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 September 28, 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: 000-50307

FormFactor, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**13-3711155**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

7005 Southfront Road, Livermore, California 94551

(Address of principal executive offices, including zip code)

(925) 290-4000

(Registrant's telephone number, including area code)

Securities registered pursuant to Section12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, $0.001 par value	**FORM**	**Nasdaq Global Market**

Indicate by 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 submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of the 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. (Check one):

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 ☒

As of October 30, 2024, 77,450,635 shares of the registrant's common stock, par value $0.001 per share, were outstanding.

FORMFACTOR, INC.
FORM 10-Q FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 28, 2024
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PART I - FINANCIAL INFORMATION

Item 1. *Financial Statements*

FORMFACTOR, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share amounts)
(Unaudited)

	September 28, 2024	December 30, 2023
ASSETS		
Current assets:		
Cash and cash equivalents	$ 184,506	$ 177,812
Marketable securities	169,961	150,507
Accounts receivable, net of allowance for credit losses of $4 and $501	116,866	102,957
Inventories, net	105,374	111,685
Restricted cash	3,773	1,152
Prepaid expenses and other current assets	34,302	29,667
Total current assets	614,782	573,780
Restricted cash	2,210	2,309
Operating lease, right-of-use-assets	25,034	30,519
Property, plant and equipment, net of accumulated depreciation	204,108	204,399
Goodwill	200,137	201,090
Intangibles, net	11,017	12,938
Deferred tax assets	92,826	78,964
Other assets	3,669	2,795
Total assets	$ 1,153,783	$ 1,106,794
LIABILITIES AND STOCKHOLDERS’ EQUITY		
Current liabilities:		
Accounts payable	$ 52,086	$ 63,857
Accrued liabilities	46,508	41,037
Current portion of term loan, net of unamortized issuance costs	1,098	1,075
Deferred revenue	20,972	16,704
Operating lease liabilities	8,512	8,422
Total current liabilities	129,176	131,095
Term loan, less current portion, net of unamortized issuance costs	12,488	13,314
Long-term operating lease liabilities	19,731	25,334
Deferred grant	18,000	18,000
Other liabilities	19,378	10,247
Total liabilities	198,773	197,990
Stockholders’ equity:		
Common stock, $0.001 par value:		
250,000,000 shares authorized; 77,447,989 and 77,376,903 shares issued and outstanding	77	77
Additional paid-in capital	845,466	861,448
Accumulated other comprehensive loss	(1,773)	(4,052)
Accumulated income	111,240	51,331
Total stockholders’ equity	955,010	908,804
Total liabilities and stockholders’ equity	$ 1,153,783	$ 1,106,794

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

FORMFACTOR, INC.
CONDENSED CONSOLIDATED STATEMENTS OF INCOME
(In thousands, except per share amounts)
(Unaudited)

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
Revenues	$ 207,917	$ 171,575	$ 574,116	$ 494,939
Cost of revenues	123,212	102,290	339,773	304,293
Gross profit	84,705	69,285	234,343	190,646
Operating expenses:				
Research and development	31,243	31,014	91,434	87,599
Selling, general and administrative	35,607	35,564	106,560	101,561
Total operating expenses	66,850	66,578	197,994	189,160
Gain on sale of business	—	—	20,581	—
Operating income	17,855	2,707	56,930	1,486
Interest income, net	3,650	1,662	10,221	4,420
Other income (expense), net	(558)	788	322	1,261
Income before income taxes	20,947	5,157	67,473	7,167
Provision for income taxes	2,211	786	7,564	626
Net income	$ 18,736	$ 4,371	$ 59,909	$ 6,541
Net income per share:				
Basic	$ 0.24	$ 0.06	$ 0.77	$ 0.08
Diluted	$ 0.24	$ 0.06	$ 0.76	$ 0.08
Weighted-average number of shares used in per share calculations:				
Basic	77,406	77,571	77,364	77,265
Diluted	78,439	78,412	78,495	77,860

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

FORMFACTOR, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)
(Unaudited)

	Three Months Ended		Nine Months Ended	
	September 28, 2024	**September 30, 2023**	**September 28, 2024**	**September 30, 2023**
Net income	$ 18,736	$ 4,371	$ 59,909	$ 6,541
Other comprehensive income (loss), net of tax:				
Foreign currency translation adjustments	4,326	(3,351)	968	(2,641)
Unrealized gains on available-for-sale marketable securities	1,669	283	1,432	801
Unrealized gains (losses) on derivative instruments	180	(996)	(121)	(1,091)
Other comprehensive income (loss)	6,175	(4,064)	2,279	(2,931)
Comprehensive income	$ 24,911	$ 307	$ 62,188	$ 3,610

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

FORMFACTOR, INC.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands, except shares)
(Unaudited)

	Shares of Common Stock	Common Stock	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Income (Deficit)	Total
	Three Months Ended September 28, 2024					
Balances, June 29, 2024	77,281,052	$ 77	$ 863,283	$ (7,948)	$ 92,504	$ 947,916
Issuance of common stock under the Employee Stock Purchase Plan	143,975	—	4,800	—	—	4,800
Issuance of common stock pursuant to vesting of restricted stock units, net of stock withheld for tax	428,694	—	(14,421)	—	—	(14,421)
Purchase and retirement of common stock through repurchase program	(405,732)	—	(16,909)	—	—	(16,909)
Stock-based compensation	—	—	8,713	—	—	8,713
Other comprehensive income	—	—	—	6,175	—	6,175
Net income	—	—	—	—	18,736	18,736
Balances, September 28, 2024	77,447,989	$ 77	$ 845,466	$ (1,773)	$ 111,240	$ 955,010
	Nine Months Ended September 28, 2024					
Balances, December 30, 2023	77,376,903	$ 77	$ 861,448	$ (4,052)	$ 51,331	$ 908,804
Issuance of common stock under the Employee Stock Purchase Plan	340,989	—	9,748	—	—	9,748
Issuance of common stock pursuant to vesting of restricted stock units, net of stock withheld for tax	619,780	—	(17,990)	—	—	(17,990)
Purchase and retirement of common stock through repurchase program	(889,683)	—	(37,211)	—	—	(37,211)
Stock-based compensation	—	—	29,471	—	—	29,471
Other comprehensive income	—	—	—	2,279	—	2,279
Net income	—	—	—	—	59,909	59,909
Balances, September 28, 2024	77,447,989	$ 77	$ 845,466	$ (1,773)	$ 111,240	$ 955,010
	Three Months Ended September 30, 2023					
Balances, July 1, 2023	77,184,012	$ 77	$ 867,517	$ (4,445)	$ (28,886)	$ 834,263
Issuance of common stock under the Employee Stock Purchase Plan	153,135	—	3,798	—	—	3,798
Issuance of common stock pursuant to vesting of restricted stock units, net of stock withheld for tax	502,170	1	(8,894)	—	—	(8,893)
Stock-based compensation	—	—	11,213	—	—	11,213
Other comprehensive loss	—	—	—	(4,064)	—	(4,064)
Net income	—	—	—	—	4,371	4,371
Balances, September 30, 2023	77,839,317	$ 78	$ 873,634	$ (8,509)	$ (24,515)	$ 840,688
	Nine Months Ended September 30, 2023					
Balances, December 31, 2022	76,914,590	$ 77	$ 844,842	$ (5,578)	$ (31,056)	$ 808,285
Issuance of common stock under the Employee Stock Purchase Plan	363,190	—	8,822	—	—	8,822
Issuance of common stock pursuant to vesting of restricted stock units, net of stock withheld for tax	561,537	1	(9,350)	—	—	(9,349)
Stock-based compensation	—	—	29,320	—	—	29,320
Other comprehensive loss	—	—	—	(2,931)	—	(2,931)
Net income	—	—	—	—	6,541	6,541
Balances, September 30, 2023	77,839,317	$ 78	$ 873,634	$ (8,509)	$ (24,515)	$ 840,688

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

FORMFACTOR, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Nine Months Ended	
	September 28, 2024	**September 30, 2023**
Cash flows from operating activities:		
Net income	$ 59,909	$ 6,541
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	22,197	22,880
Amortization	1,920	6,043
Reduction in the carrying amount of right-of-use assets	5,129	5,556
Stock-based compensation expense	29,550	29,333
Deferred income tax benefit	(14,044)	(6,283)
Provision for excess and obsolete inventories	10,052	12,566
Gain on sale of business	(20,581)	—
Other adjustments to reconcile net income to net cash provided by operating activities	(2,178)	1,375
Changes in assets and liabilities:		
Accounts receivable	(13,300)	(7,796)
Inventories	(7,573)	(8,910)
Prepaid expenses and other current assets	(256)	(1,761)
Other assets	295	804
Accounts payable	(8,780)	474
Accrued liabilities	7,368	(5,268)
Other liabilities	9,331	467
Deferred revenues	7,883	(12,915)
Deferred grant	—	18,000
Operating lease liabilities	(5,301)	(5,754)
Net cash provided by operating activities	81,621	55,352
Cash flows from investing activities:		
Acquisition of property, plant and equipment	(30,773)	(46,094)
Proceeds from sale of business	21,585	—
Purchases of marketable securities	(109,727)	(96,913)
Purchase of promissory note receivable	(1,500)	—
Proceeds from maturities and sales of marketable securities	94,263	93,013
Net cash used in investing activities	(26,152)	(49,994)
Cash flows from financing activities:		
Proceeds from issuances of common stock	9,748	8,822
Purchase of common stock through stock repurchase program	(37,211)	—
Tax withholdings related to net share settlements of equity awards	(17,990)	(9,349)
Payments on term loan	(803)	(781)
Net cash used in financing activities	(46,256)	(1,308)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	3	(3,324)
Net increase in cash, cash equivalents and restricted cash	9,216	726
Cash, cash equivalents and restricted cash, beginning of year	181,273	112,982
Cash, cash equivalents and restricted cash, end of period	$ 190,489	$ 113,708

