UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 29, 2018

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 000-18032

LATTICE SEMICONDUCTOR CORPORATION

(Exact name of Registrant as specified in its charter)

State of Delaware	**93-0835214**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
111 SW Fifth Ave, Ste 700, Portland, OR	**97204**
(Address of principal executive offices)	**(Zip Code)**

(503) 268-8000

(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 [X] No [ ]

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period as the registrant was required to submit such files). Yes [X] 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 [X]
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 [X]

Number of shares of common stock outstanding as of October 22, 2018 129,525,043

LATTICE SEMICONDUCTOR CORPORATION
QUARTERLY REPORT ON FORM 10-Q
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Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These involve estimates, assumptions, risks, and uncertainties. Any statements about our expectations, beliefs, plans, objectives, assumptions, or future events or performance are not historical facts and may be forward-looking. We use words or phrases such as “anticipates,” “believes,” “could,” “estimates,” “expects,” “intends,” “plans,” “predicts,” “projects,” “may,” “will,” “should,” “continue,” “ongoing,” “future,” “potential,” and similar words or phrases to identify forward-looking statements.

Examples of forward-looking statements include, but are not limited to, statements about: our transitions to newly adopted accounting standards; the effect of new accounting standards on our consolidated financial statements and financial results; the effects of sales mix on our gross margin in the future; our judgments involved in revenue recognition; our strategies and beliefs regarding the markets in which we compete or may compete; our future investments in research and development; our expectations regarding cash provided by or used in operating activities; our expectations regarding royalties under collaborative agreements; our expectations regarding our ability to service our debt obligations; our expectations regarding restructuring charges under and timing of restructuring plans; our expectation regarding payment of foreign and U.S. federal income taxes; the sufficiency of our financial resources to meet our operating and working capital needs through at least the next 12 months; our intention to continually introduce new products and enhancements and reduce manufacturing costs; our expectation of production volumes and the associated revenue streams for certain mobile handset providers; our continued participation in or sources of revenue from standard setting initiatives or consortia that develop and promote the High-Definition Multimedia Interface ("HDMI") and Mobile High-Definition Link ("MHL") specifications including our expectations regarding sharing of HDMI royalty revenues; our plans to continue to monetize our patent portfolio through sales of non-core patents; our ability to adequately remediate our material weakness; the adequacy of assembly and test capacity commitments; our expectations regarding taxes and tax adjustments, particularly with respect to the 2017 Tax Act; our expectations regarding the outcome of tax and other audits; our valuation allowance and uncertain tax positions; our beliefs regarding the adequacy of our liquidity, capital resources and facilities; our expectations regarding our implementation of a company-wide enterprise resource planning system; and our expectations regarding the impact of sanctions imposed by the United States Department of Commerce.

Forward-looking statements involve estimates, assumptions, risks, and uncertainties that could cause actual results to differ materially from those expressed in the forward-looking statements. The key factors, among others, that could cause our actual results to differ materially from the forward-looking statements included global economic conditions and uncertainty, including as a result of trade related restrictions or tariffs, the concentration of our sales in certain end markets, particularly as it relates to the concentration of our sales in the Asia Pacific region, market acceptance and demand for our existing and new products, our ability to license our intellectual property, any disruption of our distribution channels, the impact of competitive products and pricing, unexpected charges, delays or results relating to our restructuring plans, unexpected complications with our implementation of a company-wide enterprise resource planning system, the effect of any downturn in the economy on capital markets and credit markets, unanticipated taxation requirements or positions of the U.S. Internal Revenue Service or other taxing authority, unanticipated effects of tax reform, or unexpected impacts of accounting guidance. In addition, actual results are subject to other risks and uncertainties that relate more broadly to our overall business, including those more fully described herein and that are otherwise described from time to time in our filings with the Securities and Exchange Commission, including, but not limited to, the items discussed in “Risk Factors” in Item 1A of Part II of this Quarterly Report on Form 10-Q.

You should not unduly rely on forward-looking statements because our actual results could differ materially from those expressed in any forward-looking statements made by us. In addition, any forward-looking statement applies only as of the date on which it is made. We do not plan to, and undertake no obligation to, update any forward-looking statements to reflect events or circumstances that occur after the date on which such statements are made or to reflect the occurrence of unanticipated events.

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(unaudited)

	Three Months Ended		Nine Months Ended	
(In thousands, except per share data)	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Revenue:				
Product	$ 97,932	$ 87,369	$ 291,335	$ 263,206
Licensing and services	3,552	4,602	11,487	27,489
Total revenue	101,484	91,971	302,822	290,695
Costs and expenses:				
Cost of product revenue	43,120	38,032	137,430	120,395
Cost of licensing and services revenue	—	617	259	4,937
Research and development	19,131	25,648	63,153	79,857
Selling, general, and administrative	21,775	21,290	69,886	67,133
Amortization of acquired intangible assets	3,823	8,526	13,982	25,777
Restructuring charges	90	3,071	5,495	4,713
Acquisition related charges	—	681	1,531	3,208
Impairment of acquired intangible assets	586	36,198	12,486	36,198
Gain on sale of building	—	(4,624)	—	(4,624)
Total costs and expenses	88,525	129,439	304,222	337,594
Income (loss) from operations	12,959	(37,468)	(1,400)	(46,899)
Interest expense	(5,500)	(3,888)	(15,582)	(14,112)
Other expense, net	(452)	(2,027)	(246)	(2,104)
Income (loss) before income taxes	7,007	(43,383)	(17,228)	(63,115)
Income tax expense (benefit)	33	(331)	1,973	234
Net income (loss)	$ 6,974	$ (43,052)	$ (19,201)	$ (63,349)
Net income (loss) per share:				
Basic	$ 0.05	$ (0.35)	$ (0.15)	$ (0.52)
Diluted	$ 0.05	$ (0.35)	$ (0.15)	$ (0.52)
Shares used in per share calculations:				
Basic	127,816	122,990	125,578	122,393
Diluted	129,474	122,990	125,578	122,393

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(unaudited)

	Three Months Ended		Nine Months Ended	
(In thousands)	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Net income (loss)	$ 6,974	$ (43,052)	$ (19,201)	$ (63,349)
Other comprehensive income (loss:)				
Unrealized gain (loss) related to marketable securities, net of tax	14	(1)	16	(72)
Reclassification adjustment for (gains) losses related to marketable securities included in other expense, net of tax	(17)	37	(18)	237
Translation adjustment, net of tax	(584)	431	(1,124)	1,381
Change in actuarial valuation of defined benefit pension	—	—	—	(47)
Comprehensive income (loss)	$ 6,387	$ (42,585)	$ (20,327)	$ (61,850)

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED BALANCE SHEETS
(unaudited)

(In thousands, except share and par value data)	September 29, 2018	December 30, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 107,893	$ 106,815
Short-term marketable securities	9,600	4,982
Accounts receivable, net of allowance for doubtful accounts	75,648	55,104
Inventories	66,381	79,903
Prepaid expenses and other current assets	24,143	16,567
Total current assets	283,665	263,371
Property and equipment, less accumulated depreciation of $139,310 at September 29, 2018 and $131,260 at December 30, 2017	35,724	40,423
Intangible assets, net	24,977	51,308
Goodwill	267,514	267,514
Deferred income taxes	188	198
Other long-term assets	20,259	13,147
Total assets	$ 632,327	$ 635,961
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses (includes restructuring)	$ 46,929	$ 54,405
Accrued payroll obligations	9,859	10,416
Current portion of long-term debt	14,104	1,508
Deferred income and allowances on sales to distributors	—	17,250
Deferred licensing and services revenue	—	68
Total current liabilities	70,892	83,647
Long-term debt	261,035	299,667
Other long-term liabilities	39,274	34,954
Total liabilities	371,201	418,268
Contingencies (Note 16)	—	—
Stockholders' equity:		
Preferred stock, $.01 par value, 10,000,000 shares authorized, none issued and outstanding	—	—
Common stock, $.01 par value, 300,000,000 shares authorized; 129,275,000 shares issued and outstanding as of September 29, 2018 and 123,895,000 shares issued and outstanding as of December 30, 2017	1,293	1,239
Additional paid-in capital	732,073	695,768
Accumulated deficit	(469,662)	(477,862)
Accumulated other comprehensive loss	(2,578)	(1,452)
Total stockholders' equity	261,126	217,693
Total liabilities and stockholders' equity	$ 632,327	$ 635,961

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited)

	Nine Months Ended	
(In thousands)	September 29, 2018	September 30, 2017
Cash flows from operating activities:		
Net loss	$ (19,201)	$ (63,349)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Depreciation and amortization	30,740	45,591
Impairment of acquired intangible assets	12,486	36,198
Amortization of debt issuance costs and discount	1,847	1,680
(Gain) loss on sale or maturity of marketable securities	(18)	237
Gain on forward contracts	(105)	(72)
Stock-based compensation expense	9,908	9,286
Gain on disposal of fixed assets	(135)	(197)
Gain on sale of building	—	(4,624)
Loss on sale of assets and business units	—	1,496
Impairment of cost-method investment	266	692
Changes in assets and liabilities:		
Accounts receivable, net	(18,736)	20,687
Inventories	13,892	1,519
Prepaid expenses and other assets	(11,729)	3,839
Accounts payable and accrued expenses (includes restructuring)	1,661	(17,901)
Accrued payroll obligations	(557)	(2,002)
Income taxes payable	309	(711)
Deferred income and allowances on sales to distributors	—	3,862
Deferred licensing and services revenue	(68)	(485)
Net cash provided by operating activities	20,560	35,746
Cash flows from investing activities:		
Proceeds from sales of and maturities of short-term marketable securities	5,000	9,689
Purchases of marketable securities	(9,603)	(7,420)
Proceeds from sale of building	—	7,895
Cash paid for costs of sale of building	—	(1,004)
Capital expenditures	(6,178)	(12,325)
Proceeds from sale of assets and business units	—	967
Short-term loan to cost-method investee	—	(2,000)
Cash paid for software licenses	(6,144)	(6,472)
Net cash used in investing activities	(16,925)	(10,670)
Cash flows from financing activities:		
Restricted stock unit tax withholdings	(1,600)	(2,787)
Proceeds from issuance of common stock	28,051	3,452
Repayment of debt	(27,884)	(33,679)
Net cash used in financing activities	(1,433)	(33,014)

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS (continued)
(unaudited)

	Nine Months Ended	
(In thousands)	September 29, 2018	September 30, 2017
Effect of exchange rate change on cash	(1,124)	1,381
Net increase (decrease) in cash and cash equivalents	1,078	(6,557)
Beginning cash and cash equivalents	106,815	106,552
Ending cash and cash equivalents	$ 107,893	$ 99,995
Supplemental cash flow information:		
Change in unrealized (gain) loss related to marketable securities, net of tax, included in Accumulated other comprehensive loss	$ (16)	$ 72
Income taxes paid, net of refunds	$ 2,716	$ 2,308
Interest paid	$ 13,976	$ 16,379
Accrued purchases of plant and equipment	$ 332	$ 51
Note receivable resulting from sale of assets and business units	$ —	$ 3,050

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

Note 1 - Basis of Presentation and Significant Accounting Policies

The accompanying Consolidated Financial Statements are unaudited and have been prepared by Lattice Semiconductor Corporation (“Lattice,” the “Company,” “we,” “us,” or “our”) pursuant to the rules and regulations of the Securities and Exchange Commission (“SEC”) and in our opinion include all adjustments, consisting only of normal recurring adjustments, necessary for the fair presentation of results for the interim periods. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. generally accepted accounting principles ("U.S. GAAP") have been condensed or omitted as permitted by the SEC's rules and regulations. These Consolidated Financial Statements should be read in conjunction with our audited financial statements and notes thereto included in our Annual Report on Form 10-K for the fiscal year ended December 30, 2017.

