

FORMFACTOR INC

FORM 10-Q (Quarterly Report)

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**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 30, 2017

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

(State or other jurisdiction of
incorporation or organization)

13-3711155

(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)

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post 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

(Do not check if a 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 November 2, 2017, 72,984,347 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 30, 2017
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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 30, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 103,083	\$ 101,408
Marketable securities	31,809	7,497
Accounts receivable, net of allowances for doubtful accounts of \$202 and \$298	87,950	70,225
Inventories, net	68,667	59,806
Restricted cash	4	106
Refundable income taxes	1,837	1,391
Prepaid expenses and other current assets	13,385	14,276
Total current assets	306,735	254,709
Restricted cash	766	1,082
Property, plant and equipment, net of accumulated depreciation and amortization of \$251,940 and \$241,943	46,555	42,663
Goodwill	189,704	188,010
Intangibles, net	104,740	126,608
Deferred tax assets	3,299	3,310
Other assets	1,755	2,600
Total assets	\$ 653,554	\$ 618,982
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 37,103	\$ 34,075
Accrued liabilities	30,747	30,184
Current portion of term loan	22,160	12,701
Income taxes payable	589	442
Deferred revenue	6,590	5,305
Total current liabilities	97,189	82,707
Long-term income taxes payable	1,076	1,315
Term loan, less current portion	92,123	125,475
Deferred tax liabilities	4,231	3,703
Deferred rent and other liabilities	4,085	4,726
Total liabilities	198,704	217,926
Commitments and contingencies (Note 11)		
Stockholders' equity:		
Preferred stock, \$0.001 par value:		
10,000,000 shares authorized; no shares issued and outstanding	—	—
Common stock, \$0.001 par value:		
250,000,000 shares authorized; 72,973,018 and 70,907,847 shares issued and outstanding	73	71
Additional paid-in capital	845,942	833,341
Accumulated other comprehensive income (loss)	1,996	(3,740)
Accumulated deficit	(393,161)	(428,616)
Total stockholders' equity	454,850	401,056
Total liabilities and stockholders' equity	\$ 653,554	\$ 618,982

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

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

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Revenues	\$ 143,735	\$ 123,299	\$ 416,540	\$ 259,993
Cost of revenues	86,105	96,111	249,572	197,586
Gross profit	57,630	27,188	166,968	62,407
Operating expenses:				
Research and development	19,338	17,253	55,294	39,235
Selling, general and administrative	24,010	23,008	70,441	49,553
Restructuring and impairment charges, net	16	85	329	6,995
Total operating expenses	43,364	40,346	126,064	95,783
Operating income (loss)	14,266	(13,158)	40,904	(33,376)
Interest income	123	52	283	267
Interest expense	(1,109)	(1,125)	(3,446)	(1,136)
Other income (expense), net	311	83	19	(533)
Income (loss) before income taxes	13,591	(14,148)	37,760	(34,778)
Provision (benefit) for income taxes	1,028	50	2,435	(43,665)
Net income (loss)	<u>\$ 12,563</u>	<u>\$ (14,198)</u>	<u>\$ 35,325</u>	<u>\$ 8,887</u>
Net income (loss) per share:				
Basic	<u>\$ 0.17</u>	<u>\$ (0.20)</u>	<u>\$ 0.49</u>	<u>\$ 0.14</u>
Diluted	<u>\$ 0.17</u>	<u>\$ (0.20)</u>	<u>\$ 0.48</u>	<u>\$ 0.14</u>
Weighted-average number of shares used in per share calculations:				
Basic	<u>72,651</u>	<u>70,502</u>	<u>72,103</u>	<u>62,835</u>
Diluted	<u>73,885</u>	<u>70,502</u>	<u>73,540</u>	<u>63,662</u>

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 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Net income (loss)	\$ 12,563	\$ (14,198)	\$ 35,325	\$ 8,887
Other comprehensive income, net of tax:				
Foreign currency translation adjustments	1,540	989	5,769	2,508
Unrealized gains (losses) on available-for-sale marketable securities	(15)	17	(38)	58
Unrealized gains (losses) on derivative instruments	(36)	(233)	4	(233)
Other comprehensive income, net of tax	1,489	773	5,735	2,333
Comprehensive income (loss)	\$ 14,052	\$ (13,425)	\$ 41,060	\$ 11,220

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 30, 2017	September 24, 2016
Cash flows from operating activities:		
Net income	\$ 35,325	\$ 8,887
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	10,046	8,219
Amortization	23,509	25,355
Accretion of discount on investments	22	(31)
Stock-based compensation expense	11,279	7,477
Amortization of debt issuance costs	482	116
Deferred income tax provision	122	(43,751)
Provision (recovery) of doubtful accounts receivable	(97)	23
Provision for excess and obsolete inventories	6,899	4,437
Acquired inventory step-up amortization	484	7,036
Loss on sale of long-lived assets	101	117
Gain on derivative instruments	(18)	—
Non-cash restructuring	—	964
Foreign currency transaction gains	(1,955)	(1,818)
Changes in assets and liabilities:		
Accounts receivable	(17,097)	(12,963)
Inventories	(14,270)	(8,733)
Prepaid expenses and other current assets	1,140	(1,310)
Refundable income taxes	(440)	126
Other assets	823	(256)
Accounts payable	3,040	10,881
Accrued liabilities	(1,048)	(492)
Income tax payable	(97)	(1,553)
Deferred rent and other liabilities	101	293
Deferred revenues	1,517	(536)
Net cash provided by operating activities	59,868	2,488
Cash flows from investing activities:		
Acquisition of property, plant and equipment	(13,918)	(8,217)
Acquisition of Cascade Microtech, net of cash acquired	—	(228,031)
Proceeds from sale of subsidiary	48	33
Proceeds from sale of property, plant and equipment	—	53
Purchases of marketable securities	(27,373)	(10,587)
Proceeds from maturities of marketable securities	3,000	44,500
Change in restricted cash	451	(112)
Net cash used in investing activities	(37,792)	(202,361)
Cash flows from financing activities:		
Proceeds from issuances of common stock	19,108	4,005
Purchase and retirement of common stock	(10,963)	—
Tax withholdings related to net share settlements of equity awards	(6,617)	—
Proceeds from term loan debt	—	150,000
Payments on term loan debt	(24,375)	(1,875)
Payment of term loan debt issuance costs	—	(1,506)
Net cash (used in) provided by financing activities	(22,847)	150,624
Effect of exchange rate changes on cash and cash equivalents	2,446	2,893
Net increase (decrease) in cash and cash equivalents	1,675	(46,356)

Cash and cash equivalents, beginning of period	<u>101,408</u>	<u>146,264</u>
Cash and cash equivalents, end of period	<u>\$ 103,083</u>	<u>\$ 99,908</u>

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

Non-cash investing and financing activities:			
Fair value of stock issued in connection with the acquisition of Cascade Microtech	\$	—	\$ 93,216
Fair value of stock options and restricted stock-based awards assumed in connection with acquisition of Cascade Microtech		—	7,776
Fair value of vested stock options and restricted stock-based awards paid in cash in connection with the acquisition of Cascade Microtech		—	12,815
Change in accounts payable and accrued liabilities related to property, plant and equipment purchases		(283)	(987)
Supplemental disclosure of cash flow information:			
Cash paid for income taxes, net	\$	2,847	\$ 1,492
Cash paid for interest		2,974	355

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 New Accounting Pronouncements

Basis of Presentation

The condensed consolidated financial information included herein has been prepared by FormFactor, Inc. without audit, 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 financial information as of December 31, 2016 is derived from our 2016 Annual Report on Form 10-K. The condensed consolidated financial statements included herein should be read in conjunction with the consolidated financial statements and the notes thereto included in our 2016 Annual Report on Form 10-K. 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 2017 and 2016 contain 52 weeks and 53 weeks, respectively and the nine months ended September 30, 2017 and September 24, 2016 each contained 13 weeks. Fiscal 2017 will end on December 30, 2017 .