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

FORMFACTOR, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Nine Months Ended	
	September 28, 2024	September 30, 2023
Non-cash investing and financing activities:		
Decrease in accounts payable and accrued liabilities related to property, plant and equipment purchases	$ 2,915	$ 6,222
Operating lease, right-of-use assets obtained in exchange for lease obligations	—	4,728
Supplemental disclosure of cash flow information:		
Cash paid for income taxes, net	$ 13,114	$ 12,064
Cash paid for interest	298	317
Operating cash outflows from operating leases	6,960	6,836
Reconciliation of cash, cash equivalents and restricted cash:		
Cash and cash equivalents	$ 184,506	$ 108,731
Restricted cash, current	3,773	1,171
Restricted cash	2,210	2,146
Cash and cash equivalents included in Assets held-for-sale	—	1,660
Total cash, cash equivalents and restricted cash	$ 190,489	$ 113,708

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

FORMFACTOR, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

Note 1 — Basis of Presentation and Significant Accounting Policies

Basis of Presentation

The accompanying condensed consolidated financial information of FormFactor, Inc. is unaudited and has been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) and pursuant to the rules and regulations of the Securities and Exchange Commission (“SEC”). However, such information reflects all adjustments, consisting only of normal recurring adjustments, which are, in the opinion of management, necessary for a fair presentation of the financial position, results of operations and cash flows for the interim periods. The condensed consolidated financial statements included herein should be read in conjunction with the consolidated financial statements and the notes thereto included in our 2023 Annual Report on Form 10-K filed with the SEC on February 23, 2024. The results of operations for the interim periods presented are not necessarily indicative of the results to be expected for the full year.

Fiscal Year

We operate on a 52/53 week fiscal year, whereby the fiscal year ends on the last Saturday of December. Fiscal 2024 and 2023 each contain 52 weeks and the nine months ended September 28, 2024 and September 30, 2023 each contained 39 weeks. Fiscal 2024 will end on December 28, 2024.

Significant Accounting Policies

Our significant accounting policies have not changed during the nine months ended September 28, 2024 from those disclosed in our Annual Report on Form 10-K for the year ended December 30, 2023.

New Accounting Pronouncements

ASU 2023-09

In December 2023, the Financial Accounting Standards Board (the “FASB”) issued Accounting Standards Update (“ASU”) 2023-09, “ *Income Taxes (Topic 740): Improvements to Income Tax Disclosures.”* The ASU includes requirements that an entity disclose specific categories in the rate reconciliation and provide additional information for reconciling items that are greater than five percent of the amount computed by multiplying pretax income by the applicable statutory income tax rate. The standard also requires that entities disclose income before income taxes and provision for income taxes disaggregated between domestic and foreign. This ASU is effective for annual periods beginning after December 15, 2024, with early adoption permitted. We are currently evaluating the effect the adoption of this ASU may have on our disclosures.

ASU 2023-07

In November 2023, the FASB issued ASU 2023-07, “ *Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures* .” The ASU includes requirements that an entity disclose the title of the chief operating decision maker (“CODM”) and on an interim and annual basis, significant segment expenses and the composition of other segment items for each segment's reported profit. The standard also permits disclosure of additional measures of segment profit. This ASU is effective for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024, on a retrospective basis, with early adoption permitted. We are currently evaluating the effect the adoption of this ASU may have on our disclosures.

Note 2 — Concentration of Credit and Other Risks

Each of the following customers accounted for 10% or more of our revenues for the periods indicated:

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
SK hynix Inc.	18.1 %	*	17.8 %	*
Intel Corporation	17.1 %	17.1 %	16.6 %	17.2 %
Samsung Electronics Co., LTD.	*	11.2 %	*	*
	35.2 %	28.3 %	34.4 %	17.2 %

* Less than 10% of revenues.

At September 28, 2024 and December 30, 2023, two customers accounted for 24.7% and 10.2% and two customers accounted for 17.8% and 11.0% of gross accounts receivable, respectively.

Note 3 — Inventories, net

Inventories are stated at the lower of cost (principally standard cost, which approximates actual cost on a first in, first out basis) or net realizable value.

Inventories, net, consisted of the following (in thousands):

	September 28, 2024	December 30, 2023
Raw materials	$ 43,488	$ 50,808
Work-in-progress	41,383	39,336
Finished goods	20,503	21,541
	$ 105,374	$ 111,685

Note 4 — Divestitures

China Operations Divestiture

On February 7, 2024, the Company entered into a definitive agreement to sell its China operations to Grand Junction Semiconductor Pte. Ltd. ("Grand Junction") for $25.0 million in cash, subject to customary purchase price adjustments, and establish an exclusive distribution and partnership agreement to continue sales and support of our products in the region. The following subsidiaries were included as part of the divestiture: Microprobe Hong Kong Limited, FormFactor Technology (Suzhou) Co. Ltd., Cascade Microtech Singapore Pte, Ltd, and FormFactor International (Shanghai) Trading Co., Ltd. These entities supported both the Probe Cards and Systems segments.

On February 26, 2024, we closed on the sale of the operations in China to Grand Junction and received total consideration of $ 21.4 million, net of cash transferred and transaction expenses, and after customary adjustments for indebtedness and changes in net working capital. The disposition of the China operations did not meet the criteria to be classified as a discontinued operation in the Company's financial statements because the disposition did not represent a strategic shift that had, or will have, a major effect on the Company's operations and financial results.

The following table summarizes the fair value of the sale proceeds received in connection with the divestiture (in thousands):

	February 26, 2024
Gross purchase price	$ 25,000
Working capital adjustment	159
Cash transferred to the buyer at closing	(2,743)
Direct costs to sell	(986)
Fair value of sale consideration, net	$ 21,430

The carrying amount of net assets associated with the China operations was approximately $ 1.2 million. The major classes of assets and liabilities sold consisted of the following (in thousands):

	February 26, 2024
ASSETS	
Accounts receivable, net	$ 1,174
Inventories, net	3,729
Other current assets	391
Total current assets	5,294
Property, plant and equipment, net	1,283
Goodwill	1,117
Other assets	3,029
Total assets	$ 10,723
LIABILITIES	
Deferred Revenue	$ 3,739
Other current liabilities	1,546
Other liabilities	4,283
Total liabilities	$ 9,568

As a result of the divestiture, the Company recognized a pre-tax gain of $ 20.3 million. The Company recorded income tax expense associated with the divestiture of approximately $3.3 million.

FRT Divestiture

On September 18, 2023, the Company announced entry into a definitive agreement to sell its FRT Metrology ("FRT") business to Camtek Ltd. ("Camtek") for $100 million in cash, subject to customary purchase price adjustments. The Company acquired FRT GmbH in fiscal 2019 for total consideration of $24.4 million, net of cash acquired. Headquartered in Bergisch Gladbach, Germany, the FRT business is a leading supplier of high-precision metrology solutions for the Advanced Packaging and Silicon Carbide markets, and was part of the Company's Systems segment.

On November 1, 2023, we closed on the sale of the FRT business to Camtek and received net cash proceeds of $ 100.1 million, net of cash transferred and transaction expenses, and after customary adjustments for indebtedness and changes in net working capital.

The following table summarizes the fair value of the sale proceeds received in connection with the divestiture (in thousands):

	November 1, 2023
Gross purchase price	$ 99,100
Estimated working capital adjustment	4,266
Cash transferred to the buyer at closing	(2,049)
Direct costs to sell	(1,225)
Fair value of sale consideration	$ 100,092

The carrying amount of net assets associated with the FRT business was approximately $ 26.8 million. The major classes of assets and liabilities sold consisted of the following (in thousands):

		November 1, 2023
ASSETS		
Accounts receivable, net	$	7,738
Inventories, net		6,446
Other current assets		635
Total current assets		14,819
Intangibles, net		6,897
Goodwill		10,660
Other assets		1,612
Total assets	$	33,988
LIABILITIES		
Current liabilities	$	4,300
Other liabilities		2,856
Total liabilities	$	7,156

As a result of the divestiture, the Company recognized a pre-tax gain of $ 73.3 million. The Company recorded income tax expense associated with the divestiture of approximately $6.0 million.

Note 5 — Goodwill and Intangible Assets

Goodwill by reportable segment was as follows (in thousands):

		Probe Cards		Systems		Total
Goodwill, as of December 31, 2022	$	178,424	$	33,020	$	211,444
Reduction - FRT divestiture		—		(10,660)		(10,660)
Foreign currency translation		—		306		306
Goodwill, as of December 30, 2023		178,424		22,666		201,090
Reduction - China divestiture		(1,055)		(62)		(1,117)
Foreign currency translation		—		164		164
Goodwill, as of September 28, 2024	$	177,369	$	22,768	$	200,137

We have not recorded goodwill impairments for the nine months ended September 28, 2024.

Intangible assets were as follows (in thousands):

	September 28, 2024						December 30, 2023					
Intangible Assets		Gross		Accumulated Amortization		Net		Gross		Accumulated Amortization		Net
Existing developed technologies	$	159,724	$	149,923	$	9,801	$	159,593	$	148,445	$	11,148
Trade name		7,823		7,776		47		7,808		7,728		80
Customer relationships		48,060		47,291		769		48,022		46,712		1,310
In-process research and development		400		—		400		400		—		400
	$	216,007	$	204,990	$	11,017	$	215,823	$	202,885	$	12,938

Amortization expense was included in our Condensed Consolidated Statements of Income as follows (in thousands):

	Three Months Ended				Nine Months Ended			
		September 28, 2024		September 30, 2023		September 28, 2024		September 30, 2023
Cost of revenues	$	449	$	837	$	1,347	$	2,506
Selling, general and administrative		191		440		573		3,537
	$	640	$	1,277	$	1,920	$	6,043

The estimated future amortization of definite-lived intangible assets, excluding in-process research and development, is as follows (in thousands):

Fiscal Year	Amount
Remainder of 2024	$ 640
2025	2,330
2026	1,630
2027	1,630
2028	1,630
Thereafter	2,757
	$ 10,617

Note 6 — Accrued Liabilities

Accrued liabilities consisted of the following (in thousands):

	September 28, 2024	December 30, 2023
Accrued compensation and benefits	$ 33,599	$ 20,073
Accrued warranty	3,610	3,177
Accrued income and other taxes	2,851	8,205
Accrued employee stock purchase plan contributions withheld	2,535	4,263
Other accrued expenses	3,913	5,319
	$ 46,508	$ 41,037

Note 7 — Fair Value and Derivative Instruments

Whenever possible, the fair values of our financial assets and liabilities are determined using quoted market prices of identical securities or quoted market prices of similar securities from active markets. The three levels of inputs that may be used to measure fair value are as follows:

- Level 1 valuations are obtained from real-time quotes for transactions in active exchange markets involving identical securities;
- Level 2 valuations utilize significant observable inputs, such as quoted prices for similar assets or liabilities, quoted prices near the reporting date in markets that are less active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and
- Level 3 valuations utilize unobservable inputs to the valuation methodology and include our own data about assumptions market participants would use in pricing the asset or liability based on the best information available under the circumstances.