Fiscal Reporting Period

We report based on a 52 or 53-week fiscal year ending on the Saturday closest to December 31. Our third quarter of fiscal 2018 and third quarter of fiscal 2017 ended on September 29, 2018 and September 30, 2017, respectively. All references to quarterly or nine months ended financial results are references to the results for the relevant 13-week or 39-week fiscal period, respectively.

Principles of Consolidation and Presentation

The accompanying Consolidated Financial Statements include the accounts of Lattice and its subsidiaries after the elimination of all intercompany balances and transactions.

Reclassifications

Certain amounts in the prior fiscal year in the accompanying consolidated financial statements and notes thereto have been reclassified to conform to the presentation adopted in the current fiscal year. These reclassifications had no material effect on the results of operations or financial position for any period presented. We had previously treated an investment as an equity-method investment and reported equity in net loss of an unconsolidated affiliate separately, amounting to approximately $0.2 million and $0.7 million for the third quarter and first nine months, respectively, of fiscal 2017. We have reclassified the prior year loss to Other expense, net on our Consolidated Statements of Operations to be consistent with the current year treatment of the investment as a cost-method investment.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts and classification of assets, such as marketable securities, accounts receivable, contract assets (included in prepaid expenses and other current assets), inventory, goodwill (including the assessment of reporting units), intangible assets, current and deferred income taxes, accrued liabilities (including restructuring charges and bonus arrangements), disclosure of contingent assets and liabilities at the date of the financial statements, amounts used in acquisition valuations and purchase accounting, impairment assessments, the fair value of equity awards, and the reported amounts of product revenue, licensing and services revenue, and expenses during the fiscal periods presented. Actual results could differ from those estimates.

Cash Equivalents and Marketable Securities

We consider all investments that are readily convertible into cash and that have original maturities of three months or less to be cash equivalents. Cash equivalents consist primarily of highly liquid investments in time deposits or money market accounts and are carried at cost. We account for marketable securities as available-for-sale investments, as defined by U.S. GAAP, and record unrealized gains or losses to Accumulated other comprehensive loss on our Consolidated Balance Sheets, unless losses are considered other than temporary, in which case, those are recorded directly to the Consolidated Statements of Operations and Consolidated Statements of Comprehensive Income (Loss). Deposits with financial institutions at times exceed Federal Deposit Insurance Corporation insurance limits.

Fair Value of Financial Instruments

We invest in various financial instruments, which may include corporate and government bonds, notes, and commercial paper. We value these instruments at their fair value and monitor our portfolio for impairment on a periodic basis. In the event that the carrying value of an investment exceeds its fair value and the decline in value is determined to be other than temporary, we would record an impairment charge and establish a new carrying value. We assess other than temporary impairment of marketable securities in accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 820, “*Fair Value Measurements*.” The framework under the provisions of ASC 820 establishes three levels of inputs that may be used to measure fair value. Each level of input has different levels of subjectivity and difficulty involved in determining fair value.

Level 1 instruments generally represent quoted prices for identical assets or liabilities in active markets. Therefore, determining fair value for Level 1 instruments generally does not require significant management judgment, and the estimation is not difficult. Our Level 1 instruments consist of U.S. Government agency obligations, corporate notes and bonds, and commercial paper that are traded in active markets and are classified as Short-term marketable securities on our Consolidated Balance Sheets.

Level 2 instruments include inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices for identical instruments in markets that are not 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. Our Level 2 instruments consist of foreign currency exchange contracts entered into to hedge against fluctuation in the Japanese yen.

Level 3 instruments include unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. As a result, the determination of fair value for Level 3 instruments requires significant management judgment and subjectivity. We did not have any Level 3 instruments during the periods presented.

Foreign Exchange and Translation of Foreign Currencies

While our revenues and the majority of our expenses are denominated in U.S. dollars, we have international subsidiaries and branch operations that conduct some transactions in foreign currencies, and we collect an annual Japanese consumption tax refund in yen. Gains or losses from foreign exchange rate fluctuations on balances denominated in foreign currencies are reflected in Other expense, net. Realized gains or losses on foreign currency transactions were not significant for the periods presented.

We translate accounts denominated in foreign currencies in accordance with ASC 830, “*Foreign Currency Matters*,” using the current rate method under which asset and liability accounts are translated at the current rate, while stockholders' equity accounts are translated at the appropriate historical rates, and revenue and expense accounts are translated at average monthly exchange rates. Translation adjustments related to the consolidation of foreign subsidiary financial statements are reflected in Accumulated other comprehensive loss in Stockholders' equity (see "Note 11 - Changes in Stockholders' Equity and Accumulated Other Comprehensive Loss").

Derivative Financial Instruments

We mitigate foreign currency exchange rate risk by entering into foreign currency forward exchange contracts, details of which are presented in the following table:

	September 29, 2018	December 30, 2017
Total cost of contracts for Japanese yen (in thousands)	$ 1,955	$ 2,204
Number of contracts	2	2
Settlement month	June 2019	June 2018

Although these hedges mitigate our foreign currency exchange rate exposure from an economic perspective, they were not designated as "effective" hedges for accounting purposes and as such are adjusted to fair value through Other expense, net, with a gain of approximately $0.1 million for the fiscal quarter ended September 29, 2018 and a gain of approximately $0.1 million for the fiscal quarter ended December 30, 2017. We do not hold or issue derivative financial instruments for trading or speculative purposes.

Concentration Risk

Potential exposure to concentration risk may impact revenue, trade receivables, marketable securities, and supply of wafers for our products.

Customer concentration risk may impact revenue. The percentage of total revenue attributable to our top five identified end customers and largest identified end customer is presented in the following table:

	Three Months Ended		Nine Months Ended	
	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Revenue attributable to top five end customers	20%	23%	17%	28%
Revenue attributable to largest end customer	6%	5%	5%	9%

No end customer accounted for more than 10% of total revenue during these periods. We did not have enough information to assign end customers to approximately $1.3 million and $13.7 million of revenue recognized for the third quarter and first nine months, respectively, of fiscal 2018 on shipments to distributors that have not sold through to end customers.

Distributors have historically accounted for a significant portion of our total revenue. Revenue attributable to distributors as a percentage of total revenue is presented in the following table:

	Three Months Ended		Nine Months Ended	
	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Revenue attributable to distributors*	82%	80%	85%	75%

* During the first quarter of 2018, we updated our channel categories to group all forms of distribution into a single channel. Prior periods have been reclassified to match the current period presentation.

Our two largest distributor groups, Arrow Electronics, Inc. ("Arrow") and the Weikeng Group ("Weikeng"), also account for a substantial portion of our net trade receivables. At September 29, 2018 and December 30, 2017, Arrow accounted for 46% and 66%, respectively, and Weikeng accounted for 31% and 0%, respectively, of net trade receivables. No other distributor group or end customer accounted for more than 10% of net trade receivables at these dates.

Concentration of credit risk with respect to trade receivables is mitigated by our credit and collection process, including active management of collections, credit limits, routine credit evaluations for essentially all customers, and secure transactions with letters of credit or advance payments where appropriate. We regularly review our allowance for doubtful accounts and the aging of our accounts receivable.

Accounts receivable do not bear interest and are shown net of allowances for doubtful accounts of $0.4 million and $9.4 million at September 29, 2018 and December 30, 2017, respectively. The allowance for doubtful accounts reflects our best estimate of probable losses inherent in the accounts receivable balance. We determine the allowance based on assessment of known troubled accounts, analysis of the aging of our accounts receivable, historical experience, management judgment, and other currently available evidence. We write off accounts receivable against the allowance when we determine a balance is uncollectible and no longer actively pursue collection of the receivable. During the third quarter of fiscal 2018, we wrote off $9.0 million of accounts receivable from a bankrupt distributor group. We had recorded a full allowance on this amount in the third quarter of fiscal 2016, so there was no impact on Accounts Receivable, net in the current period. Bad debt expense was negligible for all periods presented.

We place our investments primarily through one financial institution and mitigate the concentration of credit risk by limiting the maximum portion of the investment portfolio which may be invested in any one instrument. Our investment policy defines approved credit ratings for investment securities. Investments on-hand in marketable securities consisted primarily of money market instruments, “AA” or better corporate notes and bonds and commercial paper, and U.S. government agency obligations. See "Note 4 - Marketable Securities" for a discussion of the liquidity attributes of our marketable securities.

We rely on a limited number of foundries for our wafer purchases, including Fujitsu Limited, Seiko Epson Corporation, Taiwan Semiconductor Manufacturing Company, Ltd, and United Microelectronics Corporation. We seek to mitigate the concentration of supply risk by establishing, maintaining and managing multiple foundry relationships; however, certain of our products are sourced from a single foundry and changing from one foundry to another can have a significant cost, among other factors.

Property and Equipment

Property and equipment are stated at cost. Depreciation and amortization are computed using the straight-line method for financial reporting purposes over the estimated useful lives of the related assets, generally three to five years for equipment and software, one to three years for tooling, and thirty years for buildings and building space. Leasehold improvements are amortized over the shorter of the non-cancelable lease term or the estimated useful life of the assets. Upon disposal of property and equipment, the accounts are relieved of the costs and related accumulated depreciation and amortization, and resulting gains or losses are reflected in the Consolidated Statements of Operations for recognized gains and losses or in the Consolidated Balance Sheets for deferred gains and losses. Repair and maintenance costs are expensed as incurred.

In August 2017, we sold building space which we owned in Shanghai, China for gross proceeds of approximately $7.9 million. The building space was vacated in fiscal 2015, upon consolidation of facilities to a single site in Shanghai following our acquisition of Silicon Image. As of the sale date, the building had a historical cost of $3.6 million, accumulated depreciation of $1.4 million and we incurred $1.1 million of direct selling costs, resulting in a net gain on sale of $4.6 million in the third quarter of fiscal 2017, which is presented as Gain on sale of building in our Consolidated Statements of Operations.

Sales of Assets and Business Units

On September 30, 2017, in conjunction with our June 2017 restructuring plan (see "Note 13 - Restructuring"), we sold 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business to an unrelated third party. The fair value of purchase price consideration was $5.3 million, which was comprised of $2.3 million of cash and a $3.0 million note receivable. In the third quarter of fiscal 2017, we recorded a $1.8 million loss on the sale, including a $2.2 million disposal of a relative fair value share of our goodwill, which is included in Other expense, net in the Consolidated Statements of Operations.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of the underlying net tangible and intangible assets. Goodwill is not amortized, but instead is tested for impairment annually or more frequently if certain indicators of impairment are present. We do not expect goodwill impairment to be tax deductible for income tax purposes.