Reclassifications

Certain immaterial reclassifications were made to the prior period financial statements to conform to the current period presentation.

Business Acquisition

On June 24, 2016, we completed the acquisition of Cascade Microtech, Inc. ("Cascade Microtech"), headquartered in Beaverton, Oregon and, accordingly, our Condensed Consolidated Statements of Operations include the results of operations of Cascade Microtech since that date.

Critical Accounting Policies

Our critical accounting policies have not changed during the nine months ended September 30, 2017 from those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2016 .

New Accounting Pronouncements

ASU 2017-12

In August 2017, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities," which changes the recognition and presentation requirements of hedge accounting, including eliminating the requirement to separately measure and report hedge ineffectiveness and changing the presentation to include all items that affect earnings in the same income statement line item as the hedged item. ASU 2017-12 also provides new alternatives for applying hedge accounting to additional hedging strategies; measuring the hedged item in fair value hedges of interest rate risk; reducing the cost and complexity of applying hedge accounting; and reducing the risk of material error correction if a company applies the shortcut method inappropriately. ASU 2017-12 is effective for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2018, on a prospective basis. Early adoption is permitted. We are currently evaluating the impact of ASU 2017-12 on our consolidated financial statements.

ASU 2017-09

In May 2017, the FASB issued ASU 2017-09, "Compensation - Stock Compensation (Topic 718) - Scope of Modification Accounting," which provides clarity and reduces both diversity in practice and the cost and complexity when accounting for a change to the terms of a stock-based award. ASU 2017-09 is effective for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2017, on a prospective basis. Early adoption is permitted. We do not expect the adoption of ASU 2017-09 to have a material effect on our financial position, results of operations or cash flows.

ASU 2017-04

In January 2017, the FASB issued ASU 2017-04, "Intangibles - Goodwill and Other (Topic 350) - Simplifying the Test for Goodwill Impairment," which simplifies the subsequent measurement of goodwill by eliminating Step 2 from the goodwill impairment test. An entity should perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount, and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's

fair value, if applicable. The loss recognized should not exceed the total amount of goodwill allocated to the reporting unit. The same impairment test also applies to any reporting unit with a zero or negative carrying amount. An entity still has the option to perform the qualitative assessment for a reporting unit to determine if the quantitative impairment test is necessary. ASU 2017-04 is effective for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2019, on a prospective basis. Early adoption is permitted for interim or annual goodwill impairment tests performed after January 1, 2017. We do not expect the adoption of ASU 2017-04 to have a material effect on our financial position, results of operations or cash flows.

ASU 2016-09

In March 2016, the FASB issued ASU 2016-09, "Improvements to Employee Share-Based Payment Accounting," which amends Accounting Standards Codification ("ASC") Topic 718, "Compensation - Stock Compensation." The ASU includes provisions intended to simplify various aspects related to how share-based payments are accounted for and presented in the financial statements including:

- 1) that excess tax benefits and tax deficiencies relating to share based payment awards will be recognized as income tax benefit or expense in the reporting period in which they occur (previously such amounts were recognized in additional paid-in capital);
- 2) that excess tax benefits will be classified as an operating activity in the statement of cash flows; and
- 3) companies have the option to elect to estimate forfeitures or to account for them when they occur.

We adopted ASU 2016-09 as of January 1, 2017, which is the first day of our fiscal 2017 and made an accounting policy election to account for forfeitures as incurred, resulting in a decrease of \$0.1 million in our accumulated deficit on January 1, 2017. The adjustment was reflected in our Condensed Consolidated Balance Sheets as of this date.

Additionally, we determined that there was no other cumulative effect on accumulated deficit or other components of equity or net assets as of the beginning of the period of adoption of this guidance as the impact of recording cumulative excess tax benefits in income taxes in our Condensed Consolidated Statements of Operations was fully offset by a valuation allowance as of the date of adoption. Finally, we will follow the prospective transition method for the recognition of windfalls and shortfalls associated with excess tax benefits and tax deficiencies relating to share-based payment awards.

ASU 2016-10, ASU 2015-14 and ASU 2014-09

In April 2016, the FASB issued ASU 2016-10, "Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing" and which was issued to clarify ASC Topic 606, "Revenue from Contracts with Customers" related to (i) identifying performance obligations; and (ii) the licensing implementation guidance. The effective date and transition of ASU 2016-10 is the same as the effective date and transition of ASU 2014-09, "Revenue from Contracts with Customers (Topic 606)," as discussed below.

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers," and, in August 2015, the FASB issued ASU 2015-14, "Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date," which defers the effective date of ASU 2014-09 by one year. ASU 2014-09 requires an entity to recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration to which an entity expects to be entitled in exchange for those goods or services. The guidance also requires expanded disclosures relating to the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. Additionally, qualitative and quantitative disclosures are required about customer contracts, significant judgments and changes in judgments, and assets recognized from the costs to obtain or fulfill a contract. The standard permits the use of either the retrospective or cumulative effect transition methods. This guidance will replace most existing revenue recognition guidance in United States GAAP when it becomes effective, which for us will be at the beginning of the first quarter of fiscal year 2018 using one of the two prescribed transition methods. Early adoption of one year prior to the required effective date is permitted.

We do not plan to early adopt the guidance. We are currently evaluating the impact of these ASUs. Depending on the results of our review, there could be changes to the timing of recognition of revenues. We expect to complete our assessment process, including selecting a transition method for adoption, in the fourth quarter of fiscal 2017, along with our implementation process prior to the adoption of these ASUs effective at the beginning of fiscal year 2018.

ASU 2016-02

In February 2016, the FASB issued ASU 2016-02, "Leases," which requires that lease arrangements longer than twelve months result in an entity recognizing an asset and liability. The updated guidance is effective for interim and annual periods beginning after December 15, 2018, and early adoption is permitted. We are evaluating the impact of the updated guidance on our consolidated financial statements.

Note 2 — Concentration of Credit and Other Risks

We market and sell our products to a narrow base of customers and generally do not require collateral. Each of the following customers accounted for more than 10% of our revenues for the periods indicated:

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Intel	30.6%	28.9%	27.4%	34.8%

At September 30, 2017, one customer accounted for 35.7% of gross accounts receivable. At December 31, 2016, one customer accounted for approximately 21% of gross accounts receivable. No other customers accounted for 10% or more of gross accounts receivable at either of these fiscal period ends.