We did not have any transfers of assets or liabilities measured at fair value on a recurring basis to or from Level 1, Level 2 or Level 3 during the nine months ended September 28, 2024 or the year ended December 30, 2023.

The carrying values of Cash, Accounts receivable, net, Restricted cash, Prepaid expenses and other current assets, Accounts payable, and Accrued liabilities approximate fair value due to their short maturities.

No changes were made to our valuation techniques during the first nine months of fiscal 2024.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

Assets and liabilities measured at fair value on a recurring basis were as follows (in thousands):

September 28, 2024	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$ 125,293	$ —	$ —	$ 125,293
U.S. treasuries	1,198	—	—	1,198
	126,491	—	—	126,491
Marketable securities:				
U.S. treasuries	65,646	—	—	65,646
U.S. agency securities	—	13,851	—	13,851
Corporate bonds	—	84,512	—	84,512
Commercial paper	—	5,952	—	5,952
	65,646	104,315	—	169,961
Foreign exchange derivative contracts	—	505	—	505
Promissory note receivable	—	—	1,500	1,500
Interest rate swap derivative contracts	—	1,618	—	1,618
Total assets	$ 192,137	$ 106,438	$ 1,500	$ 300,075

December 30, 2023	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$ 110,980	$ —	$ —	$ 110,980
U.S. treasuries	4,581	—	—	4,581
	115,561	—	—	115,561
Marketable securities:				
U.S. treasuries	45,837	—	—	45,837
U.S. agency securities	—	10,003	—	10,003
Corporate bonds	—	81,350	—	81,350
Commercial paper	—	13,317	—	13,317
	45,837	104,670	—	150,507
Foreign exchange derivative contracts	—	284	—	284
Interest rate swap derivative contracts	—	1,989	—	1,989
Total assets	$ 161,398	$ 106,943	$ —	$ 268,341
Liabilities:				
Foreign exchange derivative contracts	$ —	$ (30)	$ —	$ (30)
Total liabilities	$ —	$ (30)	$ —	$ (30)

Cash Equivalents

The fair value of our cash equivalents is determined based on quoted market prices for similar or identical securities.

Marketable Securities

We classify our marketable securities as available-for-sale and value them utilizing a market approach. Our investments are priced by pricing vendors who provide observable inputs for their pricing without applying significant judgment. Broker pricing is used mainly when a quoted price is not available, the investment is not priced by our pricing vendors or when a broker price is more reflective of fair value. Our broker-priced investments are categorized as Level 2 investments because fair value is based on similar assets without applying significant judgments. In addition, all investments have a sufficient trading volume to demonstrate that the fair value is appropriate.

Unrealized gains and losses were immaterial and were recorded as a component of Accumulated other comprehensive loss in our Condensed Consolidated Balance Sheets. We did not have any other-than-temporary unrealized gains or losses at either period end included in these financial statements.

Interest Rate Swap

The fair value of our interest rate swap contract is determined at the end of each reporting period based on valuation models that use interest rate yield curves as inputs. For accounting purposes, our interest rate swap contract qualifies for, and is designated as a cash flow hedge. The hedged risk is the interest rate exposure to changes in interest payments attributable to changes in our variable-rate interest over the interest rate swap term. The changes in cash flows of the interest rate swap are expected to exactly offset changes in cash flows of the variable-rate debt. Cash settlements, in the form of cash payments or cash receipts, are recognized as a component of interest expense. The cash flows associated with the interest rate swaps are reported in Net cash provided by operating activities in our Condensed Consolidated Statements of Cash Flows and the fair value of the interest rate swap contracts are recorded within Prepaid expenses and other current assets and Other assets in our Condensed Consolidated Balance Sheets.

Foreign Exchange Derivative Contracts

We operate and sell our products in various global markets. As a result, we are exposed to changes in foreign currency exchange rates. We utilize foreign currency forward contracts to hedge against future movements in foreign exchange rates that affect certain existing foreign currency denominated assets and liabilities and forecasted foreign currency revenue and expense transactions. Under this program, our strategy is to have increases or decreases in our foreign currency exposures mitigated by gains or losses on the foreign currency forward contracts in order to mitigate the risks and volatility associated with foreign currency transaction gains or losses.

We do not use derivative financial instruments for speculative or trading purposes. For accounting purposes, certain of our foreign currency forward contracts are not designated as hedging instruments and, accordingly, we record the fair value of these contracts as of the end of our reporting period in our Condensed Consolidated Balance Sheets with changes in fair value recorded within Other income, net in our Condensed Consolidated Statement of Income for both realized and unrealized gains and losses. Certain of our foreign currency forward contracts are designated as cash flow hedges, and, accordingly, we record the fair value of these contracts as of the end of our reporting period in our Condensed Consolidated Balance Sheets with changes in fair value recorded as a component of Accumulated other comprehensive loss and reclassified into earnings in the same period in which the hedged transaction affects earnings, and in the same line item on the Condensed Consolidated Statements of Income as the impact of the hedge transaction.

The fair value of our foreign exchange derivative contracts was determined based on current foreign currency exchange rates and forward points. All of our foreign exchange derivative contracts outstanding at September 28, 2024 will mature by the third quarter of fiscal 2025.

The following table provides information about our foreign currency forward contracts outstanding as of September 28, 2024 (in thousands):

Currency	Contract Position	Contract Amount (Local Currency)	Contract Amount (U.S. Dollars)
Euro	Buy	29,925	$ 33,028
Japanese Yen	Sell	2,863,220	20,203
Korean Won	Buy	2,898,328	2,202
Taiwan Dollar	Sell	113,723	3,598

Our foreign currency contracts are classified within Level 2 of the fair value hierarchy as they are valued using pricing models that utilize observable market inputs.

Assets and Liabilities Measured at Fair Value on a Non-Recurring Basis

We measure and report our non-financial assets such as Property, plant and equipment, Goodwill and Intangible assets at fair value on a non-recurring basis if we determine these assets to be impaired or in the period when we make a business acquisition. There were no assets or liabilities measured at fair value on a nonrecurring basis during the three and nine months ended September 28, 2024 or September 30, 2023.

Note 8 — Warranty

We offer warranties on certain products and record a liability for the estimated future costs associated with warranty claims at the time revenue is recognized. The warranty liability is based upon historical experience and our estimate of the level of future costs. While we engage in product quality programs and processes, our warranty obligation is affected by product failure rates, material usage and service delivery costs. We regularly monitor product returns for warranty and maintain a reserve for the related expenses based upon our historical experience and any specifically identified failures. As we sell new products to our customers, we must exercise considerable judgment in estimating the expected failure rates. This estimating process is based on historical experience of similar products, as well as various other assumptions that we believe to be reasonable under the circumstances. We provide for the estimated cost of product warranties at the time revenue is recognized as a component of Cost of revenues in our Condensed Consolidated Statement of Income.

Changes in our warranty liability were as follows (in thousands):

	Nine Months Ended	
	September 28, 2024	September 30, 2023
Balance at beginning of year	$ 3,177	$ 4,199
Accruals	6,918	6,426
Settlements	(6,485)	(5,535)
Reclassification - Liabilities held-for-sale	—	(106)
Balance at end of period	$ 3,610	$ 4,984

Note 9 — Property, Plant and Equipment, net

Property, plant and equipment, net consisted of the following (in thousands):

	September 28, 2024	December 30, 2023
Land	$ 17,124	$ 17,124
Building and building improvements	46,375	46,526
Machinery and equipment	302,638	286,215
Computer equipment and software	47,562	46,866
Furniture and fixtures	7,581	7,490
Leasehold improvements	99,288	91,063
Sub-total	520,568	495,284
Less: Accumulated depreciation and amortization	(377,644)	(358,021)
Net property, plant and equipment	142,924	137,263
Construction-in-progress	61,184	67,136
Total	$ 204,108	$ 204,399

Note 10 — Stockholders' Equity and Stock-Based Compensation

Common Stock Repurchase Programs

On May 20, 2022, our Board of Directors authorized a two-year program to repurchase up to $75.0 million of outstanding common stock to offset potential dilution from issuance of common stock under our stock-based compensation programs. During fiscal 2022 and fiscal 2023, we repurchased and retired 1,700,893 shares of common stock for $56.4 million and 504,352 shares of common stock for $18.6 million, respectively, utilizing the remaining shares available for repurchase under the program.

On October 30, 2023, our Board of Directors authorized an additional two-year program to repurchase up to $75.0 million of outstanding common stock, with the primary purpose of offsetting potential dilution from issuance of common stock under our stock-based compensation programs. This share repurchase program will expire on October 30, 2025. During fiscal 2023 we repurchased and retired 32,020 shares of common stock for $1.2 million. During the nine months ended September 28, 2024, we repurchased and retired 889,683 shares of common stock for $37.2 million, and as of September 28, 2024, $36.6 million remained available for future repurchases.