In the second quarter of 2018, we made the strategic decision to discontinue our millimeter wave business. We determined that this action constituted a triggering event related to goodwill, and we evaluated our goodwill balance as of June 30, 2018. We concluded that goodwill was not impaired, and no impairment charges relating to goodwill were recorded for the first nine months of fiscal 2018. See Notes 6, 7, 8 and 13 regarding charges and costs related to the discontinuation of our millimeter wave business. No impairment charges relating to goodwill were recorded for the first nine months of fiscal 2017.

During the third quarter and first nine months of fiscal 2018, there have been no changes to the Goodwill balance of $267.5 million presented in our Annual Report on Form 10-K for the fiscal year ended December 30, 2017.

Variable Interest Entities and Equity Investments in Privately Held Companies

We have an interest in an entity that is a Variable Interest Entity ("VIE"). If we are the primary beneficiary of a VIE, we are required to consolidate it. To determine if we are the primary beneficiary, we evaluate whether we have the power to direct the activities that most significantly impact the VIE's economic performance and the obligation to absorb losses or the right to receive benefits of the VIE that could potentially be significant to the VIE. Our evaluation includes identification of significant activities and an assessment of our ability to direct those activities based on governance provisions and arrangements to provide or receive product and process technology, product supply, operations services, equity funding, financing, and other applicable agreements and circumstances. Our assessments of whether we are the primary beneficiary of our VIE requires significant assumptions and judgments. We have concluded that we are not the primary beneficiary of this VIE as we do not have the power to direct the activities that most significantly impact the VIE's economic performance.

Our equity investments in privately held companies, considered VIE's, that we are not required to consolidate are accounted for under the cost method, as assessed under ASC 325-20, "*Cost Method Investments*." These investments are reviewed on a quarterly basis to determine if their values have been impaired and adjustments are recorded as necessary. We assess the potential impairment of these investments by applying a fair value analysis using a revenue multiple approach. Declines in value that are judged to be other-than-temporary are reported in Other expense, net in the accompanying Consolidated Statements of Operations with a commensurate decrease in the carrying value of the investment (see "Note 9 - Cost Method Investment and Collaborative Arrangement"). Upon disposition of these investments, the specific identification method is used to determine the cost basis in computing realized gains or losses.

New Accounting Pronouncements

Recently Issued Accounting Standards

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*, which requires the recognition of assets and liabilities arising from lease transactions on the balance sheet and will also require significant additional disclosures about the amount, timing, and uncertainty of cash flows from leases. Substantially all leases, including current operating leases, will be recognized by lessees on their balance sheet as a lease asset for its right to use the underlying asset and a lease liability for the corresponding lease obligation. For public business entities, the standard is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Early application is permitted for all entities. ASU 2016-02 initially required entities to adopt the standard using a modified retrospective transition method. In July 2018, the FASB issued certain updates including ASU 2018-11, *Leases (Topic 842) Targeted Improvements*, which provide transition practical expedients allowing companies to adopt the new standard with a cumulative effect adjustment as of the beginning of the year of adoption with prior year comparative financial information and disclosures remaining as previously reported. We are currently evaluating the optional transition practical expedients, as well as the impact of the new guidance on our consolidated financial statements and related disclosures, including the increase in the assets and liabilities on our balance sheet, and the impact on our current lease portfolio from both a lessor and lessee perspective. To facilitate this, we are utilizing a comprehensive approach to review our lease portfolio, as well as assessing system requirements and control implications. We believe that we have sufficient time and resources to complete our implementation efforts no later than the first quarter of fiscal 2019.

In August 2017, the FASB issued ASU 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities*, which improves the financial reporting of hedging relationships to better portray the economic results of an entity's risk management activities in its financial statements and simplifies the application of the hedge accounting guidance. This standard is effective for annual periods beginning after December 15, 2018, including interim periods within those annual periods, with early adoption permitted. We are currently evaluating the impact of ASU 2017-12 on our consolidated financial statements and related disclosures.

In February 2018, the FASB issued ASU 2018-02, *Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*. The new guidance allows an entity to reclassify the income tax effects of the Public Law 115-97 "An Act to Provide Reconciliation Pursuant to Titles II and V of the Concurrent Resolution on the Budget for Fiscal Year 2018", commonly known as the Tax Cuts and Job Act of 2017 (the "2017 Tax Act") on items within accumulated other comprehensive income/(loss) to retained earnings. This new guidance is effective for fiscal years beginning after December 15, 2018, with early adoption permitted. The new standard must be adopted retrospectively to each period in which a taxpayer recognizes the effect of the change in the U.S. federal corporate income tax rate from the 2017 Tax Act. We are currently assessing the impact of ASU 2018-02 on our consolidated financial statements and related disclosures.

In June 2018, the FASB issued ASU No. 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*, which largely aligns the measurement and classification guidance for share-based payments to nonemployees with the guidance for share-based payments to employees. The ASU also clarifies that any share-based payment issued to a customer should be evaluated under ASC 606, *Revenue from Contracts with Customers*. The ASU requires a modified retrospective transition approach. This new guidance is effective for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year. We do not expect the adoption of this accounting standard update to have a material impact on our consolidated financial statements and related disclosures.

In August 2018, the FASB issued ASU 2018-15, *Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40)*, which clarifies the accounting for implementation costs in cloud computing arrangements. This guidance is effective for interim and annual reporting periods beginning after December 15, 2019, and early adoption is permitted. We are currently assessing the impact of ASU 2018-15 on our consolidated financial statements and related disclosures.

Note 2 - Revenue from Contracts with Customers

We adopted ASC 606 effective on December 31, 2017, the first day of our 2018 fiscal year, using the modified retrospective method. Under the guidance in effect prior to the adoption of ASC 606, we deferred the recognition of revenue and the cost of revenue from certain sales until the distributors of our products reported that they had sold the products to their customers (known as "sell-through" revenue recognition). Under ASC 606, we recognize revenue on sales to all distributors upon shipment and transfer of control. Under ASC 606, we will also recognize certain licensing revenues that were not recognizable under previous GAAP due to the fixed and determinable revenue recognition criteria not being met. As a result of this adoption, we revised our accounting policy for revenue recognition as detailed below.

We recognize revenue under the core principle of depicting the transfer of control to our customers in an amount reflecting the consideration we expect to be entitled. In order to achieve that core principle, we apply the following five step approach, as further described below: (1) identify the contract with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to each performance obligation in the contract, and (5) recognize revenue when applicable performance obligations are satisfied.

Product Revenue

Identify the contract with a customer - Our product revenues consist of sales to original equipment manufacturers, or OEMs, and distributors. We consider customer purchase orders, which in some cases are governed by master sales agreements, to be the contracts with a customer. In certain cases we consider firm forecasts that are agreed to by both us and the customer to be contracts. For sales to distributors, we have concluded that our contracts are with the distributor, rather than with the distributor's end customer, as we hold a contract bearing enforceable rights and obligations only with the distributor. As part of our consideration of the contract, we evaluate certain factors including the customer's ability to pay (or credit risk).

Identify the performance obligations in the contract - For each contract, we consider our promise to transfer each distinct product to be the identified performance obligations.

Determine the transaction price - In determining the transaction price, we evaluate whether the set contract price is subject to refund or adjustment to determine the net consideration to which we expect to be entitled. As our standard payment terms are less than one year, we have elected to apply the practical expedient to not assess whether a contract has a significant financing component.

Sales to most distributors are made under terms allowing certain price adjustments and limited rights of return of our products held in their inventory or upon sale to their end customers. Revenue from sales to distributors is recognized upon the transfer of control to the distributor, which generally occurs upon shipment of product to the distributor. Frequently, distributors need to sell at a price lower than the standard distribution price in order to win business. At the time the distributor invoices its customer or soon thereafter, the distributor submits a “ship and debit” price adjustment claim to us to adjust the distributor's cost from the standard price to the pre-approved lower price. After we verify that the claim was pre-approved, we issue a credit memo to the distributor for the ship and debit claim. In determining the transaction price, we consider ship and debit price adjustments to be variable consideration. Such price adjustments are estimated using the expected value method based on an analysis of historical ship and debit claims, at the distributor and product level, over a period of time considered adequate to account for current pricing and business trends. Any differences between the estimated consideration and the actual amount received from the customer is recorded in the period that the actual consideration becomes known. Most of our distributors are entitled to limited rights of return, referred to as stock rotation, not to exceed 5% of billings, net of returns and ship and debit price adjustments. Stock rotation reserves are based on historical return rates and recorded as a reduction to revenue with a corresponding reduction to cost of goods sold for the estimated cost of inventory that we expect to be returned.

Sales to OEMs and certain distributors are made under terms that do not include rights of return or price concessions after we ship the product. Accordingly, the transaction price equals the invoice price and there is no variable consideration.

Allocate the transaction price to each performance obligation in the contract - Because our product revenue contracts generally include the delivery of a certain quantity of semiconductors as the single performance obligation, we do not allocate revenue across distinct performance obligations. However, we frequently receive orders for products to be delivered over multiple dates that may extend across several reporting periods. We invoice for each delivery upon shipment and recognize revenues for each distinct product delivered, assuming transfer of control has occurred. Payment term for invoices are generally 30 to 60 days.

Recognize revenue when applicable performance obligations are satisfied - Revenue is recognized when control of the product is transferred to the customer (i.e., when our performance obligation is satisfied), which typically occurs at shipment. In determining whether control has transferred, we also consider if there is a present right to payment and legal title, along with whether the risks and rewards of ownership have transferred to the customer. We have certain vendor-managed inventory arrangements with certain OEM customers whereby we ship product into an inventory hub location but for which control does not transfer until the customer consumes the inventory. In such cases, we recognize revenue upon customer consumption.

Licensing and Services Revenue

Identify the contract with a customer - Our licensing and services revenue is comprised of revenue from our intellectual property ("IP") core licensing activity, patent monetization activities, and royalty and adopter fee revenue from our standards activities. These activities are complementary to our product sales and help us monetize our IP and accelerate marketing adoption curves associated with our technology and standards. We consider licensing arrangements with our customers to be the contract.

Identify the performance obligations in the contract - For each contract, we consider the promise to deliver a license that grants the customer the right to use the IP, as well as any professional services provided under the contract, as distinct performance obligations.

Determine the transaction price - Our HDMI and MHL standards revenue, as well as certain IP licenses, include variable consideration in the form of usage-based royalties. We apply the provisions of ASC 606 in accounting for these types of arrangements, whereby we do not include estimated royalties in the transaction price at the origination of the contract but rather recognize royalty revenue as usage occurs.

HDMI royalty revenue is determined by a contractual allocation formula agreed to by the Founders of the HDMI consortium. The contractual allocation formula is subject to periodic adjustment, generally every three years. The most recent royalty sharing formula covered the period from January 1, 2014 through December 31, 2016, and an interim agreement covering the period from January 1, 2017 through December 31, 2017 was signed in the second quarter of fiscal 2018. However, a new agreement covering the period beginning January 1, 2018 is yet to be signed. While a new royalty sharing agreement is being negotiated with the other Founders of the HDMI consortium, the HDMI agent is unable to distribute the majority of the royalties collected to the Founders. We are recording revenue based on our estimated share of the royalties, which we determine using an analytical model that combines historical and forecasted collection trends with our expected share of those collections. This estimate will be adjusted once the Founders finalize the agreement for the period beginning January 1, 2018.

Allocate the transaction price to each performance obligation in the contract - For contracts that include multiple performance obligations (most commonly those that include licenses and professional services), we allocate revenue to each performance obligation based on the best estimate of the standalone selling price of each obligation. We do not believe that the judgments regarding the allocation of revenue on licensing arrangements are material to our financial statements.