Note 3 — Inventories

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

Inventories consisted of the following (in thousands):

	September 30, 2017	December 31, 2016
Raw materials	\$ 32,378	\$ 27,402
Work-in-progress	22,474	20,390
Finished goods	13,815	12,014
	<u>\$ 68,667</u>	<u>\$ 59,806</u>

Note 4 — Goodwill and Intangible Assets

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

	Probe Cards	Systems	Total
Goodwill, gross, as of December 26, 2015	\$ 30,731	\$ —	\$ 30,731
Additions - Cascade Microtech acquisition	141,751	16,390	158,141
Foreign currency translation	—	(862)	(862)
Goodwill, gross, as of December 31, 2016	172,482	15,528	188,010
Foreign currency translation	—	1,694	1,694
Goodwill, gross, as of September 30, 2017	<u>\$ 172,482</u>	<u>\$ 17,222</u>	<u>\$ 189,704</u>

We have not recorded any goodwill impairments as of September 30, 2017.

Intangible assets were as follows (in thousands):

Other Intangible Assets	September 30, 2017			December 31, 2016		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Existing developed technologies	\$ 143,995	\$ 71,786	\$ 72,209	\$ 142,701	\$ 56,131	\$ 86,570
Trade name	12,066	5,047	7,019	11,921	2,989	8,932
Customer relationships	40,262	14,950	25,312	39,869	10,854	29,015
Backlog	15,769	15,569	200	15,581	13,489	2,092
	<u>\$ 212,092</u>	<u>\$ 107,352</u>	<u>\$ 104,740</u>	<u>\$ 210,072</u>	<u>\$ 83,463</u>	<u>\$ 126,609</u>

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

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Cost of revenues	\$ 5,473	\$ 17,846	\$ 17,411	\$ 22,003
Selling, general and administrative	2,043	2,050	6,098	3,352
	<u>\$ 7,516</u>	<u>\$ 19,896</u>	<u>\$ 23,509</u>	<u>\$ 25,355</u>

The estimated amortization of intangible assets over the next five years is as follows (in thousands):

Fiscal Year	Amount
Remainder of 2017	\$ 7,432
2018	28,650
2019	25,986
2020	23,917
2021	13,128
Thereafter	5,627
	<u>\$ 104,740</u>

Note 5 — Restructuring Charges

Restructuring charges are comprised of costs related to employee termination benefits, including stock-based compensation, cost of long-lived assets abandoned or impaired, as well as contract termination costs.

Restructuring charges in the fiscal 2017 and fiscal 2016 periods were related to the consolidation of Cascade Microtech into our operations. Restructuring charges in the fiscal 2016 periods also included costs related to the consolidation of our sales operations.

The activities in the restructuring accrual for the nine months ended September 30, 2017 were as follows (in thousands):

	Employee Severance and Benefits	Contract Termination and Other Costs	Total
Accrual at December 31, 2016	\$ 330	\$ 104	\$ 434
Restructuring charges	318	11	329
Cash payments	(681)	(94)	(775)
Adjustment to restructuring charges	33	(5)	28
Accrual at September 30, 2017	<u>\$ —</u>	<u>\$ 16</u>	<u>\$ 16</u>

The cash payments associated with these restructuring activities are expected to be completed by the end of fiscal 2017.

Note 6 — 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 30, 2017 or the year ended December 31, 2016 .

The carrying values of Cash and cash equivalents, 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 2017 .

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 30, 2017	Level 1	Level 2	Total
Assets:			
Cash equivalents:			
Money market funds	\$ 9,067	\$ —	\$ 9,067
Marketable securities:			
Certificates of deposit	—	958	958
Agency securities	—	9,495	9,495
Corporate bonds	—	19,355	19,355
Commercial paper	—	2,001	2,001
	—	31,809	31,809
Interest rate swap derivative contracts	—	848	848
Total assets	\$ 9,067	\$ 32,657	\$ 41,724
Liabilities:			
Foreign exchange derivative contracts	\$ —	\$ (656)	\$ (656)

December 31, 2016	Level 1	Level 2	Total
Assets:			
Cash equivalents:			
Money market funds	\$ 19,350	\$ —	\$ 19,350
Marketable securities:			
U.S. Treasuries	—	7,497	7,497
Foreign exchange derivative contracts	—	1,137	1,137
Interest rate swap derivative contracts	—	838	838
Total	\$ 19,350	\$ 9,472	\$ 28,822

We did not have any liabilities measured at fair value on a recurring basis at December 31, 2016 .

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 of our investments have a sufficient level of 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 income (loss) in our Condensed Consolidated Balance Sheets. We did not have any other-than-temporary unrealized gains or losses at either period end.

Interest Rate Swaps

The fair value of our interest rate swap contracts is determined based on valuation models that use interest rate yield curves as inputs. For accounting purposes, our interest rate swap contracts qualify for, and are designated as, cash flow hedges. 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.

The estimated fair value of the interest rate swaps as of September 30, 2017 and December 31, 2016 was reported as a derivative asset of approximately \$0.8 million and \$0.8 million, respectively, within Prepaid expenses and other current assets and Other assets in our Condensed Consolidated Balance Sheets.

The impact of the cash flow hedges on our Condensed Consolidated Statements of Operations was as follows (in thousands):

Three Months Ended								
Derivatives in Cash Flow Hedging Relationships	Amount of Gain or (Loss) Recognized in OCI on Derivative (Effective Portion)		Location of Gain or (Loss) Reclassified from Accumulated OCI into Income (Effective Portion)	Amount of Gain or (Loss) Reclassified from Accumulated OCI into Income (Effective Portion)		Location of Gain or (Loss) Recognized in Income on Derivative (Ineffective Portion)	Amount of Gain or (Loss) Recognized in Income on Derivative (Ineffective Portion)	
	September 30, 2017	September 24, 2016		September 30, 2017	September 24, 2016		September 30, 2017	September 24, 2016
	Interest rate swap contracts	\$ 18		\$ 233	Interest expense		\$ 54	\$ —

Nine Months Ended								
Derivatives in Cash Flow Hedging Relationships	Amount of Gain or (Loss) Recognized in OCI on Derivative (Effective Portion)		Location of Gain or (Loss) Reclassified from Accumulated OCI into Income (Effective Portion)	Amount of Gain or (Loss) Reclassified from Accumulated OCI into Income (Effective Portion)		Location of Gain or (Loss) Recognized in Income on Derivative (Ineffective Portion)	Amount of Gain or (Loss) Recognized in Income on Derivative (Ineffective Portion)	
	September 30, 2017	September 24, 2016		September 30, 2017	September 24, 2016		September 30, 2017	September 24, 2016
	Interest rate swap contracts	\$ 27		\$ 233	Interest expense		\$ 23	\$ —

Foreign Exchange Derivative Contracts

The fair value of our foreign exchange derivative contracts was determined based on current foreign currency exchange rates and forward points. We recorded the net unrealized gain or loss in our Condensed Consolidated Statements of Operations as a component of Other income (expense), net each period as incurred. All of our foreign exchange derivative contracts outstanding at September 30, 2017 will mature in the fourth quarter of fiscal 2017.