Our policy related to repurchases of our common stock is to charge the excess of cost over par value to additional paid-in capital once the shares are retired. Share repurchases are subject to an excise tax enabled by the Inflation Reduction Act that is generally 1% of the fair market value of the shares repurchased at the time of the repurchase, net of the fair market value of certain new stock issuances during the same taxable year. Certain exceptions apply to the excise tax. The excise tax incurred reduces the amount available under the repurchase programs, as applicable, and is included in the cost of shares repurchased in the Condensed Consolidated Statement of Stockholders Equity. All repurchases were made in compliance with Rule 10b-18 under the Securities Exchange Act of 1934, as amended.

Restricted Stock Units

Restricted stock unit (“RSU”) activity under our equity incentive plan was as follows:

	Units	Weighted Average Grant Date Fair Value
RSUs at December 30, 2023	2,165,729	$ 35.85
Awards granted	882,718	44.73
Awards vested	(981,072)	36.14
Awards forfeited	(178,252)	43.90
RSUs at September 28, 2024	1,889,123	38.97

Performance Restricted Stock Units

We may grant Performance RSUs (“PRSUs”) to certain executives, which vest based upon us achieving certain market performance criteria.

On August 5, 2024, we granted 117,624 PRSUs to certain senior executives for a total grant date fair value of $ 5.8 million which will be recognized ratably over the requisite service period. The number of PRSUs granted represents the “target” number of units that can be earned based on the performance criteria. The performance criteria are based on Total Shareholder Returns (“TSR”) for the period of July 1, 2024 - June 30, 2027, relative to the TSR of the companies identified as being part of the S&P Semiconductors Select Industry Index (FormFactor peer companies) as of the grant date.

Of the 197,128 PRSUs granted in fiscal 2021, 56,685 shares were forfeited during the requisite service period, resulting in 140,443 shares vesting in 2024. These shares achieved 146% TSR performance, which resulted in an additional 64,525 shares issued in fiscal 2024 in excess of the target number of units related to the fiscal 2021 PRSU grant.

PRSUs are included as part of the RSU activity above.

Employee Stock Purchase Plan

Information related to activity under our Employee Stock Purchase Plan (“ESPP”) was as follows:

	Nine Months Ended September 28, 2024
Shares issued	340,989
Weighted average per share purchase price	$ 28.59
Weighted average per share discount from the fair value of our common stock on the date of issuance	$ (16.43)

Stock-Based Compensation

Stock-based compensation was included in our Condensed Consolidated Statements of Income as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
Cost of revenues	$ 1,934	$ 1,376	$ 5,794	$ 4,801
Research and development	2,679	3,173	7,906	7,908
Selling, general and administrative	4,323	6,290	15,850	16,624
Total stock-based compensation	$ 8,936	$ 10,839	$ 29,550	$ 29,333

Unrecognized Compensation Costs

At September 28, 2024, the unrecognized stock-based compensation was as follows (dollars in thousands):

	Unrecognized Expense	Average Expected Recognition Period in Years
Restricted stock units	$ 50,506	2.07
Performance restricted stock units	10,497	2.09
Employee stock purchase plan	1,894	0.35
Total unrecognized stock-based compensation expense	$ 62,897	2.02

Note 11 — Net Income per Share

The following table reconciles the shares used in calculating basic net income per share and diluted net income per share (in thousands):

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
Weighted-average shares used in computing basic net income per share	77,406	77,571	77,364	77,265
Add potentially dilutive securities	1,033	841	1,131	595
Weighted-average shares used in computing diluted net income per share	78,439	78,412	78,495	77,860
Securities not included as they would have been antidilutive	170	172	144	94

Note 12 — Commitments and Contingencies

Leases

See Note 13, *Leases*.

Contractual Obligations and Commitments

Our contractual obligations and commitments have not materially changed as of September 28, 2024 from those disclosed in our Annual Report on Form 10-K for the year ended December 30, 2023.

Legal Matters

From time to time, we are subject to legal proceedings and claims in the ordinary course of business, the outcomes of which cannot be estimated with certainty. Our ability to estimate the outcomes may change in the near term and the effect of any such change could have a material adverse effect on our financial position, results of operations or cash flows.

Note 13 — Leases

We lease real estate space under non-cancelable operating lease agreements for commercial and industrial space, as well as for a portion of our corporate headquarters located in Livermore, California. Our leases have remaining terms of 1 year to 10 years, and some leases include options to extend up to 20 years. We also have operating leases for automobiles with remaining lease terms of 1 year to 3 years. We did not include any of our renewal options in our lease terms for calculating our lease liability as the renewal options allow us to maintain operational flexibility and we are not reasonably certain we will exercise these options at this time. The weighted-average remaining lease term for our operating leases was 4 years as of September 28, 2024 and the weighted-average discount rate was 4.70%.

The components of lease expense were as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
Lease expense:				
Operating lease expense	$ 2,180	$ 2,157	$ 6,360	$ 6,233
Short-term lease expense	102	126	247	419
Variable lease expense	1,112	625	2,974	1,854
	$ 3,394	$ 2,908	$ 9,581	$ 8,506

Future minimum payments under our non-cancelable operating leases were as follows as of September 28, 2024 (in thousands):

Fiscal Year	Amount
Remainder of 2024	$ 2,294
2025	9,185
2026	7,695
2027	7,259
2028	3,935
Thereafter	1,449
Total minimum lease payments	31,817
Less: interest	(3,574)
Present value of net minimum lease payments	28,243
Less: current portion	(8,512)
Total long-term operating lease liabilities	$ 19,731

Note 14 — Revenue

Transaction price allocated to the remaining performance obligations: On September 28, 2024, we had $23.9 million of remaining performance obligations, which were comprised of deferred service contracts, extended warranty contracts, and contracts with overtime revenue recognition that are not yet delivered. We expect to recognize approximately 26.7% of our remaining performance obligations as revenue in the remainder of fiscal 2024, approximately 48.8% in fiscal 2025, and approximately 24.5% in fiscal 2026 and thereafter. The foregoing excludes the value of other remaining performance obligations as they have original durations of one year or less, and also excludes information about variable consideration allocated entirely to a wholly unsatisfied performance obligation.

Contract balances: The timing of revenue recognition may differ from the timing of invoicing to customers. Accounts receivable is recorded at the invoiced amount, net of an allowance for credit losses. A receivable is recognized in the period we deliver goods or provide services or when our right to consideration is unconditional. A contract asset is recorded when we have performed under the contract but our right to consideration is conditional on something other than the passage of time. Contract assets as of September 28, 2024 and December 30, 2023 were $6.8 million and $3.8 million, respectively, and are reported on the Condensed Consolidated Balance Sheets as a component of Prepaid expenses and other current assets.

Contract liabilities include payments received and payments due in advance of performance under a contract and are satisfied as the associated revenue is recognized. Contract liabilities are reported on the Condensed Consolidated Balance Sheets at the end of each reporting period as a component of Deferred revenue and Other liabilities. Contract liabilities as of September 28, 2024 and December 30, 2023 were $22.1 million and $18.0 million, respectively. During the nine months ended September 28, 2024, we recognized $12.7 million of revenue that was included in contract liabilities as of December 30, 2023. During the nine months ended September 28, 2024, we divested contract liabilities of $1.7 million as of December 30, 2023 with the divestiture of our China operations.

Costs to obtain a contract: We generally expense sales commissions when incurred as a component of Selling, general and administrative expense, as the amortization period is typically less than one year.

Revenue by category: Refer to Note 15, *Operating Segments and Enterprise-Wide Information* , for further details.

Note 15 — Operating Segments and Enterprise-Wide Information

Our CODM is our Chief Executive Officer, who reviews operating results to make decisions about allocating resources and assessing performance for the entire company. We operate in two reportable segments consisting of the Probe Cards segment and the Systems segment. The following table summarizes the operating results by reportable segment (dollars in thousands):

	Three Months Ended							
	September 28, 2024				September 30, 2023			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Revenues	$ 172,174	$ 35,743	$ —	$ 207,917	$ 128,339	$ 43,236	$ —	$ 171,575
Gross profit	72,855	14,838	(2,988)	84,705	49,383	22,396	(2,494)	69,285
Gross margin	42.3 %	41.5 %		40.7 %	38.5 %	51.8 %		40.4 %

	Nine Months Ended							
	September 28, 2024				September 30, 2023			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Revenues	$ 475,667	$ 98,449	$ —	$ 574,116	$ 370,970	$ 123,969	$ —	$ 494,939
Gross profit	198,885	43,521	(8,063)	234,343	135,118	64,266	(8,738)	190,646
Gross margin	41.8 %	44.2 %		40.8 %	36.4 %	51.8 %		38.5 %

Operating results provide useful information to our management for assessment of our performance and results of operations. Certain components of our operating results are utilized to determine compensation along with other measures.

Corporate and Other includes unallocated expenses relating to amortization of intangible assets, inventory and fixed asset fair value adjustments due to acquisitions, share-based compensation, and restructuring charges which are not used in evaluating the results of, or in allocating resources to, our reportable segments.