Recognize revenue when applicable performance obligations are satisfied - We recognize license revenue at the point in time that control of the license transfers to the customer, which is generally upon delivery. We recognize professional service revenue as we perform the services. Royalty revenues are recognized as customers sell products that include our IP and are legally obligated to remit royalties to us. We receive payments from customers based on contractual billing schedules. Accounts receivable are recorded when the right to consideration becomes unconditional. Payment terms on invoiced amounts are typically 30 days.

Impact on Financial Statements

We adopted ASC 606 on December 31, 2017 using the modified retrospective method. Under this transition method, we applied the provisions of the new standard to all open customer contracts as of the date of adoption and recorded the cumulative effect of adoption to Accumulated deficit on December 31, 2017. We have not restated any prior financial statements presented. ASC 606 requires us to disclose the effect of adoption on each financial statement line item in the current reporting period during 2018 as compared to the guidance that was in effect in 2017, and an explanation of the reasons for significant changes. Such information is as follows:

Condensed Consolidated Statement of Operations

	Three months ended September 29, 2018			Nine months ended September 29, 2018		
(In thousands, except per share data)	As reported under new standard	Adjustments	Pro forma as if previous standard was in effect	As reported under new standard	Adjustments	Pro forma as if previous standard was in effect
Product revenue	97,932	(1,302)	96,630	291,335	(13,651)	277,684
Licensing and services revenue	3,552	(1,525)	2,027	11,487	1,662	13,149
Cost of product revenue	43,120	144	43,264	137,430	(5,400)	132,030
Net income (loss)	6,974	(2,971)	4,003	(19,201)	(6,589)	(25,790)
Net income (loss) per share, basic and diluted	0.05	(0.02)	0.03	(0.15)	(0.06)	(0.21)

Condensed Consolidated Balance Sheets

	As of September 29, 2018		
(In thousands)	As reported under new standard	Adjustments	Pro forma as if previous standard was in effect
Accounts receivable, net of allowance for doubtful accounts	75,648	7,091	82,739
Inventories	66,381	25	66,406
Prepaid expenses and other current assets	24,143	(6,568)	17,575
Total assets	632,327	548	632,875
Accounts payable and accrued expenses (includes restructuring)	46,929	(887)	46,042
Deferred income and allowances on sales to distributors	—	35,425	35,425
Accumulated deficit	(469,662)	(33,990)	(503,652)
Total liabilities and stockholders' equity	632,327	548	632,875

Condensed Consolidated Statement of Cash Flows

	Nine months ended September 29, 2018		
(In thousands)	As reported under new standard	Adjustments	Pro forma as if previous standard was in effect
Cash flows from operating activities:			
Net loss	(19,201)	(6,589)	(25,790)
Accounts receivable, net	(18,736)	(8,899)	(27,635)
Inventories	13,892	(395)	13,497
Prepaid expenses and other assets	(11,729)	(947)	(12,676)
Accounts payable and accrued expenses (includes restructuring)	1,661	(1,345)	316
Deferred income and allowances on sales to distributors	—	18,175	18,175

The significant impacts of the new standard were to accelerate the recognition of revenues on both sales to certain distributors and certain licensing activities. As a result of adopting this standard, we recorded a cumulative effect adjustment of $27.4 million as a reduction to Accumulated deficit on December 31, 2017, resulting primarily from a net $20.2 million of previously deferred distributor revenues and costs and $6.6 million of previously unrecognized licensing revenues.

Other matters

We generally provide an assurance warranty that our products will substantially conform to the published specifications for twelve months from the date of shipment. In some case the warranty period may be longer than twelve months. We do not separately price or sell the assurance warranty. Our liability is limited to either a credit equal to the purchase price or replacement of the defective part. Returns under warranty have historically been immaterial. As such, we do not record a specific warranty reserve or consider activities related to such warranty, if any, to be a separate performance obligation.

Under the practical expedient provided by ASC 340, we generally expense sales commissions when incurred because the amortization period would have been less than one year. We record these costs within Selling, general and administrative expenses.

Substantially all of our performance obligations are satisfied within twelve months. Accordingly, under the optional exemption provided by ASC 606, we do not disclose revenues allocated to future performance obligations of partially completed contracts.

We do not have any material contract liabilities recorded as of September 29, 2018.

Contract assets relate to our rights to consideration for licenses and royalties due to us as a member of the HDMI consortium, with collection dependent on events other than the passage of time, such as collection of licenses and royalties from customers by the HDMI licensing agent and the finalization of a new royalty sharing agreement. The contract assets are recorded in Prepaid expenses and other current assets in our Consolidated Balance Sheets, and they are transferred to Accounts receivable when the rights become unconditional. In addition to collections related to current year revenue, we received $6.4 million in cash during the second quarter of fiscal 2018 for fiscal 2017 HDMI royalties as a result of the signing of the HDMI Founders royalty sharing agreement for 2017. Collection of this amount had no impact on our reported revenues as it had been accrued to our cumulative effect adjustment, and it was recorded as a reduction to the contract asset during the quarter received.

The following table summarizes the activity for our contract assets during the first nine months of fiscal 2018:

(In thousands)		
Balance as of December 31, 2017	$	7,515
Revenues recorded during the period		7,338
Transferred to accounts receivable or collected		(8,848)
Balance as of September 29, 2018	$	6,005

Disaggregation of revenue

The following tables provide information about revenue from contracts with customers disaggregated by major class of revenue and by geographical market, based on ship-to location of the end customer, where available, and ship-to location of distributor otherwise:

Major Class of Revenue	**Three Months Ended**		**Nine Months Ended**	
(In thousands)	**September 29, 2018**	**September 30, 2017 ***	**September 29, 2018**	**September 30, 2017 ***
Product revenue - Distributors	82,969	73,273	257,716	218,923
Product revenue - Direct	14,963	14,096	33,619	44,283
Licensing and services revenue	3,552	4,602	11,487	27,489
Total revenue	101,484	91,971	302,822	290,695

Revenue by Geographical Market	**Three Months Ended**		**Nine Months Ended**	
(In thousands)	**September 29, 2018**	**September 30, 2017 ***	**September 29, 2018**	**September 30, 2017 ***
Asia	76,927	68,677	226,747	207,081
Europe	11,873	10,972	36,177	32,631
Americas	12,684	12,322	39,898	50,983
Total revenue	101,484	91,971	302,822	290,695

* *As noted above, prior period amounts have not been adjusted under the modified retrospective method of adopting ASC 606 and, therefore, are presented under GAAP in effect during that period.*

Note 3 - Net Income (Loss) per Share

We compute basic Net income (loss) per share by dividing net income (loss) by the weighted average number of common shares outstanding during the period. To determine diluted share count, we apply the treasury stock method to determine the dilutive effect of outstanding stock option shares, restricted stock units ("RSUs"), and Employee Stock Purchase Plan ("ESPP") shares. Our application of the treasury stock method includes, as assumed proceeds, the average unamortized stock-based compensation expense for the period. When we are in a net loss position, we do not include dilutive securities as their inclusion would reduce the net loss per share.

A summary of basic and diluted Net income (loss) per share is presented in the following table:

	Three Months Ended		Nine Months Ended	
(in thousands, except per share data)	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Net income (loss)	$ 6,974	$ (43,052)	$ (19,201)	$ (63,349)
Shares used in basic Net income (loss) per share	127,816	122,990	125,578	122,393
Dilutive effect of stock options, RSUs and ESPP shares	1,658	—	—	—
Shares used in diluted Net income (loss) per share	129,474	122,990	125,578	122,393
Basic Net income (loss) per share	$ 0.05	$ (0.35)	$ (0.15)	$ (0.52)
Diluted Net income (loss) per share	$ 0.05	$ (0.35)	$ (0.15)	$ (0.52)

The computation of diluted Net income (loss) per share excludes the effects of stock options, RSUs, and ESPP shares that are antidilutive, aggregating approximately the following number of shares:

	Three Months Ended		Nine Months Ended	
(in thousands)	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Stock options, RSUs, and ESPP shares excluded as they are antidilutive	2,299	7,221	8,284	6,018

Stock options, RSUs, and ESPP shares are considered antidilutive when the aggregate of exercise price and unrecognized stock-based compensation expense are greater than the average market price for our common stock during the period or when we are in a net loss position, as the effects would reduce the loss per share. Stock options, RSUs, and ESPP shares that are antidilutive at September 29, 2018 could become dilutive in the future.

Note 4 - Marketable Securities

We classify our marketable securities as short-term based on their nature and availability for use in current operations. In the periods presented, our Short-term marketable securities consisted of government bonds with contractual maturities of up to two years. The following table summarizes the remaining maturities of our Short-term marketable securities at fair value:

(In thousands)	September 29, 2018	December 30, 2017
Short-term marketable securities:		
Maturing within one year	$ 7,435	$ 4,982
Maturing between one and two years	2,165	—
Total marketable securities	$ 9,600	$ 4,982

Note 5 - Fair Value of Financial Instruments

(In thousands)	Fair value measurements as of September 29, 2018				Fair value measurements as of December 30, 2017			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Short-term marketable securities	$ 9,600	$ 9,600	$ —	$ —	$ 4,982	$ 4,982	$ —	$ —
Foreign currency forward exchange contracts, net	105	—	105	—	77	—	77	—
Total fair value of financial instruments	$ 9,705	$ 9,600	$ 105	$ —	$ 5,059	$ 4,982	$ 77	$ —

We invest in various financial instruments that may include corporate and government bonds and notes, commercial paper, and certificates of deposit. In addition, we enter into foreign currency forward exchange contracts to mitigate our foreign currency exchange rate exposure. We carry these instruments at their fair value in accordance with ASC 820, "*Fair Value Measurements*." The framework under the provisions of ASC 820 establishes three levels of inputs that may be used to measure fair value. Each level of input has different levels of subjectivity and difficulty involved in determining fair value, as summarized in "Note 1 - Basis of Presentation and Significant Accounting Policies." There were no transfers between any of the levels during the first nine months of fiscal 2018 or 2017.

In accordance with ASC 320, "*Investments-Debt and Equity Securities*," we recorded an unrealized gain of less than $0.1 million during the nine months ended September 29, 2018 and an unrealized loss of approximately $0.1 million during the nine months ended September 30, 2017 on certain Short-term marketable securities (Level 1 instruments), which have been recorded in Accumulated other comprehensive loss. Future fluctuations in fair value related to these instruments that we deem to be temporary, including any recoveries of previous write-downs, would be recorded to Accumulated other comprehensive loss. If we were to determine in the future that any further decline in fair value is other-than-temporary, we would record an impairment charge, which could have a material adverse effect on our operating results. If we were to liquidate our position in these securities, it is likely that the amount of any future realized gain or loss would be different from the unrealized gain or loss reported in Accumulated other comprehensive loss.

Note 6 - Discontinuation of Business Unit

In the second quarter of 2018, we made the strategic decision to discontinue our millimeter wave business, which included certain assets related to our Wireless products, and our Board of Directors approved a related internal restructuring plan. This action was designed to improve profitability, reduce our infrastructure costs, and refocus on our core business activities. Approximately $24.0 million of total expense was recorded in our Consolidated Statements of Operations through the first nine months of fiscal 2018, including $11.9 million charged to Impairment of acquired intangible assets, $8.0 million charged to Cost of product revenue for inventory reserves, and $4.1 million charged to Restructuring charges for severance and other personnel costs, and for other asset restructuring. Notes 7, 8 and 13 provide further details on these charges and costs.