The following table provides information about our foreign currency forward contracts outstanding as of September 30, 2017 (in thousands):

Currency	Contract Position	Contract Amount (Local Currency)	Contract Amount (U.S. Dollars)
Japanese Yen	Sell	1,396,398	\$ 12,408
Taiwan Dollar	Buy	(47,111)	(1,555)
Korean Won	Buy	(3,076,638)	(2,717)
Euro Dollar	Sell	17,617	20,156
Total USD notional amount of outstanding foreign exchange contracts			\$ 28,292

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.

The location and amount of gains and losses related to non-designated derivative instruments that matured were as follows (in thousands):

Derivatives Not Designated as Hedging Instruments	Location of Gain (Loss) Recognized on Derivatives	Amount of Gain (Loss) Recognized on Derivatives			
		Three Months Ended		Nine Months Ended	
		September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Foreign exchange forward contracts	Other income (expense), net	\$ (933)	\$ (224)	\$ (571)	\$ (1,927)

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

We measure and report 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. Refer to Note 4 to the Condensed Consolidated Financial Statements- *Goodwill and Intangible Assets* , for further details. There were no assets or liabilities measured at fair value on a nonrecurring basis during the nine months ended September 30, 2017 and September 24, 2016 .

Note 7 — Warranty

A reconciliation of the changes in our warranty liability is as follows (in thousands):

	Nine Months Ended	
	September 30, 2017	September 24, 2016
Balance at beginning of period	\$ 2,972	\$ 1,116
Warranty reserve from acquisition of Cascade Microtech	—	795
Accruals	4,888	3,106
Settlements	(5,009)	(2,730)
Balance at end of period	\$ 2,851	\$ 2,287

Note 8 — Stockholders' Equity

Common Stock Repurchase Program

In February 2017, our Board of Directors authorized a program to repurchase up to \$25 million of outstanding common stock to offset potential dilution from issuances of common stock under our stock-based compensation plans. The share repurchase program will expire on February 1, 2020. During the nine months ended September 30, 2017 , we repurchased and retired 867,620 shares of common stock for \$11.0 million and, as of September 30, 2017 , \$14.0 million remained available for future repurchases.

Repurchased shares are retired upon the settlement of the related trade transactions with the excess of cost over par value charged to additional paid-in capital. 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 31, 2016	3,108,560	\$ 8.61
Awards granted	1,615,982	13.19
Awards vested	(1,331,116)	7.94
Awards canceled	(203,653)	8.91
RSUs at September 30, 2017	<u>3,189,773</u>	<u>\$ 11.15</u>

The total fair value of RSUs vested during the nine months ended September 30, 2017 was \$17.8 million .

Stock Options

Stock option activity under our equity incentive plan was as follows:

	Options Outstanding	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life in Years	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2016	2,198,031	\$ 9.13		
Options exercised	(1,431,767)	9.37		
Options canceled	(65,308)	13.60		
Outstanding at September 30, 2017	<u>700,956</u>	<u>\$ 8.21</u>	3.85	\$ 6,056
Vested and expected to vest at September 30, 2017	<u>700,956</u>	<u>\$ 8.21</u>	3.85	\$ 6,056
Exercisable at September 30, 2017	<u>420,022</u>	<u>\$ 8.52</u>	3.17	\$ 3,497

Stock-Based Compensation

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

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Cost of revenues	\$ 894	\$ 674	\$ 2,540	\$ 1,712
Research and development	1,437	913	3,768	2,251
Selling, general and administrative	2,255	1,615	4,971	3,514
Total stock-based compensation	<u>\$ 4,586</u>	<u>\$ 3,202</u>	<u>\$ 11,279</u>	<u>\$ 7,477</u>

Employee Stock Purchase Plan ("ESPP")

Information related to activity under our ESPP was as follows:

	Nine Months Ended September 30, 2017
Shares issued	655,961
Weighted average per share purchase price	\$ 8.68
Weighted average per share discount from the fair value of our common stock on the date of issuance	\$ 4.03

Unrecognized Compensation Costs

At September 30, 2017, the unrecognized stock-based compensation was as follows (in thousands):

	Unrecognized Expense	Average Expected Recognition Period in Years
Stock options	\$ 667	1.33
Restricted stock units	30,975	2.30
Employee stock purchase plan	1,105	0.34
Total unrecognized stock-based compensation expense	<u>\$ 32,747</u>	2.21

Note 9 — Income Taxes

Information regarding our income tax provision (benefit) was as follows (dollars in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Provision (benefit) for income taxes	\$ 1,028	\$ 50	\$ 2,435	\$ (43,665)
Effective income tax rate	7.6%	(0.4)%	6.4%	125.6%

Income tax provision (benefit) reflects the tax provision on our operations in foreign and U.S. jurisdictions, offset by tax benefits from lapsing of statute of limitations related to uncertain tax positions in foreign jurisdictions. We continue to maintain a full valuation allowance against our U.S. Federal and State deferred tax assets. The change in provision for taxes primarily relates to higher profits in foreign jurisdictions.

The income tax benefit in nine month period ended September 24, 2016 was primarily due to the release of valuation allowance on our deferred tax assets ("DTAs") in connection with our acquisition of Cascade Microtech as a result of the establishment of deferred tax liabilities ("DTLs") on the acquired identifiable intangible assets. These DTLs exceeded the acquired DTAs by approximately \$43.9 million and created additional sources of income to realize a tax benefit for our previously-existing DTAs. Accordingly, the valuation allowance on a portion of our DTAs was released and resulted in an income tax benefit of approximately \$43.9 million during the nine months ended September 24, 2016.

Note 10 — Net Income (Loss) per Share

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

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Weighted-average shares used in computing basic net income (loss) per share	72,651	70,502	72,103	62,835
Add potentially dilutive securities	1,234	—	1,437	827
Weighted-average shares used in computing basic and diluted net income (loss) per share	<u>73,885</u>	<u>70,502</u>	<u>73,540</u>	<u>63,662</u>
Securities not included as they would have been antidilutive	<u>—</u>	<u>5,504</u>	<u>77</u>	<u>1,959</u>

Note 11 — Commitments and Contingencies

Contractual Commitments and Purchase Obligations

Our lease commitments, purchase obligations and other contractual obligations have not materially changed as of September 30, 2017 from those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2016 .

Indemnification Arrangements

We have entered, and may, from time to time in the ordinary course of our business, enter, into contractual arrangements with third parties that include indemnification obligations. We have not recorded any liabilities for these indemnification arrangements on our Condensed Consolidated Balance Sheet as of September 30, 2017 or December 31, 2016 .

Legal Matters

From time to time, we may be subject to legal proceedings and claims in the ordinary course of business. As of September 30, 2017 , and as of the filing of this Quarterly Report on Form 10-Q, we were not involved in any material legal proceedings other than the proceedings summarized below. In the future, we may become a party to additional legal proceedings that may require us to spend significant resources. Litigation can be expensive and disruptive to normal business operations. The results of legal proceedings are difficult to predict, and the costs incurred in litigation can be substantial, regardless of outcome.