Certain revenue category information by reportable segment was as follows (in thousands):

	Three Months Ended					
	September 28, 2024			September 30, 2023		
	Probe Cards	Systems	Total	Probe Cards	Systems	Total
Market:						
Foundry & Logic	$ 107,446	$ —	$ 107,446	$ 96,366	$ —	$ 96,366
DRAM	60,184	—	60,184	27,478	—	27,478
Flash	4,544	—	4,544	4,495	—	4,495
Systems	—	35,743	35,743	—	43,236	43,236
Total	$ 172,174	$ 35,743	$ 207,917	$ 128,339	$ 43,236	$ 171,575
Timing of revenue recognition:						
Products transferred at a point in time	$ 166,968	$ 34,292	$ 201,260	$ 127,731	$ 41,776	$ 169,507
Products and services transferred over time	5,206	1,451	6,657	608	1,460	2,068
Total	$ 172,174	$ 35,743	$ 207,917	$ 128,339	$ 43,236	$ 171,575
Geographical region:						
United States	$ 45,015	$ 10,000	$ 55,015	$ 31,182	$ 12,543	$ 43,725
Taiwan	42,105	5,817	47,922	39,155	3,820	42,975
South Korea	40,870	858	41,728	31,805	3,270	35,075
China	27,367	7,146	34,513	10,779	10,971	21,750
Japan	3,734	4,322	8,056	2,976	3,988	6,964
Europe	2,149	5,607	7,756	2,583	6,713	9,296
Singapore	4,726	749	5,475	2,752	925	3,677
Malaysia	4,458	822	5,280	5,778	186	5,964
Rest of World	1,750	422	2,172	1,329	820	2,149
Total	$ 172,174	$ 35,743	$ 207,917	$ 128,339	$ 43,236	$ 171,575

	Nine Months Ended											
	September 28, 2024						September 30, 2023					
	Probe Cards		Systems		Total		Probe Cards		Systems		Total	
Market:												
Foundry & Logic	$	297,874	$	—	$	297,874	$	279,895	$	—	$	279,895
DRAM		164,122		—		164,122		77,832		—		77,832
Flash		13,671		—		13,671		13,243		—		13,243
Systems		—		98,449		98,449		—		123,969		123,969
Total	$	475,667	$	98,449	$	574,116	$	370,970	$	123,969	$	494,939
Timing of revenue recognition:												
Products transferred at a point in time	$	464,668	$	94,638	$	559,306	$	368,939	$	116,981	$	485,920
Products and services transferred over time		10,999		3,811		14,810		2,031		6,988		9,019
Total	$	475,667	$	98,449	$	574,116	$	370,970	$	123,969	$	494,939
Geographical region:												
United States	$	120,046	$	28,626	$	148,672	$	86,954	$	37,175	$	124,129
South Korea		140,233		1,319		141,552		77,832		5,881		83,713
Taiwan		109,476		13,136		122,612		103,368		9,448		112,816
China		56,364		18,849		75,213		45,771		26,586		72,357
Europe		8,927		16,493		25,420		8,424		21,114		29,538
Japan		12,594		11,615		24,209		14,014		11,859		25,873
Singapore		12,354		2,401		14,755		7,670		4,170		11,840
Malaysia		11,150		2,595		13,745		22,279		1,632		23,911
Rest of the world		4,523		3,415		7,938		4,658		6,104		10,762
Total	$	475,667	$	98,449	$	574,116	$	370,970	$	123,969	$	494,939

Item 2. *Management's Discussion and Analysis of Financial Condition and Results of Operations*

Cautionary Statement Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of the Securities Exchange Act of 1934 and the Securities Act of 1933, which are subject to risks and uncertainties. The forward-looking statements include statements concerning, among other things, our business strategy, financial and operating results, gross margins, liquidity and capital expenditure requirements and impact of accounting standards. In some cases, you can identify these statements by forward-looking words, such as "may," "might," "will," "could," "should," "expect," "plan," "anticipate," "believe," "estimate," "predict," "intend" and "continue," the negative or plural of these words and other comparable terminology.

The forward-looking statements are only predictions based on our current expectations and our projections about future events. All forward-looking statements included in this Quarterly Report on Form 10-Q are based upon information available to us as of the filing date of this Quarterly Report on Form 10-Q. You should not place undue reliance on these forward-looking statements. We have no obligation to update any of these statements. These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from those expressed or implied by these statements, including risks related to general market trends, the benefits of acquisitions and investments, our supply chain, uncertainties related to global, regional or national public health-related crises and the impact of our responses to them, the interpretation and impacts of changes in export controls and other trade barriers, military conflicts, political volatility and similar factors, our ability to execute our business strategy and other risks discussed in the section titled "Risk Factors" and elsewhere in our Annual Report on Form 10-K for the year ended December 30, 2023 and in this Quarterly Report on Form 10-Q. You should carefully consider the numerous risks and uncertainties described under these sections.

The following discussion and analysis should be read in conjunction with our condensed consolidated financial statements and the accompanying notes contained in this Quarterly Report on Form 10-Q. Unless expressly stated or the context otherwise requires, the terms "we," "our," "us" and "FormFactor" refer to FormFactor, Inc. and its subsidiaries.

Overview

FormFactor, Inc., headquartered in Livermore, California, is a leading provider of essential test and measurement technologies along the full semiconductor product lifecycle — from characterization, modeling, reliability, and design de-bug, to qualification and production test. We provide a broad range of high-performance probe cards, analytical probes, probe stations, thermal systems, and cryogenic systems to both semiconductor companies and scientific institutions. Our products provide electrical and optical information from a variety of semiconductor and electro-optical devices and integrated circuits from early research, through development, to high-volume production. Customers use our products and services to accelerate profitability by optimizing device performance and advancing yield knowledge.

We operate in two reportable segments consisting of the Probe Cards segment and the Systems segment. Sales of our probe cards and analytical probes are included in the Probe Cards segment, while sales of our probe stations, thermal systems and cryogenic systems are included in the Systems segment.

We generated net income of $59.9 million in the first nine months of fiscal 2024 as compared to $6.5 million in the first nine months of fiscal 2023. Beginning in the second quarter of fiscal 2024, certain areas of the semiconductor industry strengthened, increasing demand in most markets within our Probe Cards segment, particularly with demand for high bandwidth memory ("HBM") chips utilized in generative artificial intelligence applications, ramp of new mobile application processor designs, and demand for client PC and server microprocessor designs. While we experienced growth in total revenues during the first nine months of fiscal 2024, our Systems segment revenues were negatively impacted due to the absence of metrology system sales during the first nine months of fiscal 2024 as a result of the sale of our FRT Metrology business in the fourth quarter of fiscal 2023. Additionally, the increase in net income was partially attributable to the $20.3 million gain recognized from the completion of the sale of our China operations and establishment of an exclusive distribution and partnership agreement to continue sales and support of our products in the region (the "China Transaction").

Critical Accounting Estimates

Management's Discussion and Analysis and Note 2, *Summary of Significant Accounting Policies*, to the Consolidated Financial Statements in our 2023 Annual Report on Form 10-K describe the significant accounting estimates and significant accounting policies used in preparation of the Consolidated Financial Statements. Actual results in these areas could differ from management's estimates. During the nine months ended September 28, 2024, there were no significant changes in our significant accounting policies or estimates from those reported in our Annual Report on Form 10-K for the year ended December 30, 2023.

Results of Operations

The following table sets forth our operating results as a percentage of revenues for the periods indicated:

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
Revenues	100.0 %	100.0 %	100.0 %	100.0 %
Cost of revenues	59.3	59.6	59.2	61.5
Gross profit	40.7	40.4	40.8	38.5
Operating expenses:				
Research and development	15.0	18.1	15.9	17.7
Selling, general and administrative	17.1	20.7	18.6	20.5
Total operating expenses	32.1	38.8	34.5	38.2
Gain on sale of business	—	—	3.6	—
Operating income	8.6	1.6	9.9	0.3
Interest income, net	1.8	0.9	1.8	0.9
Other income (expense), net	(0.3)	0.5	0.1	0.2
Income before income taxes	10.1	3.0	11.8	1.4
Provision for income taxes	1.1	0.5	1.4	0.1
Net income	9.0 %	2.5 %	10.4 %	1.3 %

Revenues by Segment and Market

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
	(In thousands)			
Probe Cards	$ 172,174	$ 128,339	$ 475,667	$ 370,970
Systems[(1)]	35,743	43,236	98,449	123,969
	$ 207,917	$ 171,575	$ 574,116	$ 494,939

[(1)] During the fourth quarter of fiscal 2023, we completed the sale of our FRT Metrology business. As a result, metrology systems revenue will not recur in future periods. We generated no metrology systems revenue during the three and nine months ended September 28, 2024, compared to $8.0 million and $16.7 million, during the three and nine months ended September 30, 2023, respectively.

	Three Months Ended					
	September 28, 2024	% of Revenues	September 30, 2023	% of Revenues	$ Change	% Change
	(Dollars in thousands)					
Probe Cards Markets:						
Foundry & Logic	$ 107,446	51.7 %	$ 96,366	56.2 %	$ 11,080	11.5 %
DRAM	60,184	28.9	27,478	16.0	32,706	119.0
Flash	4,544	2.2	4,495	2.6	49	1.1
Systems Market:						
Systems[(1)]	35,743	17.2	43,236	25.2	(7,493)	(17.3)
Total revenues	$ 207,917	100.0 %	$ 171,575	100.0 %	$ 36,342	21.2 %

	Nine Months Ended					
	September 28, 2024	% of Revenues	September 30, 2023	% of Revenues	$ Change	% Change
	(Dollars in thousands)					
Probe Cards Markets:						
Foundry & Logic	$ 297,874	51.9 %	$ 279,895	56.6 %	$ 17,979	6.4 %
DRAM	164,122	28.6	77,832	15.7	86,290	110.9
Flash	13,671	2.4	13,243	2.7	428	3.2
Systems Market:						
Systems[(1)]	98,449	17.1	123,969	25.0	(25,520)	(20.6)
Total revenues	$ 574,116	100.0 %	$ 494,939	100.0 %	$ 79,177	16.0 %

[(1)] During the fourth quarter of fiscal 2023, we completed the sale of our FRT Metrology business. As a result, metrology systems revenue will not recur in future periods. We generated no metrology systems revenue during the three and nine months ended September 28, 2024, compared to $8.0 million and $16.7 million, during the three and nine months ended September 30, 2023, respectively.

Foundry & Logic — The increase in Foundry & Logic product revenue for the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023, was driven by the ramp of new mobile application processor designs and stronger probe-card demand for client PC and server microprocessor designs.

DRAM — The increase in DRAM product revenue for the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023, was driven by increased demand for HBM designs utilized in generative artificial intelligence applications and increased demand for commodity DRAM designs, particularly DDR5.

Flash — The increase in Flash product revenue for the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023, was driven by increased customer production activity and demand for our products.