Note 7 - Inventories

(In thousands)	September 29, 2018	December 30, 2017
Work in progress	$ 47,122	$ 49,642
Finished goods	19,259	30,261
Total inventories	$ 66,381	$ 79,903

In the second quarter of 2018, we made the strategic decision to discontinue our millimeter wave business, which included certain wireless technology inventory items. As such, specific inventory reserves of $8.3 million were taken in that quarter on product lines that were eliminated with the discontinuation of our millimeter wave business and were charged to Cost of product revenue in the Consolidated Statements of Operations. In the third quarter of 2018, an adjustment of approximately $0.3 million was credited to Cost of product revenue, for a net charge of $8.0 million in the first nine months of fiscal 2018.

Note 8 - Intangible Assets

In connection with our acquisitions of Silicon Image, Inc. in March 2015 and SiliconBlue Technologies, Inc. in December 2011, we recorded identifiable intangible assets related to developed technology, customer relationships, licensed technology, patents, and in-process research and development based on guidance for determining fair value under the provisions of ASC 820, "*Fair Value Measurements*." Additionally, during fiscal 2015, we licensed additional third-party technology.

We monitor the carrying value of our intangible assets for potential impairment and test the recoverability of such assets whenever triggering events or changes in circumstances indicate that their carrying amounts may not be recoverable. When we are required to determine the fair value of intangible assets other than goodwill, we use the income approach. We start with a forecast of all expected net cash flows associated with the asset and then apply a discount rate to arrive at fair value.

During our review of our strategic long-range plan completed at the end of the third quarter of fiscal 2018, we concluded that a certain product line had limited future revenue potential due to a decline in customer demand for that product. We determined that this conclusion constituted an impairment indicator to the related specific developed technology intangible asset acquired in our acquisition of Silicon Image. Our assessment of the fair value of this intangible asset concluded that it had been fully impaired as of September 29, 2018, and we recorded an impairment charge of $0.6 million in the Consolidated Statements of Operations.

In the second quarter of 2018, we made the strategic decision to discontinue our millimeter wave business, which included certain wireless technology intangible assets. We determined that this action constituted an impairment indicator related to certain of the developed technology intangible assets acquired in our acquisition of Silicon Image. Our assessment of the fair value of these intangible assets concluded that they had been fully impaired as of June 30, 2018, and we recorded an impairment charge of $11.9 million in the Consolidated Statements of Operations.

In the third quarter of 2017, we updated our annual strategic long-range plan, which resulted in revised forecasts, and we also sold 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business to an unrelated third party. We determined that these activities constituted impairment indicators related to the developed technology intangible assets acquired in our acquisition of Silicon Image. Our assessment of the fair value of these intangible assets concluded that they had been impaired as of September 30, 2017, and we recorded a preliminary impairment charge of $36.2 million in the Consolidated Statements of Operations. The impairment charge recorded in the third quarter of 2017 was based on our best valuation estimate as of that period, and was revised during the fourth quarter of 2017 upon completion of a more detailed analysis of the fair value of these intangible assets.

In the first quarter of fiscal 2017, we sold a portfolio of patents that had been acquired in our acquisition of Silicon Image for $18.0 million. This amount was received in two installments over the first and second quarters of fiscal 2017, and was recognized as Licensing and services revenue in our Consolidated Statements of Operations during the respective periods in which the installment payments were received. As a result of this transaction, Intangible assets, net was reduced by approximately $3.5 million on our Consolidated Balance Sheets.

On our Consolidated Balance Sheets at September 29, 2018 and December 30, 2017, Intangible assets, net are shown net of accumulated amortization of $98.9 million and $100.3 million, respectively.

We recorded amortization expense related to intangible assets on the Consolidated Statements of Operations as presented in the following table:

	Three Months Ended		Nine Months Ended	
(In thousands)	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Research and development	$ 14	$ 128	$ 264	$ 442
Amortization of acquired intangible assets	3,823	8,526	13,982	25,777
	$ 3,837	$ 8,654	$ 14,246	$ 26,219

Note 9 - Cost Method Investment and Collaborative Arrangement

During fiscal 2015, we purchased a series of preferred stock ownership interests in a privately-held company that designs human-computer interaction technology for total consideration of $5.0 million. This gross investment constituted a 22.7% ownership interest. In the third quarter of fiscal 2016, we made an additional investment of $1.0 million via a convertible debt instrument, bringing our gross investment in the investee to $6.0 million.

In 2017, we signed new development and licensing contracts with the investee, and the investee incurred preferred debt that effectively subordinates our ownership position between their debt and common shareholders. After evaluating these events and our investment position, we concluded that we have a variable interest in the privately-held company. However, we are not the primary beneficiary of the investee, are not holding in-substance common stock, and do not have a significant amount of influence to direct the activities that most significantly impact the investee's economic performance. Accordingly, we account for our investment in this company under the cost method.

We assessed this investment for impairment as of September 29, 2018 by applying a fair value analysis using a revenue multiple approach and concluded that a $0.3 million impairment adjustment was necessary during the third quarter of fiscal 2018, which is the only impairment adjustment in the first nine months of fiscal 2018. For the third quarter and first nine months of fiscal 2017, we recorded impairment adjustments of approximately $0.2 million and $0.7 million, respectively. These impairment adjustments of a cost method investment are included in Other expense, net on our Consolidated Statements of Operations.

Through September 29, 2018, we have reduced the value of our investment by approximately $4.0 million. The net balance of our investment included in Other long-term assets in the Consolidated Balance Sheets is approximately $2.0 million.

At September 29, 2018, our maximum exposure to loss as a result of involvement with this VIE totals $5.3 million, which is comprised of the $2.0 million carrying value of our investment plus $3.3 million of prepaid royalties further described in the section below on the related collaborative arrangement.

Collaborative Arrangement

Concurrent with the initiation of the investment discussed above, we entered into a collaborative arrangement with the investee during fiscal 2015. Under this arrangement, the parties undertook the development of certain fast, multi-touch sensing devices for touch screen controller applications. This arrangement was modified in 2017, and we entered into new service and licensing agreements that provided for: (i) the assignment of certain Intellectual Property ("IP") from the investee to us, (ii) a license of certain IP from the investee to us, (iii) payment of royalties between the parties for future sales of co-developed products, (iv) the performance of certain services for each other at no additional charge. We have agreed to make quarterly minimum payments to the investee, which will be automatically credited against any future revenue share amount owed to investee under the agreements and will be accounted for as prepaid royalties under ASC 340. In each of the first three quarters of fiscal 2018, we made quarterly payments of $0.9 million. As of September 29, 2018, expected future royalty prepayments are as follows:

Fiscal year		*(in thousands)*
2018 (remaining 3 months)	$	875
2019	$	5,000

At September, 2018, royalties prepaid to the investee total $3.3 million, which is included in Other long-term assets in our Consolidated Balance Sheets. We have not recorded a liability related to the future payments, as the agreement is cancelable.

Note 10 - Accounts Payable and Accrued Expenses

Included in Accounts payable and accrued expenses are the following balances:

(In thousands)		**September 29, 2018**		**December 30, 2017**
Trade accounts payable	$	26,150	$	35,350
Liability for non-cancelable contracts		7,471		7,232
Deferred rent		3,809		3,834
Other accrued expenses (includes restructuring)		9,499		7,989
Total accounts payable and accrued expenses	$	46,929	$	54,405

Note 11 - Changes in Stockholders' Equity and Accumulated Other Comprehensive Loss

(In thousands, except par value data)	Common Stock ($.01 par value) Shares	Common Stock ($.01 par value) Amount	Additional Paid-in capital	Accumulated deficit	Accumulated other comprehensive loss	Total
Balances, December 30, 2017	123,895	$ 1,239	$ 695,768	$ (477,862)	$ (1,452)	$ 217,693
Net loss for the nine months ended September 29, 2018	—	—	—	(19,201)	—	(19,201)
Unrealized gain related to marketable securities, net of tax	—	—	—	—	16	16
Recognized gain on redemption of marketable securities, previously unrealized	—	—	—	—	(18)	(18)
Translation adjustments, net of tax	—	—	—	—	(1,124)	(1,124)
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of tax	5,380	54	26,397	—	—	26,451
Stock-based compensation related to stock options, ESPP and RSUs	—	—	9,908	—	—	9,908
Accounting method transition adjustment (1)	—	—	—	27,401	—	27,401
Balances, September 29, 2018	129,275	$ 1,293	$ 732,073	$ (469,662)	$ (2,578)	$ 261,126

(1) As of the beginning of fiscal 2018, we adopted ASC 606, *Revenue from Contracts With Customers,* using the modified retrospective transition method. As a result of this adoption, we recorded a cumulative-effect adjustment to Accumulated Deficit, as shown in the table above.

Note 12 - Income Taxes

For the three months ended September 29, 2018, we recorded an income tax expense of less than $0.1 million, and for the three months ended September 30, 2017, we recorded an income tax benefit of approximately $0.3 million. For the nine months ended September 29, 2018 and September 30, 2017, we recorded an income tax expense of approximately $2.0 million and $0.2 million, respectively. Income taxes for the three and nine month periods ended September 29, 2018 and September 30, 2017 represent tax at the federal, state, and foreign statutory tax rates adjusted for withholding taxes, changes in uncertain tax positions, changes in the U.S. valuation allowance, as well as other non-deductible items in the United States and foreign jurisdictions. The difference between the U.S. federal statutory tax rate of 21% and our effective tax rate for the three and nine months ended September 29, 2018 results from (a) an increase in the valuation allowance that offsets expected tax benefit in the United States, (b) foreign rate differential and withholding taxes, (c) zero tax rate in Bermuda (which results in no tax benefit for the pretax loss in Bermuda), and (d) a discrete benefit from the release of uncertain tax positions.

Through September 29, 2018, we continued to evaluate the valuation allowance position in the United States and concluded we should maintain a valuation allowance against the net federal and state deferred tax assets. We will continue to evaluate both positive and negative evidence in future periods to determine if we should recognize more deferred tax assets. We don't have a valuation allowance in any foreign jurisdictions as we have concluded it is more likely than not that we will realize the net deferred tax assets in future periods.

We are subject to federal and state income tax as well as income tax in the various foreign jurisdictions in which we operate. Additionally, the years that remain subject to examination are 2015 for federal income taxes, 2013 for state income taxes, and 2011 for foreign income taxes, including years ending thereafter. However, to the extent allowed by law, the tax authorities may have the right to examine prior periods where net operating losses or tax credits were generated and carried forward, and make adjustments up to the amount of the net operating losses or credit carryforward amount. Our income tax returns are under examination in China for 2016 through 2018, and in the Philippines for 2016.

We believe that it is reasonably possible that $1.6 million of unrecognized tax benefits and $0.1 million of associated interest and penalties could be recognized during the next twelve months. The $1.7 million potential change would represent a decrease in unrecognized tax benefits, comprised of items related to tax filings for years that will no longer be subject to examination under expiring statutes of limitations.