In August 2013, a former employee filed a class action lawsuit against us in the Superior Court of California for the County of Alameda alleging violations of California's wage and hour laws and other claims on behalf of himself and all similarly situated current and former employees at our Livermore facilities. On August 25, 2017, the court granted final approval of the parties' agreement to settle the lawsuit. The settlement provides for payment by us of \$1.5 million in settlement of the lawsuit. As of September 30, 2017 , we had paid to the settlement administrator \$1.5 million in accordance with the settlement agreement.

Note 12 — Operating Segments

Our chief operating decision maker ("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 Systems Segment.

The following table summarizes the operating results by reportable segment (dollars in thousands):

	Three Months Ended							
	September 30, 2017				September 24, 2016			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Revenues	\$ 119,439	\$ 24,296	\$ —	\$ 143,735	\$ 102,670	\$ 20,629	\$ —	\$ 123,299
Gross profit	\$ 51,438	\$ 12,571	\$ (6,379)	\$ 57,630	\$ 41,653	\$ 11,090	\$ (25,555)	\$ 27,188
Gross margin	43.1%	51.7%	—%	40.1%	40.6%	53.8%	—%	22.1%
Operating income (loss)	\$ 17,894	\$ 5,277	\$ (8,905)	\$ 14,266	\$ 20,805	\$ 3,988	\$ (37,951)	\$ (13,158)

	Nine Months Ended							
	September 30, 2017				September 24, 2016			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Revenues	\$ 347,559	\$ 68,981	\$ —	\$ 416,540	\$ 239,364	\$ 20,629	\$ —	\$ 259,993
Gross profit	\$ 151,204	\$ 36,176	\$ (20,412)	\$ 166,968	\$ 82,138	\$ 11,090	\$ (30,821)	\$ 62,407
Gross margin	43.5%	52.4%	—%	40.1%	34.3%	53.8%	—%	24.0%
Operating income (loss)	\$ 54,289	\$ 14,363	\$ (27,748)	\$ 40,904	\$ 31,411	\$ 3,988	\$ (68,775)	\$ (33,376)

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 executive compensation along with other measures.

Corporate and Other includes unallocated expenses relating to amortization of intangible assets, share-based compensation expense, acquisition-related costs, including charges related to inventory stepped up to fair value, and other costs, which are not used in evaluating the results of, or in allocating resources to, our reportable segments. Acquisition-related costs include transaction costs and any costs directly related to the acquisition and integration of acquired businesses.

Note 13 — Acquisition

On June 24, 2016, we acquired Cascade Microtech, which was accounted for using the acquisition method of accounting. The acquired assets and liabilities of Cascade Microtech were recorded at their respective fair values including an amount for goodwill, representing the difference between the acquisition consideration and the fair value of the identifiable net assets. During the second quarter of 2017, we finalized our purchase price allocation, with no changes made to our allocation as of December 31, 2016.

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, impact of accounting standards, integration of Cascade Microtech and our share repurchase plan. 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, our ability to execute our business strategy, our ability to integrate Cascade Microtech 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 31, 2016 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 electrical test and measurement solutions. We provide a broad range of high-performance probe cards, analytical probes, probe stations, thermal sub-systems and reliability test systems to both semiconductor companies and scientific institutions. Our products provide electrical information from a variety of semiconductor and electro-optical devices and integrated circuits (devices) from development to production. Customers use our products and services to lower production costs, improve yields, and enable development of complex next-generation devices.

On June 24, 2016, we completed the acquisition of Cascade Microtech, Inc. ("Cascade Microtech"), headquartered in Beaverton, Oregon and, accordingly, our Condensed Consolidated Statements of Operations include the results of operations of Cascade Microtech since that date. Therefore, our condensed consolidated financial results for the three and nine months ended September 30, 2017 may not be directly comparable to our condensed consolidated financial results for the three and nine months ended September 24, 2016 .

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

We generated net income of \$35.3 million in the first nine months of fiscal 2017 as compared to \$8.9 million in the first nine months of fiscal 2016 . The increase in net income was primarily due to increased revenues generated by the acquisition of Cascade Microtech at the end of the second quarter of fiscal 2016, as well as strong demand across our legacy products, and lower restructuring charges, partially offset by increased operating expenses and a \$43.7 million income tax benefit recognized in the first nine months of fiscal 2016 related to the release of valuation allowances on our deferred tax assets in connection with our acquisition of Cascade Microtech.

Critical Accounting Policies and the Use of Estimates

Management's Discussion and Analysis and Note 1 to the Consolidated Financial Statements in our 2016 Annual Report on Form 10-K describe the significant accounting estimates and critical 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 September 30, 2017 , there were no significant changes in our critical accounting policies or estimates from those reported in our Annual Report on Form 10-K for the year ended December 31, 2016 , which was filed with the Securities and Exchange Commission on March 15, 2017.

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 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Revenues	100.0 %	100.0 %	100.0 %	100.0 %
Cost of revenues	59.9	77.9	59.9	76.0
Gross profit	40.1	22.1	40.1	24.0
Operating expenses:				
Research and development	13.5	14.0	13.3	15.1
Selling, general and administrative	16.7	18.7	16.9	19.1
Restructuring and impairment charges, net	—	0.1	0.1	2.7
Total operating expenses	30.2	32.8	30.3	36.9
Operating income (loss)	9.9	(10.7)	9.8	(12.9)
Interest income	0.1	—	0.1	0.1
Interest expense	(0.8)	(0.9)	(0.8)	(0.4)
Other income (expense), net	0.2	0.1	—	(0.2)
Income (loss) before income taxes	9.4	(11.5)	9.1	(13.4)
Provision (benefit) for income taxes	0.7	—	0.6	(16.8)
Net income (loss)	8.7 %	(11.5)%	8.5 %	3.4 %

Revenues by Segment

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
	(In thousands)			
Probe Cards	\$ 119,439	\$ 102,670	\$ 347,559	\$ 239,364
Systems	24,296	20,629	68,981	20,629
	\$ 143,735	\$ 123,299	\$ 416,540	\$ 259,993

The increases in Probe Cards Segment revenue for the three and nine months ended September 30, 2017, compared to the three and nine months ended September 24, 2016 were the result of increases in unit sales, driven by higher demand for both of our Foundry & Logic and DRAM products. The increase for the nine months ended September 30, 2017 compared to the corresponding period of 2016 was also due to acquisition of Cascade Microtech.

The increase in Systems Segment revenue for the three months ended September 30, 2017 compared to the three months ended September 24, 2016 was the result of increases in both volume of station sales and service revenues. The increase for the nine months ended September 30, 2017 compared to the nine months ended September 24, 2016 was the result of the acquisition of Cascade Microtech at the end of June 2016, as well as the increases in fiscal 2017 Systems Segment revenue as discussed. Prior to the acquisition, we did not operate in the Systems Segment.