Systems — The decrease in Systems market revenue for the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023, was primarily driven by the absence of metrology systems revenue due to the sale of our FRT Metrology business during the fourth quarter of fiscal 2023. The fluctuation in Systems revenue from sources not associated with metrology systems for the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023, was an increase of $0.6 million, or 1.6%, and a decrease of $8.8 million, or 8.2%, respectively. The increase for the three months ended September 28, 2024, compared to the three months ended September 30, 2023, was from increased sales of cryogenic systems, partially offset by decreased sales of thermal systems. The decrease for the nine months ended September 28, 2024, compared to the nine months ended September 30, 2023, was from decreased sales of stations and thermal systems, partially offset by an increase in sales of cryogenic stations.

Revenues by Geographic Region

	Three Months Ended				Nine Months Ended			
	September 28, 2024	% of Revenues	September 30, 2023	% of Revenues	September 28, 2024	% of Revenue	September 30, 2023	% of Revenue
	(Dollars in thousands)							
South Korea	$ 41,728	20.1 %	$ 35,075	20.4 %	$ 141,552	24.7 %	$ 83,713	16.9 %
United States	55,015	26.5	43,725	25.5	148,672	25.9	124,129	25.1
Taiwan	47,922	23.0	42,975	25.0	122,612	21.4	112,816	22.8
China	34,513	16.6	21,750	12.7	75,213	13.1	72,357	14.6
Europe	7,756	3.7	9,296	5.4	25,420	4.4	29,538	6.0
Japan	8,056	3.9	6,964	4.1	24,209	4.2	25,873	5.2
Malaysia	5,280	2.5	5,964	3.5	13,745	2.4	23,911	4.8
Singapore	5,475	2.6	3,677	2.1	14,755	2.6	11,840	2.4
Rest of the world	2,172	1.1	2,149	1.3	7,938	1.3	10,762	2.2
Total revenues	$ 207,917	100.0 %	$ 171,575	100.0 %	$ 574,116	100.0 %	$ 494,939	100.0 %

Geographic revenue information is based on the location to which we ship the product. For example, if a certain South Korean customer purchases through its U.S. subsidiary and requests the products to be shipped to an address in South Korea, this sale will be reflected in the revenue for South Korea rather than the U.S.

Changes in revenue by geographic region for the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023, were primarily attributable to changes in customer demand, shifts in customer regional manufacturing strategies, particularly with our large multinational customers, product sales mix, and impacts from trade restrictions. Specifically, the changes in revenue by geographic region was attributable to the following:

- The increase in revenue for South Korea for the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023 was driven principally by increased demand for our DRAM probe card products, including those for HBM.
- The increase in revenues for the United States and the decrease in revenues for Malaysia, for the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023 were driven principally by a single large U.S.-based company with operations in these regions that shifted shipments from these regions to the United States.
- The overall increase in revenues for China for the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023, was driven by increased demand from a large Chinese DRAM integrated device manufacturer.
- Despite the increase in revenues for China previously described, expanded export license requirements imposed by the U.S. government beginning the fourth quarter of fiscal 2022 for exporting advanced U.S. semiconductor technology to China has negatively impacted revenue for that region. These requirements have restricted our ability to ship products to the region, decreasing demand from domestic China customers. Additionally, these requirements have caused, and continue to drive, some of our multinational customers to concentrate operations in regions other than China, lowering overall demand for those customers within the region.

Cost of Revenues and Gross Margins

Cost of revenues consists primarily of manufacturing materials, compensation and benefits, shipping and handling costs, manufacturing-related overhead (including equipment costs, related occupancy, and computer services), warranty costs, inventory adjustments (including write-downs for inventory obsolescence), and amortization of certain intangible assets. Our manufacturing operations rely on a limited number of suppliers to provide key components and materials for our products, some of which are a sole source. We order materials and supplies based on backlog and forecasted customer orders. Tooling and setup costs related to changing manufacturing lots at our suppliers are also included in the cost of revenues. We expense all warranty costs, inventory provisions and amortization of certain intangible assets as cost of revenues.

Our gross profit and gross margin were as follows (dollars in thousands):

	Three Months Ended			
	September 28, 2024	September 30, 2023	$ Change	% Change
Gross profit	$ 84,705	$ 69,285	$ 15,420	22.3 %
Gross margin	40.7 %	40.4 %		

	Nine Months Ended			
	September 28, 2024	September 30, 2023	$ Change	% Change
Gross profit	$ 234,343	$ 190,646	$ 43,697	22.9 %
Gross margin	40.8 %	38.5 %		

Our gross profit and gross margin by segment were as follows (dollars in thousands):

	Three Months Ended							
	September 28, 2024				September 30, 2023			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Gross profit	$ 72,855	$ 14,838	$ (2,988)	$ 84,705	$ 49,383	$ 22,396	$ (2,494)	$ 69,285
Gross margin	42.3 %	41.5 %		40.7 %	38.5 %	51.8 %		40.4 %

	Nine Months Ended							
	September 28, 2024				September 30, 2023			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Gross profit	$ 198,885	$ 43,521	$ (8,063)	$ 234,343	$ 135,118	$ 64,266	$ (8,738)	$ 190,646
Gross margin	41.8 %	44.2 %		40.8 %	36.4 %	51.8 %		38.5 %

Probe Cards — For the three and nine months ended September 28, 2024, gross profit and gross margins increased compared to the three and nine months ended September 30, 2023, primarily due to greater revenues and a more favorable absorption of costs on higher production volumes. This was partially offset by an unfavorable product mix with a higher concentration of lower-margin DRAM sales and a lower concentration of higher-margin Foundry & Logic sales. For the three and nine months ended September 28, 2024 compared to the corresponding period in the prior year, DRAM revenue was up from 21.4% and 21.0% of Probe Card sales to 35.0% and 34.5% of Probe Card sales, and Foundry & Logic revenue was down from 75.1% and 75.4% of Probe Card sales to 62.4% and 62.6% of Probe Card sales. In general, our DRAM products have lower margins than our Foundry & Logic products.

Systems — For the three and nine months ended September 28, 2024, gross profit and gross margins decreased compared to the three and nine months ended September 30, 2023, primarily as a result of lower revenues and a less favorable absorption of costs on lower production volumes, and a less favorable product mix, in part related to the divestiture of the FRT Metrology business.

Corporate and Other — Corporate and Other includes unallocated expenses relating to stock-based compensation expense, amortization of intangible assets, inventory and fixed asset fair value adjustments due to acquisitions, and restructuring charges, net, which are not used in evaluating the results of, or in allocating resources to, our reportable segments. For the three months ended September 28, 2024, the Corporate and Other gross loss increased compared to the three months ended September 30, 2023, primarily from the an increase in stock-based compensation expense and restructuring charges that were partially offset due to the absence of amortization expense associated with our FRT Metrology business, which was sold during the fourth quarter of fiscal 2023. For the nine months ended September 28, 2024, the Corporate and Other gross loss decreased compared to the nine months ended September 30, 2023, primarily from the absence of amortization expense associated with our FRT Metrology business, which was sold during the fourth quarter of fiscal 2023.

Overall — Gross profit and gross margins fluctuate with revenue levels, product mix, selling prices, factory loading, and material costs. For the three and nine months ended September 28, 2024, compared to the three and nine months ended September 30, 2023, gross profit and gross margins have increased primarily as a result of more favorable absorption of costs and lower inventory excess and obsolescence reserves, partially offset by an unfavorable product mix, as described above.

Cost of revenues included stock-based compensation expense as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
Stock-based compensation	$ 1,934	$ 1,376	$ 5,794	$ 4,801

Research and Development

	Three Months Ended			
	September 28, 2024	September 30, 2023	$ Change	% Change
	(Dollars in thousands)			
Research and development	$ 31,243	$ 31,014	$ 229	0.7 %
% of revenues	15.0 %	18.1 %		

	Nine Months Ended			
	September 28, 2024	September 30, 2023	$ Change	% Change
	(Dollars in thousands)			
Research and development	$ 91,434	$ 87,599	$ 3,835	4.4 %
% of revenues	15.9 %	17.7 %		

Research and development expenses in the three months ended September 28, 2024 increased compared to the corresponding period in the prior year primarily due to increased employee compensation costs from higher performance-based compensation and increased general operational costs, partially offset by lower compensation costs from decreased headcount as a result of the sale of our FRT Metrology business in the fourth quarter of fiscal 2023 and the China Transaction in the first quarter of fiscal 2024, lower project material costs, and lower stock-based compensation expense.

Research and development expenses in the nine months ended September 28, 2024 increased compared to the corresponding period in the prior year primarily due to increased employee compensation costs from higher performance-based compensation, general operational costs, and increased project material costs, partially offset by lower compensation costs from decreased headcount as a result of the sale of our FRT Metrology business in the fourth quarter of fiscal 2023 and the China Transaction in the first quarter of fiscal 2024.

A detail of the changes is as follows (in thousands):

	Three Months Ended September 28, 2024 compared to Three Months Ended September 30, 2023	Nine Months Ended September 28, 2024 compared to Nine Months Ended September 30, 2023
Employee compensation costs	$ 1,082	$ 2,713
Project material costs	(853)	281
General operational costs	576	1,107
Stock-based compensation expense	(494)	(2)
Depreciation	(82)	(264)
	$ 229	$ 3,835

Research and development included stock-based compensation expense as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
Stock-based compensation expense	$ 2,679	$ 3,173	$ 7,906	$ 7,908

Selling, General and Administrative

	Three Months Ended			
	September 28, 2024	September 30, 2023	$ Change	% Change
	(Dollars in thousands)			
Selling, general and administrative	$ 35,607	$ 35,564	$ 43	0.1 %
% of revenues	17.1 %	20.7 %		

	Nine Months Ended			
	September 28, 2024	September 30, 2023	$ Change	% Change
	(Dollars in thousands)			
Selling, general and administrative	$ 106,560	$ 101,561	$ 4,999	4.9 %
% of revenues	18.6 %	20.5 %		

Selling, general and administrative expenses for the three months ended September 28, 2024 compared to the corresponding period in the prior year was effectively flat. The drivers of the fluctuation for the three month period were increased employee compensation costs from higher performance-based compensation and increased commissions expense from increased revenues, mostly offset by lower stock-based compensation expenses, lower transaction expenses related to the sale of our FRT Metrology business earlier in 2024, and lower general operating expenses.