At December 30, 2017, we had U.S. federal net operating loss ("NOL") carryforwards (pretax) of approximately $351.4 million that expire at various dates between 2018 and 2037. We had state NOL carryforwards (pretax) of approximately $162.9 million that expire at various dates from 2018 through 2037. We also had federal and state credit carryforwards of $50.2 million and $59.2 million, respectively. Of the total $59.2 million state credit carryforwards, $57.9 million do not expire. The remaining credits expire at various dates from 2018 through 2037.

Our liability for uncertain tax positions (including penalties and interest) was $26.4 million and $26.9 million at September 29, 2018 and December 30, 2017, respectively, and is recorded as a component of Other long-term liabilities on our Consolidated Balance Sheets. The remainder of our uncertain tax position exposure of $25.9 million is netted against deferred tax assets.

The Tax Cuts and Jobs Act (the "2017 Tax Act"), enacted December 22, 2017, contains provisions that affect us, but the impact will be absorbed by utilizing NOL carryforwards. Reduction of the corporate tax rate from 35% to 21% reduced the value of our domestic deferred tax assets and reduced our associated full valuation allowance on those assets, resulting in no net impact on our Consolidated Statements of Operation.

U.S. tax reform required a deemed repatriation of deferred foreign earnings as of December 30, 2017 and no future U.S. taxes should be due on these earnings because of enactment of a 100% dividends received deduction. At December 30, 2017, we had no impact from this transition tax due to utilization of NOL carryforwards. Foreign earnings may be subject to withholding taxes if they are distributed and repatriated in the United States.

In March 2018, the FASB issued ASU 2018-05, *Income Taxes (Topic 740): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118* ("SAB 118"). The SEC issued SAB 118 on December 22, 2017 to address the situation where an SEC reporting company did not have all the necessary information available or analyzed to complete their accounting for the income tax effects of the 2017 Tax Act in the period of enactment. Due to the lack of authoritative guidance issued, complexity, and enactment timing of the 2017 Tax Act, we made a reasonable estimate of the income tax effect of the deemed repatriation of deferred foreign earnings. We may refine this as additional guidance, clarification, and analysis is available. Any changes to our estimate will be reflected in continuing operations in the period the amounts are determined and within the “measurement period” not-to-exceed one year allowed under SAB 118. As of September 29, 2018, we have not completed our accounting for the tax effect of the 2017 Tax Act, and we have made no change to the provisional amounts recorded at December 30, 2017.

We are not currently paying U.S. federal income taxes and do not expect to pay such taxes until we fully utilize our tax NOL and credit carryforwards. We expect to pay a nominal amount of state income tax. We are paying foreign income and withholding taxes, which are reflected in Income tax expense (benefit) in our Consolidated Statements of Operations and are primarily related to the cost of operating offshore activities and subsidiaries. We accrue interest and penalties related to uncertain tax positions in Income tax expense (benefit).

Note 13 - Restructuring

In June 2018, our Board of Directors approved an internal restructuring plan (the "June 2018 Plan"), which included the discontinuation of our millimeter wave business and the use of certain assets related to our Wireless products, and a workforce reduction. The June 2018 Plan is designed to reduce our infrastructure costs and refocus on our core business activities. Approximately $4.1 million of restructuring expense has been incurred through September 29, 2018 under the June 2018 Plan, and we believe this amount approximates the total costs under the plan and that this plan is substantially complete.

In June 2017, our Board of Directors approved an internal restructuring plan (the "June 2017 Plan"), which included the sale of 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business, a worldwide workforce reduction, and an initiative to reduce our infrastructure costs. These actions are part of an overall plan to achieve financial targets and to enhance our financial and competitive position by better aligning our revenue and operating expenses. Under this plan, approximately $0.1 million and $3.1 million of expense was incurred during the three months ended September 29, 2018 and September 30, 2017, respectively, and approximately $1.4 million and $5.5 million of expense was incurred during the nine months ended September 29, 2018 and September 30, 2017, respectively. Approximately $9.4 million of total expense has been incurred through September 29, 2018 under the June 2017 Plan. We expect the total cost to be approximately $21.5 million to $23.0 million and that it will be substantially completed by the end of the first quarter of fiscal 2019.

In September 2015, we implemented a reduction of our worldwide workforce (the "September 2015 Reduction") separate from the March 2015 Plan described below. The September 2015 Reduction was designed to resize the company in line with the market environment and to better balance our workforce with the long-term strategic needs of our business. The September 2015 Reduction is substantially complete subject to certain remaining expected costs that we do not expect to be material, which we will expense as incurred. Under this reduction, no expense was incurred during either of the three month periods ended September 29, 2018 and September 30, 2017, and no expense and approximately $0.7 million of credit was incurred during the nine months ended September 29, 2018 and September 30, 2017, respectively. Approximately $7.2 million of total expense has been incurred through September 29, 2018 under the September 2015 Reduction, and we believe this amount approximates the total costs under the plan.

In March 2015, our Board of Directors approved an internal restructuring plan (the "March 2015 Plan"), in connection with our acquisition of Silicon Image. The March 2015 Plan was designed to realize synergies from the acquisition by eliminating redundancies created as a result of combining the two companies. This included reductions in our worldwide workforce, consolidation of facilities, and cancellation of software contracts and engineering tools. The March 2015 Plan is substantially complete subject to certain remaining expected costs that we do not expect to be material and any changes in sublease assumptions should they occur, which we will expense as incurred. Under this plan, no expense was incurred during either of the three month periods ended September 29, 2018 and September 30, 2017, respectively, and no expense and approximately $0.1 million of credit was incurred during the nine months ended September 29, 2018 and September 30, 2017, respectively. Approximately $20.5 million of total expense has been incurred through September 29, 2018 under the March 2015 Plan, and we believe this amount approximates the total costs under the plan.

Substantially all of the expenses recorded in the periods presented were under the June 2017 and June 2018 Plans. These expenses were recorded to Restructuring charges on our Consolidated Statements of Operations.

The restructuring accrual balance is presented in Accounts payable and accrued expenses (includes restructuring) on our Consolidated Balance Sheets. The following table displays the combined activity related to the restructuring actions described above:

(In thousands)	Severance & related *	Lease Termination & Fixed Assets	Software Contracts & Engineering Tools **	Other	Total
Balance at December 31, 2016	$ 801	$ 1,036	$ 25	$ 12	$ 1,874
Restructuring charges	2,433	816	686	778	4,713
Costs paid or otherwise settled	(1,707)	(897)	(711)	(771)	(4,086)
Balance at September 30, 2017	$ 1,527	$ 955	$ —	$ 19	$ 2,501
Balance at December 30, 2017	$ 1,192	$ 870	$ 360	$ 25	$ 2,447
Restructuring charges	4,034	437	913	111	5,495
Costs paid or otherwise settled	(4,662)	(667)	(1,055)	(113)	(6,497)
Balance at September 29, 2018	$ 564	$ 640	$ 218	$ 23	$ 1,445

* Includes employee relocation costs and retention bonuses
** Includes cancellation of contracts

Note 14 - Long-Term Debt

On March 10, 2015, we entered into a secured credit agreement (the "Credit Agreement") with Jefferies Finance, LLC and certain other lenders for purposes of funding, in part, our acquisition of Silicon Image. The Credit Agreement provided for a $350 million term loan (the "Term Loan") maturing on March 10, 2021 (the "Term Loan Maturity Date"). We received $346.5 million net of an original issue discount of $3.5 million and we paid debt issuance costs of $8.3 million. The Term Loan bears variable interest equal to the one-month LIBOR, subject to a 1.00% floor, plus a spread of 4.25%. The current effective interest rate on the Term Loan is 7.03%.

The Term Loan is payable through a combination of (i) quarterly installments of approximately $0.9 million, (ii) annual excess cash flow payments as defined in the Credit Agreement, which are due 95 days after the last day of our fiscal year, and (iii) any payments due upon certain issuances of additional indebtedness and certain asset dispositions, with any remaining outstanding principal amount due and payable on the Term Loan Maturity Date. The percentage of excess cash flow we are required to pay ranges from 0% to 75%, depending on our leverage and other factors as defined in the Credit Agreement. Currently, the Credit Agreement would require a 75% excess cash flow payment.

In the first quarter of fiscal 2018, we made a required quarterly installment payment of $0.9 million. In the second quarter of fiscal 2018, we made a required excess cash flow payment of $0.2 million, a required quarterly installment payment of $0.9 million, and an additional $10.0 million principal payment. In the third quarter of fiscal 2018, we made a required quarterly installment payment of $0.9 million, and an additional $15.0 million principal payment. Over the next twelve months, our principal payments will be comprised mainly of regular quarterly installments, a required annual excess cash flow payment, and we could make any discretionary payments we deem appropriate.

While the Credit Agreement does not contain financial covenants, it does contain informational covenants and certain restrictive covenants, including limitations on liens, mergers and consolidations, sales of assets, payment of dividends, and indebtedness. We were in compliance with all such covenants in all material respects at September 29, 2018.

The original issue discount and the debt issuance costs have been accounted for as a reduction to the carrying value of the Term Loan on our Consolidated Balance Sheets and are being amortized to Interest expense in our Consolidated Statements of Operations over the contractual term, using the effective interest method.

The fair value of the Term Loan approximates the carrying value, which is reflected in our Consolidated Balance Sheets as follows:

(In thousands)	September 29, 2018	December 30, 2017
Principal amount	$ 278,908	$ 306,791
Unamortized original issue discount and debt costs	(3,769)	(5,616)
Less: Current portion of long-term debt	(14,104)	(1,508)
Long-term debt	$ 261,035	$ 299,667

Interest expense related to the Term Loan was included in Interest expense on our Consolidated Statements of Operations as follows:

	Three Months Ended		Nine Months Ended	
(In thousands)	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Contractual interest	$ 4,711	$ 3,492	$ 14,001	$ 12,202
Amortization of debt issuance costs and discount	789	326	1,847	1,680
Total interest expense related to the Term Loan	$ 5,500	$ 3,818	$ 15,848	$ 13,882

As of September 29, 2018, expected future principal payments on the Term Loan were as follows:

Fiscal year	*(in thousands)*
2018 (remaining 3 months)	$ 875
2019	15,914
2020	56,175
2021	205,944
	$ 278,908

Note 15 - Stock-Based Compensation

Total stock-based compensation expense included in our Consolidated Statements of Operations is presented in the following table:

	Three Months Ended		Nine Months Ended	
(In thousands)	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Cost of products sold	$ 219	$ 154	$ 652	$ 562
Research and development	926	980	2,970	4,129
Selling, general, and administrative	1,563	1,380	6,286	4,595
Total stock-based compensation	$ 2,708	$ 2,514	$ 9,908	$ 9,286

The stock-based compensation expense included in Selling, general, and administrative expense for the first nine months of fiscal 2018 includes approximately $1.4 million of additional one-time expense for acceleration of stock compensation under the CEO separation agreement executed with our former CEO during the first quarter of fiscal 2018.