Revenues by Market

	Three Months Ended			
	September 30, 2017	September 24, 2016	\$ Change	% Change
(Dollars in thousands)				
Probe Cards Markets:				
Foundry & Logic	\$ 81,914	\$ 75,114	\$ 6,800	9.1 %
DRAM	32,373	22,278	10,095	45.3
Flash	5,151	5,278	(127)	(2.4)
Systems Market:				
Systems	24,297	20,629	3,668	17.8 %
Total revenues	\$ 143,735	\$ 123,299	\$ 20,436	16.6 %

	Nine Months Ended			
	September 30, 2017	September 24, 2016	\$ Change	% Change
(Dollars in thousands)				
Probe Cards Markets:				
Foundry & Logic	\$ 244,952	\$ 169,137	\$ 75,815	44.8 %
DRAM	92,798	62,788	30,010	47.8
Flash	9,809	7,439	2,370	31.9
Systems Market:				
Systems	68,981	20,629	48,352	234.4 %
Total revenues	\$ 416,540	\$ 259,993	\$ 156,547	60.2 %

The increases in Foundry & Logic product revenue for the three and nine months ended September 30, 2017, compared to the three and nine months ended September 24, 2016 were primarily the result of strong customer demand across all end markets, including data center, mobile and automotive. The increase for the nine month period was also due to the 2016 acquisition of Cascade Microtech.

The increases in DRAM product revenue for the three and nine months ended September 30, 2017, compared to the three and nine months ended September 24, 2016, were the result of increased customer demand in the DRAM market, as DRAM manufacturers continue their technology node transitions and new design releases.

Flash product revenue for the three months ended September 30, 2017 is consistent when compared with corresponding period in prior year. The increase in Flash revenue for nine months ended September 30, 2017, compared to nine months ended September 24, 2016 was the result of design wins.

The increases in Systems product revenue for the three and nine months ended September 30, 2017 compared to three and nine months ended September 24, 2016 were driven by increased unit sales, including new 200mm and 300mm platforms. The increase in revenue for the nine months ended September 30, 2017, compared to the nine months ended September 24, 2016 was also the result of the acquisition of Cascade Microtech at the end of June 2016. Prior to the acquisition, we did not operate in the Systems market.

Revenues by Geographic Region

	Three Months Ended				Nine Months Ended			
	September 30, 2017	% of Revenue	September 24, 2016	% of Revenue	September 30, 2017	% of Revenue	September 24, 2016	% of Revenue
(Dollars in thousands)								
United States	\$ 57,256	39.8%	\$ 39,625	32.1%	\$ 147,494	35.4%	\$ 88,779	34.1%
Taiwan	17,814	12.4	17,714	14.4	67,161	16.1	43,264	16.6
South Korea	21,762	15.1	17,584	14.3	63,215	15.2	44,042	16.9
Asia-Pacific ⁽¹⁾	23,800	16.6	17,501	14.2	70,226	16.9	25,479	9.8
Europe	12,094	8.4	16,499	13.4	31,472	7.6	36,384	14.0
Japan	10,456	7.3	14,057	11.4	35,066	8.4	21,726	8.4
Rest of the world	553	0.4	319	0.3	1,906	0.5	319	0.1
Total revenues	\$ 143,735	100.0%	\$ 123,299	100.0%	\$ 416,540	100.0%	\$ 259,993	100.0%

⁽¹⁾ Asia-Pacific includes all countries in the region except Taiwan, South Korea, and Japan, which are disclosed separately.

Geographic revenue information is based on the location to which we ship the product. For example, if a certain South Korean customer purchases through their North American 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 North America.

The increases in geographical revenues across the regions were primarily attributable to additional revenues generated as a result of our acquisition of Cascade Microtech and strong demand for our legacy products across the board. The decrease in Japan for the three months ended September 30, 2017 compared to corresponding period of fiscal 2016 was due to a reduction in sales to one customer. The decreases in Europe were driven by decreases in legacy product revenue at our three main European customers, partially offset by increases throughout Europe in sales of products related to our Cascade Microtech acquisition.

Cost of Revenues and Gross Margins

Cost of revenues consists primarily of manufacturing materials, payroll, shipping and handling costs, manufacturing-related overhead 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.

Corporate and Other includes unallocated expenses relating to amortization of intangible assets, share-based compensation expense, acquisition-related costs, including charges related to inventory stepped up to fair value, and other costs, which are not used in evaluating the results of, or in allocating resources to, our reportable segments. Acquisition-related costs include transaction costs and any costs directly related to the acquisition and integration of acquired businesses.

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

	Three Months Ended			
	September 30, 2017	September 24, 2016	\$ Change	% Change
(Dollars in thousands)				
Gross profit	\$ 57,630	\$ 27,188	\$ 30,442	112.0%
Gross margin	40.1%	22.1%		
	Nine Months Ended			
	September 30, 2017	September 24, 2016	\$ Change	% Change
(Dollars in thousands)				
Gross profit	\$ 166,968	\$ 62,407	\$ 104,561	167.5%
Gross margin	40.1%	24.0%		

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

	Three Months Ended							
	September 30, 2017				September 24, 2016			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Gross profit	\$ 51,438	\$ 12,571	\$ (6,379)	\$ 57,630	\$ 41,653	\$ 11,090	\$ (25,555)	\$ 27,188
Gross margin	43.1%	51.7%	—%	40.1%	40.6%	53.8%	—%	22.1%

	Nine Months Ended							
	September 30, 2017				September 24, 2016			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Gross profit	\$151,204	\$ 36,176	\$ (20,412)	\$ 166,968	\$82,138	\$ 11,090	\$ (30,821)	\$ 62,407
Gross margin	43.5%	52.4%	—%	40.1%	34.3%	53.8%	—%	24.0%

Probe Cards

For the three and nine months ended September 30, 2017, gross margins in the Probe Cards Segment increased as a result of increased sales to several major customers, favorable product mix, higher factory utilization and improved manufacturing efficiency.

Systems

For the three and nine months ended September 30, 2017, decreases in gross margins in the Systems Segment was attributed to changes in foreign currency exchange rates and unfavorable product mix. For the nine months ended September 30, 2017, increase in gross profit was due to inclusion of the results of operations of Cascade Microtech for three months in 2016. Prior to the acquisition, we operated in the Probe Cards Segment only and did not generate any Systems Segment revenue.

Overall

Gross profit and gross margin fluctuate with revenue levels, product mix, selling prices, factory loading and material costs. For the three and nine months ended September 30, 2017 compared to the three and nine months ended September 24, 2016, gross margins increased due to strong revenues, favorable product mix and higher factor utilization in our DRAM and Foundry & Logic products. The increases in gross margin were also driven by improved manufacturing efficiency. The three and nine month 2016 gross margin also included the impact of higher amortization of backlog and inventory step up which reduced gross margin.

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

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Stock-based compensation	\$ 894	\$ 674	\$ 2,540	\$ 1,712

Future gross margins may be adversely impacted by lower revenues and lower factory utilization even though we have taken significant steps to reduce our operating cost structure. Our gross margins may also be adversely affected if we are required to record additional inventory write-downs for estimated average selling prices of products held in finished goods and work in process inventories that are below the manufacturing cost of those products.