Selling, general and administrative expenses increased in the nine months ended September 28, 2024 compared to the corresponding period in the prior year. The drivers of the increase for the nine month period were increased employee compensation costs from higher performance-based compensation, increased commissions expense from increased revenues, increased consulting fees from the China Transaction in the first quarter of fiscal 2024 and increased general operating expenses, partially offset by lower amortization expense from significant intangible assets becoming fully amortized.

A detail of the changes is as follows (in thousands):

	Three Months Ended September 28, 2024 compared to Three Months Ended September 30, 2023	Nine Months Ended September 28, 2024 compared to Nine Months Ended September 30, 2023
Employee compensation costs	$ 2,884	$ 6,546
Stock-based compensation expense	(1,967)	(774)
Consulting fees	(890)	347
Commission expenses	714	1,450
Amortization of intangibles	(249)	(2,964)
General operating expenses	(449)	394
	$ 43	$ 4,999

Selling, general and administrative included stock-based compensation expense as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
Stock-based compensation expense	$ 4,323	$ 6,290	$ 15,850	$ 16,624

Interest Income (Expense), Net

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
	(Dollars in thousands)			
Interest Income	$ 3,770	$ 1,765	$ 10,542	$ 4,739
Weighted average balance of cash and investments	$ 363,178	$ 233,001	$ 349,157	$ 232,710
Weighted average yield on cash and investments	4.68 %	3.79 %	4.59 %	3.33 %
Interest Expense	$ 120	$ 103	$ 321	$ 319
Average debt outstanding	$ 13,651	$ 14,718	$ 13,920	$ 14,980
Weighted average interest rate on debt	2.75 %	2.75 %	2.75 %	2.75 %

Interest income is earned on our cash, cash equivalents, restricted cash and marketable securities. The increase in interest income for the three and nine months ended September 28, 2024 compared with the corresponding period of the prior year, was attributable to higher invested balances.

Interest expense primarily includes interest on our term loan, interest rate swap derivative contracts, and term loan issuance costs amortization charges. The interest expense for the three and nine months ended September 28, 2024 was effectively flat compared to the corresponding periods in the prior year. This stability is due to our interest rate swap, which fixes the interest rate on our long-term debt.

Other Income, Net

Other income, net, primarily includes the effects of foreign currency and various other gains and losses. We partially mitigate our risks from currency movements by hedging certain balance sheet exposures, which minimizes the impacts during periods of foreign exchange volatility.

Provision for Income Taxes

	Three Months Ended		Nine Months Ended	
	September 28, 2024	September 30, 2023	September 28, 2024	September 30, 2023
	(In thousands, except percentages)			
Provision for income taxes	$ 2,211	$ 786	$ 7,564	$ 626
Effective tax rate	10.6 %	15.2 %	11.2 %	8.7 %

Provision for income taxes reflects the tax provision on our operations in foreign and U.S. jurisdictions, offset by tax benefits from tax credits and the foreign-derived intangible income deduction. Our effective tax rate may vary from period to period based on changes in estimated taxable income or loss by jurisdiction, changes to the valuation allowance, changes to U.S. federal, state or foreign tax laws, changes in stock-based compensation expense/benefit, future expansion into areas with varying country, state, and local income tax rates, and deductibility of certain costs and expenses by jurisdiction. The decrease in our effective tax rate for the three months ended September 28, 2024 compared to the corresponding period in the prior year was primarily driven by stock-based compensation expense/benefit impacts on the provision for income tax expense. The increase in our effective tax rate for the nine months ended September 28, 2024 compared to the corresponding period in the prior year was primarily driven by higher taxable U.S. income during fiscal 2024.

The Creating Helpful Incentives to Produce Semiconductors and Science Act of 2022 (“CHIPS Act”) was signed into law on August 9, 2022. The CHIPS Act provides for various incentives and tax credits, among other items, including the Advanced Manufacturing Investment Credit (“AMIC”), which equals 25% of qualified investments in an advanced manufacturing facility that is placed in service after December 31, 2022. At least a portion of our future capital expenditures and research and development costs is expected to qualify for this credit, which benefits us by allowing us to net the credit received against our costs. The AMIC credit is accounted for outside of ASC 740 as a reduction to the depreciable basis of the assets used in operations and will not have an impact on our effective tax rate.

Beginning in 2022, the U.S. Tax Cuts and Jobs Act of 2017 eliminated the existing option to deduct research and development expenditures and requires taxpayers to amortize such expenditures attributable to domestic and foreign research over five and fifteen years, respectively, pursuant to IRC Section 174. While the capitalization requirement has a negative impact on our cash flows, there are offsetting benefits from the enactment of this provision that we have included in our estimated annual effective tax rate. While it is possible that Congress may defer, modify, or repeal this provision, potentially with retroactive effect, we have no assurance that this provision will be deferred, modified, or repealed. Changes in our tax provisions or an increase in our tax liabilities, whether due to changes in applicable laws and regulations, the interpretation or application thereof, or a final determination of tax audits or litigation or agreements, could have a material adverse effect on our financial position, results of operations and/or cash flows.

Liquidity and Capital Resources

Capital Resources

Our working capital increased to $485.6 million at September 28, 2024, compared to $442.7 million at December 30, 2023.

Cash and cash equivalents primarily consist of deposits held at banks and money market funds. Marketable securities primarily consist of corporate bonds, U.S. treasuries, U.S. agency securities, and commercial paper. We typically invest in highly rated securities with low probabilities of default. Our investment policy requires investments to be rated single A or better, and limits the types of acceptable investments, issuer concentration and duration of the investment.

Our cash, cash equivalents and marketable securities totaled approximately $354.5 million at September 28, 2024, compared to $328.3 million at December 30, 2023. Based on our historical results of operations, we expect that our cash, cash equivalents, and marketable securities on hand, and the cash we expect to generate from operations, will be sufficient to fund our short-term and long-term liquidity requirements primarily arising from: research and development, capital expenditures, working capital, outstanding commitments, and other liquidity requirements associated with existing operations. However, we cannot be certain that our cash, cash equivalents, and marketable securities on hand, and cash generated from operations, will be available in the future to fund all of our capital and operating requirements. In addition, any future strategic investments and significant acquisitions may require additional cash and capital resources. To the extent necessary, we may consider entering into short and long-term debt obligations, raising cash through a stock issuance, or obtaining new financing facilities, which may not be available on terms favorable to us. If we are unable to obtain sufficient cash or capital to meet our needs on a timely basis and on favorable terms, our business and operations could be materially and adversely affected.

If we are unsuccessful in maintaining or growing our revenues, maintaining or reducing our cost structure, or increasing our available cash through debt or equity financings, our cash, cash equivalents and marketable securities may decline.

We utilize a variety of tax planning and financing strategies to manage our worldwide cash and deploy funds to locations where needed. As part of these strategies, we indefinitely reinvest a portion of our foreign earnings. Should we require additional capital in the United States, we may elect to repatriate indefinitely-reinvested foreign funds or raise capital in the United States.

Cash Flows

The following table sets forth our net cash flows from operating, investing and financing activities:

	Nine Months Ended	
	September 28, 2024	September 30, 2023
	(In thousands)	
Net cash provided by operating activities	$ 81,621	$ 55,352
Net cash used in investing activities	$ (26,152)	$ (49,994)
Net cash used in financing activities	$ (46,256)	$ (1,308)

Operating Activities

Net cash provided by operating activities consists of net income for the period, adjusted for certain non-cash items and changes in certain operating assets and liabilities. Net cash provided by operating activities for the nine months ended September 28, 2024 was attributable to net income of $59.9 million and net non-cash expenses of $32.0 million, partially offset by the increase in net working capital of $10.3 million. The cash used in net working capital is related to increased accounts receivable, net, of $13.3 million, increased inventories of $7.6 million, decreased accounts payable of $8.8 million, and decreased operating lease liabilities of $5.3 million, largely offset by increased accrued liabilities of $7.4 million, other liabilities of $9.3 million, and deferred revenue of $7.9 million. The non-cash expenses consisted of depreciation, amortization, stock-based compensation, and the provision for excess and obsolete inventories, partially offset by the $20.6 million gain on sale of business and deferred income tax benefits.

Investing Activities

Net cash used in investing activities for the nine months ended September 28, 2024 primarily related to $30.8 million in property, plant and equipment purchases and $15.5 million in net purchases of marketable securities, partially offset by $21.6 million cash provided by the sale of businesses.

Financing Activities

Net cash used in financing activities for the nine months ended September 28, 2024 primarily related to $37.2 million used to purchase common stock under our stock repurchase program, $18.0 million used to pay tax withholdings for net share settlements of employee stock awards, partially offset by $9.7 million received from issuances of common stock under our employee stock purchase plan.

Debt

On June 22, 2020, we entered into an $18.0 million 15-year credit facility loan agreement (the “Building Term Loan”). The proceeds of the Building Term Loan were used to purchase a building adjacent to our leased facilities in Livermore, California. On May 19, 2023, we amended the Building Term Loan, replacing the benchmark reference rate London Interbank Offered Rate (“LIBOR“) with the term Secured Overnight Financing Rate (“SOFR”), with no change to the amount or timing of contractual cash flows.

The Building Term Loan bears interest at a rate equal to the applicable SOFR rate, plus 1.86% per annum. Interest payments are payable in monthly installments over a fifteen-year period. The interest rate at September 28, 2024, before consideration of the interest rate swap discussed in the next paragraph, was 7.07%. As of September 28, 2024, the balance outstanding pursuant to the Building Term Loan was $13.6 million.