Performance-Based Stock Compensation

In fiscal years 2015 through 2017, we granted stock options and RSUs with a market condition to certain executives. The options have a two year vesting period and can vest between 0% and 200% of the target amount, based on the Company's relative Total Shareholder Return ("TSR") when compared to the TSR of a component of companies in the PHLX Semiconductor Sector Index over a two year period. Under the terms of the grants, executives will receive the target amount if the Company’s TSR relative to that of the Index achieves or exceeds the 50^{th} percentile. Executives may receive 200% if the Company’s TSR exceeds the 75^{th} percentile. No vesting occurs if the Company’s TSR does not exceed the 25^{th} percentile. TSR is a measure of stock price appreciation plus dividends paid, if any, in the performance period. The fair values of the options and RSUs were determined and fixed on the date of grant using a lattice-based option-pricing valuation model incorporating a Monte-Carlo simulation and a consideration of the likelihood that we would achieve the market condition.

In September 2018, we granted inducement awards outside of, but subject to the terms and conditions of the Company’s stockholder approved equity compensation plan to our incoming President and Chief Executive Officer. The inducement awards included market and performance based restricted stock that vest and become payable upon satisfaction of certain market and performance conditions. The market and performance conditions include TSR and Adjusted EBITDA targets, respectively. The TSR based awards vest and become payable over a three-year period based on the Company’s TSR relative to the PHLX Semiconductor Sector Index, with 100% of the units vesting at the 50th percentile and a multiplier to 250% of the units vesting at the 75th percentile achievement, zero vesting if relative TSR is below the 25th percentile, and vesting scaling linearly for achievement between the 25th and 75th percentile. The Adjusted EBITDA based awards will vest and become payable based upon the Company’s generating specified “adjusted” EBITDA levels on a trailing four quarter basis in any two consecutive trailing four-quarter periods.

In September 2018, we granted inducement awards outside of, but subject to the terms and conditions of the Company’s stockholder approved equity compensation plan to our incoming Corporate Vice President of Research and Development. The inducement awards included performance based restricted stock that would vest and become payable upon achievement of a target TSR. The awards vest and become payable over a three-year period based on the Company’s TSR relative to the PHLX Semiconductor Sector Index, with 100% of the units vesting at the 50th percentile and a multiplier to 200% of the units vesting at the 75th percentile achievement, zero vesting if relative TSR is below the 25th percentile, and vesting scaling linearly for achievement between the 25th and 75th percentile.

The following table summarizes the activity for our stock options and RSUs with a performance condition during the first nine months of fiscal 2018:

(Shares in thousands)	Unvested	Vested	Total
Balance, December 30, 2017	707	83	790
Granted	573	—	573
Vested	(31)	31	—
Exercised	—	(78)	(78)
Canceled	(429)	(10)	(439)
Balance, September 29, 2018	820	26	846

We incurred stock compensation expense related to these market condition awards of approximately $0.1 million and $0.6 million in the third quarter and first nine months, respectively, of fiscal 2018 and of approximately $0.1 million and $0.4 million in the third quarter and first nine months, respectively, of fiscal 2017, which is recorded as a component of total stock-based compensation expense.

Note 16 - Contingencies

Legal Matters

From time to time, we are exposed to certain asserted and unasserted potential claims. Periodically, we review the status of each significant matter and assess its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and a range of possible losses can be estimated, we then accrue a liability for the estimated loss. Legal proceedings are subject to uncertainties, and the outcomes are difficult to predict. Because of such uncertainties, accruals are based only on the best information available at the time. As additional information becomes available, we reassess the potential liability related to pending claims and litigation and may revise estimates.

Other Matters

We maintain certain Value-Added Tax ("VAT") benefits derived from our research and development operations that require filing tax exempt status documentation with local taxing authorities. In relation to one of our Chinese legal entities, we are undergoing an audit of this documentation as of September 29, 2018. Due to the uncertainty in both the outcome and the estimated range of any findings, no liability has been accrued as of September 29, 2018. We believe the findings would not have a material impact on our Consolidated Financial Statements and could be in a range from $0 to less than $2 million.

Note 17 - Segment and Geographic Information

Segment Information

In the three and nine month periods ended September 29, 2018 and September 30, 2017, respectively, Lattice had one operating segment: the core Lattice business, which includes semiconductor devices, evaluation boards, development hardware, and related intellectual property licensing and sales.

Geographic Information

Our revenue by major geographic area is presented in "Note 2 - Revenue from Contracts with Customers".

Our Property and equipment, net by country at the end of each period was as follows:

(In thousands)	September 29, 2018	December 30, 2017
United States	$ 27,893	$ 30,338
China	2,357	4,632
Philippines	3,472	3,883
Taiwan	1,062	958
Japan	319	313
Other	621	299
Total foreign property and equipment, net	7,831	10,085
Total property and equipment, net	$ 35,724	$ 40,423

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

Overview

Lattice Semiconductor and its subsidiaries (“Lattice,” the “Company,” “we,” “us,” or “our”) develops semiconductor technologies that we monetize through products, solutions, and licenses. We engage in smart connectivity solutions, providing intellectual property ("IP") and low-power, small form-factor devices that enable global customers to quickly and easily develop innovative, smart, and connected products. We help their products become more aware, interact more intelligently, and make better and faster connections. In an increasingly intense global technology market, we help our customers get their products to market faster than their competitors. Our broad end-market exposure extends from mobile devices and consumer electronics to industrial and automotive equipment, communications and computing infrastructure, and licensing. Lattice was founded in 1983 and is headquartered in Portland, Oregon.

Discontinuation of millimeter wave business

In the second quarter of 2018, we made the strategic decision to discontinue our millimeter wave business, which included certain assets related to our Wireless products, and our Board of Directors approved a related internal restructuring plan. This action was designed to improve profitability, reduce our infrastructure costs, and refocus on our core business activities. Approximately $24.0 million of total expense was recorded in our Consolidated Statements of Operations through the first nine months of fiscal 2018, including $11.9 million charged to Impairment of acquired intangible assets, $8.0 million charged to Cost of product revenue for inventory reserves, and $4.1 million charged to Restructuring charges for severance and other personnel costs, and for other asset restructuring. See Notes 6, 7, 8 and 13 to our consolidated financial statements presented in Part 1, Item 1 of this Report for additional details.

Critical Accounting Policies and Use of Estimates

Critical accounting policies are those that are both most important to the portrayal of a company's financial condition and results and require management's most difficult, subjective, and complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain.

Other than our updated policies related to revenue recognition and accounting for costs to obtain and fulfill a customer contract (further discussed in "Note 2 - Revenue from Contracts with Customers" under Part 1, Item 1 of this Report), management believes that there have been no significant changes to the items that we disclosed as our critical accounting policies and estimates in Management's Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on form 10-K for the fiscal year ended December 30, 2017.

The preparation of financial statements in conformity with U.S. generally accepted accounting principles ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts and classification of assets, such as marketable securities, accounts receivable, contract assets included in prepaid expenses and other current assets, inventory, goodwill (including the assessment of reporting unit), intangible assets, current and deferred income taxes, accrued liabilities (including restructuring charges and bonus arrangements), disclosure of contingent assets and liabilities at the date of the financial statements, amounts used in acquisition valuations and purchase accounting, impairment assessments, the fair value of equity awards, and the reported amounts of product revenue, licensing and services revenue, and expenses during the fiscal periods presented. Actual results could differ from those estimates.

Results of Operations

Key elements of our Consolidated Statements of Operations are presented in the following table:

	Three Months Ended				Nine Months Ended			
(In thousands)	September 29, 2018		September 30, 2017 *		September 29, 2018		September 30, 2017 *	
Revenue	$ 101,484	100.0%	$ 91,971	100.0 %	$ 302,822	100.0 %	$ 290,695	100.0 %
Gross margin	58,364	57.5	53,322	58.0	165,133	54.5	165,363	56.9
Research and development	19,131	18.9	25,648	27.9	63,153	20.9	79,857	27.5
Selling, general and administrative	21,775	21.5	21,290	23.1	69,886	23.1	67,133	23.1
Amortization of acquired intangible assets	3,823	3.8	8,526	9.3	13,982	4.6	25,777	8.8
Restructuring charges	90	0.1	3,071	3.3	5,495	1.8	4,713	1.6
Acquisition related charges	—	—	681	0.7	1,531	0.5	3,208	1.1
Impairment of intangible assets	586	0.6	36,198	39.4	12,486	4.1	36,198	12.5
Gain on sale of building	—	—	(4,624)	(5.0)	—	—	(4,624)	(1.6)
Income (loss) from operations	$ 12,959	12.8%	$ (37,468)	(40.7)%	$ (1,400)	(0.5)%	$ (46,899)	(16.1)%

** Results for periods in 2017 are presented in accordance with ASC 605, which was in effect during that fiscal year.*

We adopted ASC 606, *Revenue from Contracts with Customers*, on December 31, 2017 using the modified retrospective method. We have not restated any prior financial statements presented. See "Note 2 - Revenue from Contracts with Customers" to our consolidated financial statements and the Revenue discussions, below, for the impact of the adoption of ASC 606.

Effective April 17, 2018, we were restricted from selling to ZTE Kangzun Telecom Co. Ltd. (“ZTE”) due to sanctions imposed by the United States Department of Commerce. We believe that this will not have a material effect on either our total revenue or our revenue in Asia, as revenue from ZTE accounted for less than 3% of our total revenue in the first quarter of fiscal 2018. In July 2018, the Department of Commerce lifted the sanctions, subject to ZTE meeting certain requirements. We anticipate that we will continue sales to ZTE after it has done so, though we cannot predict whether the financial and other penalties imposed on ZTE will have a negative impact on future orders.

Revenue by End Market

The end market data below is derived from data provided to us by our distributors and end customers. With a diverse base of customers who may manufacture end products spanning multiple end markets, the assignment of revenue to a specific end market requires the use of estimates and judgment. Therefore, actual results may differ from those reported.

Under ASC 606, we recognize certain revenue for which end customers and end markets are not yet known. We assign this revenue first to a specific end market using historical and anticipated usage of the specific products, if possible, and allocate proportionally to the end markets if we cannot identify a specific end market.

Our Licensing and services end market includes revenue from the licensing of our IP, the collection of certain royalties, patent sales, the revenue related to our participation in consortia and standard-setting activities, and services. While Licensing products are primarily sold into the Mobile and Consumer market, Licensing and services revenue is reported as a separate end market as it has characteristics that differ from other categories, most notably its higher gross margin.

The following are examples of end market applications:

Communications and Computing	Mobile and Consumer	Industrial and Automotive	Licensing and Services
Wireless	Smartphones	Security and Surveillance	IP Royalties
Wireline	Cameras	Machine Vision	Adopter Fees
Data Backhaul	Displays	Industrial Automation	IP Licenses
Computing	Tablets	Human Computer Interaction	Patent Sales
Servers	Wearables	Automotive	Testing Services
Data Storage	Televisions and Home Theater	Drones	

The composition of our revenue by end market is presented in the following table:

	Three Months Ended				Nine Months Ended			
(In thousands)	September 29, 2018		September 30, 2017 *		September 29, 2018		September 30, 2017 *	
Communications and Computing	$ 32,883	32%	$ 27,545	30%	$ 90,536	30%	$ 84,594	29%
Mobile and Consumer	26,974	27	25,901	28	77,980	26	82,819	29
Industrial and Automotive	38,075	37	33,923	37	122,819	40	95,793	33
Licensing and Services	3,552	4	4,602	5	11,487	4	27,489	9
Total revenue	$ 101,484	100%	$ 91,971	100%	$ 302,822	100%	$ 290,695	100%

** Results for periods in 2017 are presented in accordance with ASC 605, which was in effect during that fiscal year.*

Revenue from the Communications and Computing end market increased by 19% for the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017 and by 7% for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017 due to continued demand increases for server reference design products, partially offset by the discontinuation of our millimeter wave business.