Research and Development

	Three Months Ended			
	September 30, 2017	September 24, 2016	\$ Change	% Change
	(Dollars in thousands)			
Research and development	\$ 19,338	\$ 17,253	\$ 2,085	12.1%
% of revenues	13.5%	14.0%		

	Nine Months Ended			
	September 30, 2017	September 24, 2016	\$ Change	% Change
	(Dollars in thousands)			
Research and development	\$ 55,294	\$ 39,235	\$ 16,059	40.9%
% of revenues	13.3%	15.1%		

The increase in the three months ended September 30, 2017 when compared to corresponding period in the prior year was primarily due to higher bonus payments as a result of improved performance. The increase in the nine months ended September 30, 2017 when compared to the corresponding period in the prior year was primarily due to our acquisition of Cascade Microtech. A detail of the changes is as follows (in millions):

	Three Months Ended September 30, 2017 compared to Three Months Ended September 24, 2016	Nine Months Ended September 30, 2017 compared to Nine Months Ended September 24, 2016
Employee compensation costs	\$ 2.0	\$ 11.9
Stock-based compensation	0.5	1.5
Project material costs	(0.3)	0.4
General operating expenses	(0.2)	1.6
Depreciation	0.1	0.6
	\$ 2.1	\$ 16.0

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

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Stock-based compensation	\$ 1,437	\$ 913	\$ 3,768	\$ 2,251

Selling, General and Administrative

	Three Months Ended			
	September 30, 2017	September 24, 2016	\$ Change	% Change
(Dollars in thousands)				
Selling, general and administrative	\$ 24,010	\$ 23,008	\$ 1,002	4.4%
% of revenues	16.7%	18.7%		

	Nine Months Ended			
	September 30, 2017	September 24, 2016	\$ Change	% Change
(Dollars in thousands)				
Selling, general and administrative	\$ 70,526	\$ 49,553	\$ 20,973	42.3%
% of revenues	16.9%	19.1%		

The increase in the three months ended September 30, 2017 when compared to the corresponding period in the prior year was primarily due to higher bonus payments as a result of improved performance. The increase in the nine months ended September 30, 2017 when compared to the corresponding period in the prior year was primarily due to our acquisition of Cascade Microtech. A detail of the changes is as follows (in millions):

	Three Months Ended September 30, 2017 compared to Three Months Ended September 24, 2016	Nine Months Ended September 30, 2017 compared to Nine Months Ended September 24, 2016
Employee compensation costs	\$ 1.0	\$ 14.4
Consulting fees	(0.2)	3.0
Depreciation and amortization	—	2.7
Travel related costs	(0.1)	2.0
General operating costs	(0.1)	2.5
Stock-based compensation	0.6	1.5
Acquisition related	(0.2)	(5.1)
	<u>\$ 1.0</u>	<u>\$ 21.0</u>

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

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Stock-based compensation	\$ 2,255	\$ 1,615	\$ 4,971	\$ 3,514

Restructuring Charges, net

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
(Dollars in thousands)				
Restructuring charges, net	\$ 16	\$ 85	\$ 329	\$ 6,995
% of revenues	—%	0.1%	0.1%	2.7%

Restructuring charges are comprised of costs related to employee termination benefits, cost of long-lived assets abandoned or impaired, as well as contract termination costs.

Restructuring charges in the fiscal 2017 and fiscal 2016 periods were related to the consolidation of Cascade Microtech into our operations. Restructuring charges in the fiscal 2016 periods also included costs related to the consolidation of our sales operations.

Interest Income and Interest Expense

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
	(Dollars in thousands)			
Interest income	\$ 123	\$ 52	\$ 283	\$ 267
Weighted average balance of cash and investments	\$ 125,675	\$ 87,119	\$ 120,134	\$ 142,404
Weighted average yield on cash and investments	0.91%	0.31%	0.72%	0.30%
Interest expense	\$ (1,109)	\$ (1,125)	\$ (3,446)	\$ (1,136)
Average debt outstanding	123,655	148,247	131,813	50,702
Weighted average interest rate on debt	3.23%	2.31%	3.01%	0.79%

Interest income is earned on our cash, cash equivalents and marketable securities. The increase in interest income for the three and nine months ended September 30, 2017 compared with corresponding period of prior year is attributable to increase in investment securities and higher investment yields.

Interest expense primarily includes interest on our term loan and interest-rate swap derivative contracts and term loan issuance costs amortization charges. The decrease in interest expense for the three months ended September 30, 2017 compared to three months ended September 24, 2016 was due to a lower outstanding debt balance as a result of principal payments made and income from interest rate swap contracts as the interest rate goes up. The increase in interest expense for the nine months ended September 30, 2017 when compared to the corresponding period in the prior year was primarily due to the fact that our term loan was entered into at the end of June 2016 in connection with our acquisition of Cascade Microtech and, accordingly, was not outstanding for the first six months of fiscal 2016.

Other Income (Expense), Net

Other income (expense), net primarily includes the effects of foreign currency impact and various other gains and losses.

Income Taxes

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
	(Dollars in thousands)			
Provision (benefit) for income taxes	\$ 1,028	\$ 50	\$ 2,435	\$ (43,665)
Effective income tax rate	7.6%	(0.4)%	6.4%	125.6%

Income tax provision (benefit) reflects the tax provision on our operations in foreign and U.S. jurisdictions, offset by tax benefits from lapsing of statute of limitations related to uncertain tax positions in foreign jurisdictions. We continue to maintain a full valuation allowance against our U.S. Federal and State deferred tax assets. The change in provision for taxes primarily relates to higher profits in foreign jurisdictions.

The income tax benefit in nine month period ended September 24, 2016 was primarily due to the release of valuation allowance on our deferred tax assets ("DTAs") in connection with our acquisition of Cascade Microtech as a result of the establishment of deferred tax liabilities ("DTLs") on the acquired identifiable intangible assets. These DTLs exceeded the acquired DTAs by approximately \$43.9 million and created additional sources of income to realize a tax benefit for our previously-existing DTAs. Accordingly, the valuation allowance on a portion of our DTAs was released and resulted in an income tax benefit of approximately \$43.9 million during the nine months ended September 24, 2016 .

Liquidity and Capital Resources

Capital Resources

Our working capital was \$209.5 million at September 30, 2017 and \$172.0 million at December 31, 2016 . The increase in working capital in the nine months ended September 30, 2017 was primarily due to cash generated from operations as a result of higher revenues.

Our cash, cash equivalents and marketable securities totaled approximately \$134.9 million at September 30, 2017 , as compared to \$108.9 million at December 31, 2016 . Cash and cash equivalents and marketable securities included \$24.7 million held by our foreign subsidiaries as of September 30, 2017 . We believe that we will be able to satisfy our working capital requirements for at least the next twelve months with the liquidity provided by our existing cash, cash equivalents and marketable securities. 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. Our future capital requirements may vary materially from those now planned.

If we are unsuccessful in maintaining or growing our revenues, maintaining or reducing our cost structure (in response to an industry demand downturn or other event), or increasing our available cash through debt or equity financings, our cash, cash equivalents and marketable securities may decline in fiscal 2017 .