On March 17, 2020, we entered into an interest rate swap agreement to hedge the interest payment on the Building Term Loan for the notional amount of $18.0 million, and an amortization period that matches the debt. As future levels of LIBOR over the life of the loan are uncertain, we entered into this interest-rate swap agreement to hedge the exposure in interest rate risks associated with movement in LIBOR rates. This agreement was amended on May 19, 2023 to replace the benchmark reference rate LIBOR with SOFR to match the Building Term Loan agreement (as amended). After the amendment, the interest rate swap continues to convert our floating-rate interest into a fixed-rate at 2.75%. As of September 28, 2024, the notional amount of the loan that is subject to this interest rate swap is $13.6 million.

Stock Repurchase Programs

On May 20, 2022, our Board of Directors authorized a two-year program to repurchase up to $75.0 million of outstanding common stock to offset potential dilution from issuance of common stock under our stock-based compensation programs. During fiscal 2022 and fiscal 2023, we repurchased and retired 1,700,893 shares of common stock for $56.4 million and 504,352 shares of common stock for $18.6 million, respectively, utilizing the remaining shares available for repurchase under the program.

On October 30, 2023, our Board of Directors authorized an additional two-year program to repurchase up to $75.0 million of outstanding common stock, with the primary purpose of offsetting potential dilution from issuance of common stock under our stock-based compensation programs. This share repurchase program will expire on October 30, 2025. During fiscal 2023, we repurchased and retired 32,020 shares of common stock for $1.2 million. During the nine months ended September 28, 2024, we repurchased and retired 889,683 shares of common stock for $37.2 million, and as of September 28, 2024, $36.6 million remained available for future repurchases.

Contractual Obligations and Commitments

The following table summarizes our significant contractual commitments to make future payments in cash under contractual obligations as of September 28, 2024:

	Payments Due In Fiscal Year						
	Remainder 2024	2025	2026	2027	2028	Thereafter	Total
Operating leases	$ 2,294	$ 9,185	$ 7,695	$ 7,259	$ 3,935	$ 1,449	$ 31,817
Term loans - principal payments	273	1,111	1,142	1,175	1,208	8,732	13,641
Term loans - interest payments [1]	239	919	841	758	675	2,122	5,554
Total	$ 2,806	$ 11,215	$ 9,678	$ 9,192	$ 5,818	$ 12,303	$ 51,012

[1] Represents our minimum interest payment commitments at 7.07% per annum, excluding the interest rate swap described in *Debt*, above.

The table above excludes our gross liability for unrecognized tax benefits and our deferred grant. The gross liability for unrecognized tax benefits was $50.3 million as of September 28, 2024. The timing of any payments which could result from these unrecognized tax benefits will depend upon a number of factors and, accordingly, the timing of payment cannot be estimated. The deferred grant was $18.0 million as of September 28, 2024, and consists of cash received from a California Competes Grant awarded from the California Governor's Office of Business and Economic Development. The timing of any potential repayments is dependent upon a number of factors, including the number of employees and capital investments within California over the 5-year term. Accordingly, the timing of any repayment cannot be estimated.

Off-Balance Sheet Arrangements

Historically, we have not participated in transactions that have generated relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. As of September 28, 2024, we were not involved in any such off-balance sheet arrangements.

Recent Accounting Standards

For a description of a recent change in accounting standards, including the expected dates of adoption and estimated effects, if any, in our condensed consolidated financial statements, see Note 1, *Basis of Presentation and Significant Accounting Policies,* in Part I, Item 1 of this Form 10-Q.

Item 3. *Quantitative and Qualitative Disclosures about Market Risk*

For financial market risks related to changes in interest rates and foreign currency exchange rates, reference is made to Item 7A “Quantitative and Qualitative Disclosures about Market Risk” contained in Part II of our Annual Report on Form 10-K for the fiscal year ended December 30, 2023. Our exposure to market risk has not changed materially since December 30, 2023.

Item 4. *Controls and Procedures*

Evaluation of Disclosure Controls and Procedures

Based on our management’s evaluation (with the participation of our principal executive officer and principal financial officer), as of the end of the period covered by this report, our principal executive officer and principal financial officer have concluded that our 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”)) are effective to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the period covered by this Quarterly Report on Form 10-Q that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on the Effectiveness of Controls

Control systems, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control systems' objectives are being met. Further, the design of any control systems must reflect the fact that there are resource constraints, and the benefits of all controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our company have been detected. These inherent limitations include the realities that judgments in decision making can be faulty and that breakdowns can occur because of a simple error or mistake. Control systems can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based, in part, on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

CEO and CFO Certifications

We have attached as exhibits to this Quarterly Report on Form 10-Q the certifications of our Chief Executive Officer and Chief Financial Officer, which are required in accordance with the Exchange Act. We recommend that this Item 4 be read in conjunction with the certifications for a more complete understanding of the subject matter presented.

PART II - OTHER INFORMATION

Item 1A. ***Risk Factors***

There have been no material changes during the three months ended September 28, 2024 to the risk factors discussed in our Annual Report on Form 10-K for the year ended December 30, 2023. If any of the identified risks actually occur, our business, financial condition and results of operations could suffer. The trading price of our common stock could decline and you may lose all or part of your investment in our common stock. The risks and uncertainties described in our Annual Report on Form 10-K for the year ended December 30, 2023 are not the only ones we face. Additional risks that we currently do not know about or that we currently believe to be immaterial may also impair our business operations.

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

Repurchase of Common Stock

The following table summarizes our repurchases of outstanding common stock for the three months ended September 28, 2024:

Period (fiscal months)	Total Number of Shares Purchased	Average Price Paid per Share[2]	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Amount that May Yet Be Purchased Under the Plans or Programs[1] [2]
June 30, 2024 - July 27, 2024	—	$ —	—	$ 53,532,725
July 28, 2024 - August 24, 2024	405,732	41.68	405,732	36,623,543
August 25, 2024 - September 28, 2024	—	—	—	36,623,543
	405,732	$ 41.68	405,732	

[1] In October 2023, our Board of Directors authorized a program to repurchase up to $75.0 million of outstanding common stock to offset potential dilution from issuances of our common stock under our employee stock purchase plan and equity incentive plan. Under the authorized stock repurchase program, we may repurchase shares from time to time on the open market. The pace of repurchase activity will depend on levels of cash generation, current stock price and other factors. The program may be modified or discontinued at any time. This share repurchase program will expire October 2025.

[2] Amounts include the 1% surcharge on stock repurchases under the Inflation Reduction Act's excise tax. This excise tax is recorded in equity and reduces the amount available under the repurchase program, as applicable.

Item 5. *Other Information*

Rule 10b5-1 Trading Arrangements

During the quarter ended September 28, 2024, no director or officer of the Company adopted, modified, or terminated a “Rule 10b5-1 trading arrangement” or a “non-Rule 10b5-1 trading arrangement” as each term is defined in Item 408(a) of Regulation S-K.

Item 6. *Exhibits*

The following exhibits are filed herewith and this list constitutes the exhibit index.

Exhibit		Incorporated by Reference			Filed
Number	**Exhibit Description**	**Form**	**Date**	**Number**	**Herewith**
10.01+	FormFactor, Inc. Severance Plan for US Executives	10-Q	8/7/24	10.01	
31.01	Certification of Chief Executive Officer pursuant to 15 U.S.C. Section 7241, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				X
31.02	Certification of Chief Financial Officer pursuant to 15 U.S.C. Section 7241, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				X
32.01	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				*
101	The following financial statements from the Company’s Quarterly Report on Form 10-Q for the quarter ended September 28, 2024, formatted in Inline XBRL: (i) Condensed Consolidated Balance Sheets, (ii) Condensed Consolidated Statements of Income, (iii) Condensed Consolidated Statements of Comprehensive Income, (iv) Condensed Consolidated Statements of Stockholders’ Equity, (v) Condensed Consolidated Statements of Cash Flows, and (vi) Notes to Condensed Consolidated Financial Statements, tagged as blocks of text and including detailed tags				X
101.INS	XBRL Instance Document				X
101.SCH	XBRL Taxonomy Extension Schema Document				X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document				X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document				X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				X
104	The cover page from the Company’s Quarterly Report on Form 10-Q for the quarter ended September 28, 2024, formatted in Inline XBRL (included as Exhibit 101)				X

* This exhibit shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language in any filings.

\+ Indicates a management contract or compensatory plan or arrangement.

SIGNATURE

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.

FormFactor, Inc.

Date:	November 5, 2024	By:	/s/ SHAI SHAHAR
			Shai Shahar
			Chief Financial Officer
			(Duly Authorized Officer, Principal Financial Officer, and Principal Accounting Officer)

EXHIBIT 31.01

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 15 U.S.C. SECTION 7241, AS
ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael D. Slessor, certify that:

1. I have reviewed the quarterly report on Form 10-Q of FormFactor, Inc.;

2. Based on my knowledge, this 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 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 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.

Date: November 5, 2024

/s/ MICHAEL D. SLESSOR
Michael D. Slessor
Chief Executive Officer
(Principal Executive Officer and Director)

EXHIBIT 31.02

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 15 U.S.C. SECTION 7241,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Shai Shahar, certify that:

1. I have reviewed the quarterly report on Form 10-Q of FormFactor, Inc.;

2. Based on my knowledge, this 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 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 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.

Date: November 5, 2024

/s/ SHAI SHAHAR

Shai Shahar
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

EXHIBIT 32.01

CERTIFICATION OF
CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
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 on Form 10-Q of FormFactor, Inc., a Delaware corporation, for the period ended September 28, 2024, as filed with the Securities and Exchange Commission, each of the undersigned officers of FormFactor, Inc. certifies pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to his respective knowledge:

1. the quarterly report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. the information contained in the quarterly report fairly presents, in all material respects, the financial condition and results of operations of FormFactor, Inc. for the periods presented therein.

Date: November 5, 2024

/s/ MICHAEL D. SLESSOR
Michael D. Slessor
Chief Executive Officer
(Principal Executive Officer and Director)

Date: November 5, 2024

/s/ SHAI SHAHAR
Shai Shahar
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)