being furnished pursuant to 18 U.S.C. Section 1350. It is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and it is not to be incorporated by reference into any filing of the Company, regardless of any general incorporation language in such filing.