We utilize a variety of tax planning and financing strategies in an effort to manage our worldwide cash and deploy funds to locations where they are needed. As part of these strategies, we indefinitely reinvest a significant portion of our foreign earnings and our current plans do not demonstrate a need to repatriate these 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. If we were to repatriate indefinitely-reinvested foreign funds, we would be required to accrue and pay additional United States taxes, less applicable foreign tax credits.

Cash Flows

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

	Nine Months Ended	
	September 30, 2017	September 24, 2016
	(In thousands)	
Net cash provided by operating activities	\$ 59,868	\$ 2,488
Net cash used in investing activities	(37,792)	(202,361)
Net cash (used in) provided by financing activities	(22,847)	150,624

Operating Activities

Net cash provided by operating activities for the nine months ended September 30, 2017 was primarily attributable to our operations generating \$86.2 million of cash (a net income of \$35.3 million which included \$50.9 million of net non-cash expenses), offset by operating assets and liabilities using \$26.3 million of cash as discussed in more detail below.

Accounts receivable increased \$17.7 million to \$88.0 million at September 30, 2017 compared to \$70.2 million at December 31, 2016 as a result of increased revenues, timing of customer shipments and contractual payment terms.

Inventories, net increased \$8.9 million to \$68.7 million at September 30, 2017 compared to \$59.8 million at December 31, 2016 as a result of inventory build, partially offset by higher revenues and a \$6.9 million increase to our inventory valuation allowance.

Accounts payable increased \$3.0 million to \$37.1 million at September 30, 2017 compared to \$34.1 million at December 31, 2016 as a result of an increase in operating expenses, inventory purchases and timing of payments.

Investing Activities

Net cash used in investing activities for the nine months ended September 30, 2017 was primarily related to \$13.9 million of cash used in the acquisition of property, plant and equipment and \$24.4 million used for the purchase of marketable securities.

Financing Activities

Net cash used in financing activities for the nine months ended September 30, 2017 primarily related to \$24.4 million of principal payments made towards the repayment of our term loan, \$11.0 million related to the repurchase of our common stock and \$6.6

million related to tax withholdings associated with the net share settlements of our equity awards, partially offset by \$19.1 million of proceeds received from issuances of common stock under our stock incentive plans.

Debt Facility

On June 24, 2016, we entered into a credit agreement (the "Credit Agreement") with HSBC Bank USA, National Association ("HSBC"). Pursuant to the Credit Agreement, the lenders provided us with a senior secured term loan facility of \$150 million (the "Term Loan"). The proceeds of the Term Loan were used to finance a portion of the purchase price paid in connection with the acquisition of Cascade Microtech.

The Term Loan bears interest at a rate equal to, at our option, (i) the applicable London Interbank Offered Rate ("LIBOR") rate plus 2.00% per annum or (ii) Base Rate (as defined in the Credit Agreement) plus 1.00% per annum. We have currently elected to pay interest at 2.00% over the one-month LIBOR rate. Interest payments are payable in quarterly installments over a five -year period. The Term Loan will amortize in equal quarterly installments, beginning June 30, 2016, in an annual amount equal to 5% for year one, 10% for year two, 20% for year three, 30% for year four and 35% for year five.

The obligations under the Term Loan are guaranteed by substantially all of our assets and the assets of our domestic subsidiaries, subject to certain customary exceptions.

The Credit Agreement contains negative covenants customary for financing of this type, as well as certain financial maintenance covenants. As of September 30, 2017, the balance outstanding pursuant to the term loan was \$115.0 million at an interest rate of 3.23% and we were in compliance with all covenants under the Credit Agreement.

Stock Repurchase Program

In February 2017, our Board of Directors authorized a program to repurchase up to \$25 million of outstanding common stock to offset potential dilution from issuances of common stock under our stock-based compensation plans. The share repurchase program will expire on February 1, 2020. During the nine months ended September 30, 2017, we repurchased and retired 867,620 shares of common stock for \$11.0 million and, as of September 30, 2017, \$14.0 million remained available for future repurchases.

Repurchased shares are retired upon the settlement of the related trade transactions with the excess of cost over par value charged to additional paid-in capital. All repurchases were made in compliance with Rule 10b-18 under the Securities Exchange Act of 1934, as amended.

Contractual Obligations and Commitments

Our contractual obligations and commitments have not materially changed as of September 30, 2017 from those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2016.

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 30, 2017, we were not involved in any such off-balance sheet arrangements.

Recent Accounting Pronouncements

See Note 1 of Notes to Condensed Consolidated Financial Statements.

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 31, 2016. Our exposure to market risk has not changed materially since December 31, 2016.

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), except as described below, 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.

On June 24, 2016, we completed the acquisition of Cascade Microtech, headquartered in Beaverton, Oregon, and are integrating the acquired business into our overall internal control over financial reporting process. As of September 30, 2017, we have updated our internal control over financial reporting as necessary and are currently testing its effectiveness.

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 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 1. Legal Proceedings

The information relating to “Legal Matters” set forth under Note 11 - *Commitments and Contingencies* of the Notes to Condensed Consolidated Financial Statements of this Quarterly Report on Form 10-Q is incorporated herein by reference.

Item 1A. Risk Factors

There have been no material changes during the nine months ended September 30, 2017 to the risk factors discussed in our Annual Report on Form 10-K for the year ended December 31, 2016. 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 31, 2016 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 30, 2017 :

Period (fiscal months)	Total Number of Shares Purchased	Average Price Paid per Share	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)
July 2, 2017-July 31, 2017	67,300	\$ 12.33	67,300	\$ 14,037,043
August 1, 2017-August 31, 2017	—	—	—	\$ 14,037,043
September 1, 2017-September 30, 2017	—	—	—	\$ 14,037,043
	<u>67,300</u>	<u>\$ 12.33</u>	<u>67,300</u>	

(1) In February 2017, our Board of Directors authorized a program to repurchase up to \$25.0 million of outstanding common stock to offset potential dilution from issuances of our common stock under our stock-based compensation plans. 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. The share repurchase program will expire on February 1, 2020.

Item 6. Exhibits

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

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed
		Form	Date	Number	Herewith
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.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

* 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.

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 7, 2017 By: /s/ Michael M. Ludwig

Michael M. Ludwig
Chief Financial Officer
*(Duly Authorized Officer, Principal Financial Officer,
and Principal Accounting Officer)*

**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 the quarterly 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.
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 7, 2017

/s/ MICHAEL D. SLESSOR

Michael D. Slessor

Chief Executive Officer

(Principal Executive Officer and Director)

**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, Michael M. Ludwig, 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 the quarterly 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.
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 7, 2017

/s/ MICHAEL M. LUDWIG

Michael M. Ludwig

Chief Financial Officer

(Principal Financial Officer and Principal Accounting Officer)

**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 30, 2017, 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 7, 2017

/s/ MICHAEL D. SLESSOR

Michael D. Slessor

Chief Executive Officer

(Principal Executive Officer and Director)

Date: November 7, 2017

/s/ MICHAEL M. LUDWIG

Michael M. Ludwig

Chief Financial Officer

(Principal Financial Officer and Principal Accounting Officer)