Revenue from the Mobile and Consumer end market increased by 4% for the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017 due to increased demand for home automation and handset screen replacement products. Revenue from the Mobile and Consumer end market decreased by 6% for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017 due to a decline in demand for products supporting a major handset manufacturer, partially offset by increased demand for home automation and handset screen replacement products.

Revenue from the Industrial and Automotive end market increased by 12% for the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017 and by 28% for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017 due to broad market increases in the Industrial end market as well as growth from the products supporting industrial video applications and factory automation robotics applications.

Revenue from the Licensing and Services end market decreased by 23% for the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017 primarily due to the absence of revenue from Simplay Labs testing activities after the sale of certain assets related to that business unit at the end of the third quarter of fiscal 2017. Revenue from the Licensing and Services end market decreased by 58% for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017 predominantly due to revenue from a patent sale in the first half of fiscal 2017 that did not recur in the current period, and by the absence of revenue from Simplay Labs testing activities after the sale of certain assets related to that business unit at the end of the third quarter of fiscal 2017. These decreases are partially offset by HDMI royalties that we recognized as revenue in the third quarter and first nine months of fiscal 2018 under ASC 606 but were not able to recognize in the comparable periods of fiscal 2017 under the previous guidance.

We share HDMI royalties with the other HDMI Founders based on an allocation formula, which is reviewed every three years. The most recent royalty sharing formula covered the period from January 1, 2014 through December 31, 2016, and an interim agreement covering the period from January 1, 2017 through December 31, 2017 was signed in the second quarter of fiscal 2018. However, a new agreement covering the period beginning January 1, 2018 is yet to be signed. As a result of the signing of the HDMI Founders royalty sharing agreement for 2017, we received $6.4 million in cash during the second quarter of fiscal 2018 for fiscal 2017 HDMI royalties. Collection of this amount had no impact on our reported revenues and was recorded as a reduction to the contract asset recorded in Prepaid expenses and other current assets in our Consolidated Balance Sheets. This contract asset was recorded in the first quarter of fiscal 2018 with an offset to Accumulated deficit as a cumulative effect adjustment for the adoption of ASC 606.

HDMI royalties are considered variable consideration under the new revenue standard and recognized as royalty revenue as usage occurs. While a new royalty sharing agreement is being negotiated with the other Founders of the HDMI consortium for fiscal 2018, we are estimating our share of royalty revenues under an anticipated new agreement. Before the HDMI royalty sharing agreement is signed, we estimate that we will recognize $1 million to $2 million of additional licensing and services revenue every quarter under ASC 606 that we would not have recognized under previous guidance. Once the HDMI royalty sharing agreement is signed, ongoing fiscal 2018 HDMI royalty revenue recognition under both ASC 606 and previous guidance will be consistent.

For the third quarter of fiscal 2018, adoption of ASC 606 increased our revenues by $2.8 million compared to revenue that would have been recognized under previous guidance. This was comprised of a $1.3 million increase due to the acceleration of revenue recognition on sales to certain distributors, with $0.2 million attributed to Communications and Computing, $0.7 million attributed to Mobile and Consumer, and $0.4 million attributed to Industrial and Automotive. An additional $1.5 million was due to increases in licensing and services revenue, mainly in HDMI royalties and audit settlements for the third quarter of fiscal 2018.

For the first nine months of fiscal 2018, adoption of ASC 606 increased our revenues by $12.0 million compared to revenue that would have been recognized under previous guidance. Of this amount, $13.7 million was due to the acceleration of revenue recognition on sales to certain distributors, with $3.5 million attributed to Communications and Computing, $5.9 million attributed to Mobile and Consumer, and $4.3 million attributed to Industrial and Automotive. This was offset by a $1.7 million decrease in licensing and services revenue comprised of $6.4 million in 2017 HDMI royalties collected that are not recorded as revenue in fiscal 2018 under ASC 606, and an increase of $4.7 million, mainly in HDMI royalties and audit settlements for the first nine months of fiscal 2018.

Revenue by Geography

We assign revenue to geographies based on ship-to location of the end customer, where available, and based upon the location of the distributor to which the product was shipped otherwise.

The composition of our revenue by geography is presented in the following table:

	Three Months Ended				Nine Months Ended			
(In thousands)	September 29, 2018		September 30, 2017 *		September 29, 2018		September 30, 2017 *	
Asia	$ 76,927	76%	$ 68,677	75%	$ 226,747	75%	$ 207,081	71%
Europe	11,873	12	10,972	12	36,177	12	32,631	11
Americas	12,684	12	12,322	13	39,898	13	50,983	18
Total revenue	$ 101,484	100%	$ 91,971	100%	$ 302,822	100%	$ 290,695	100%

** Results for periods in 2017 are presented in accordance with ASC 605, which was in effect during that fiscal year.*

Revenue in Asia increased 12% for the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017 and increased 9% for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017. Asia revenue is heavily affected by revenue from all of the end markets we serve. The increase in the third quarter of fiscal 2018 was predominately due to increasing demand for our products performing control applications in servers, significant growth in the Consumer space from several handset screen replacement customers, increased demand from Industrial broad market customers, and strength at a major telecommunications customer. These increases were partially offset by decline in demand from a major handset manufacturer.

Revenue in Europe increased 8% for the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017 and increased 11% for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017 as the region is showing renewed growth in the broad market, especially in the Industrial end market.

Revenue from the Americas increased 3% for the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017, primarily due to increased royalty revenue. Revenue from the Americas decreased 22% for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017 due to a patent sale that was recognized in the first nine months of fiscal 2017 but did not recur in the first nine months of fiscal 2018. This was partially offset by other royalty revenue and broad market growth in the region.

For the third quarter of fiscal 2018, adoption of ASC 606 increased our revenues by $2.8 million compared to revenue that would have been recognized under previous guidance. This was comprised of a $1.3 million increase due to the acceleration of revenue recognition on sales to certain distributors, with $1.2 million attributed to Europe, and $0.6 million attributed to the Americas, partially offset by a $0.5 million decrease attributed to Asia. An additional $1.5 million was due to increases in licensing and services revenue, attributed to the Americas, described above.

For the first nine months of fiscal 2018, adoption of ASC 606 increased our revenues by $12.0 million compared to revenue that would have been recognized under previous guidance. Of this amount, $13.7 million was due to the acceleration of revenue recognition on sales to certain distributors, with $10.6 million of this amount attributed to Asia, $1.2 million attributed to Europe, and $1.9 million attributed to the Americas. This was offset by the $1.7 million decrease in licensing and services revenue, attributed to the Americas, described above.

Revenue from End Customers

Our top five end customers constituted approximately 20% of our revenue for the third quarter of fiscal 2018, compared to approximately 23% for the third quarter of fiscal 2017. Our top five end customers constituted approximately 17% of our revenue for the first nine months of fiscal 2018, compared to approximately 28% for the first nine months of fiscal 2017.

Our largest end customer accounted for approximately 6% of total revenue in the third quarter of fiscal 2018 and 5% of total revenue in the first nine months of fiscal 2018. Our largest end customer accounted for approximately 5% of total revenue in the third quarter of fiscal 2017 and approximately 9% of total revenue first nine months of fiscal 2017. No customers accounted for more than 10% of total revenue during these periods.

Under ASC 606, we did not have enough information to assign end customers to approximately $1.3 million and $13.7 million of revenue recognized for the three and nine months ended September 29, 2018, respectively, on shipments to distributors that have not sold through to end customers.

Revenue from Distributors

Distributors have historically accounted for a significant portion of our total revenue. Revenue attributable to our primary distributors is presented in the following table:

	% of Total Revenue Three Months Ended		% of Total Revenue Nine Months Ended	
	September 29, 2018	September 30, 2017 *	September 29, 2018	September 30, 2017 *
Arrow Electronics Inc.	24%	27%	30%	24%
Weikeng Group	27	26	26	27
All others	31	27	29	24
All distributors **	82%	80%	85%	75%

* *Results for periods in 2017 are presented in accordance with ASC 605, which was in effect during that fiscal year.*

** *During the first quarter of 2018, we updated our channel categories to group all forms of distribution into a single channel. Prior periods have been reclassified to match current period presentation.*

Revenue attributable to revenue streams other than distributors decreased in the third quarter and first nine months of fiscal 2018 compared to the third quarter and first nine months of fiscal 2017, resulting in increases in distribution revenue as a percentage of total revenue.

The most significant impact of the adoption of ASC 606 was to accelerate the timing of revenue recognition on product shipments to most of our distributors, resulting in an additional $1.3 million and $13.7 million of revenue, respectively in the third quarter and first nine months of fiscal 2018. Assuming all other revenue recognition criteria have been met, the new guidance requires us to recognize revenue and costs relating to such sales upon shipment to the distributor - subject to reductions for estimated reserves for price adjustments and returns - rather than upon the ultimate sale by the distributor to its end customer, as was our previous practice. The impact of this change will depend primarily on the level of inventory held by distributors at the beginning and end of each period. To the extent these inventory levels fluctuate significantly, revenue under the new standard could be materially different than that under the previous standard. We anticipate that the benefit to product revenue resulting from distributor inventory will be minimal in the fourth quarter of 2018. We currently expect the adoption of the new standard to increase revenue recognized from distributors in the 3% range in 2018 compared to revenue recognized from distributors under the previous standard in 2017

Gross Margin

The composition of our gross margin, including as a percentage of revenue, is presented in the following table:

	Three Months Ended		Nine Months Ended	
(In thousands)	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Gross margin	$ 58,364	$ 53,322	$ 165,133	$ 165,363
Percentage of net revenue	57.5%	58.0%	54.5%	56.9%
Product gross margin %	56.0%	56.5%	52.8%	54.3%
Licensing and services gross margin %	100.0%	86.6%	97.7%	82.0%

For the third quarter and first nine months of fiscal 2018 compared to the third quarter and first nine months of fiscal 2017, gross margin decreased by 0.5 and 2.4 percentage points, respectively. The overall gross margin was influenced by the relative mix between product revenue and licensing and services revenue, and this decline resulted primarily from lower licensing and services revenue, partially offset by a decrease in revenue and costs from the Mobile and Consumer end market. Licensing and services accounted for approximately 4% of total revenue in the third quarter and first nine months of fiscal 2018 compared to approximately 5% and 9%, respectively, in the third quarter and first nine months of fiscal 2017.

The primary contributor to the 0.5 percentage point decrease in the third quarter of fiscal 2018 compared to the respective period in fiscal 2017 is an increase in Communications and Computing end market volume, partially offset by lower revenues and costs from the Mobile and Consumer end market. The primary driver of the 1.5 percentage point decrease in product gross margin in the first nine months of fiscal 2018 was the one-time charge of $8.3 million for specific inventory reserves taken on products that were eliminated with the discontinuation of our millimeter wave business. This was partially offset by decreased volume and costs from the Mobile and Consumer end market.

The primary contributor to the 13.4 percentage point increase in licensing and services gross margin in the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017 was an increase in the mix of higher margin licensing and services revenue period over period. The 15.7 percentage point increase in licensing and services gross margin in the first nine months of fiscal 2018 compared to the respective period in fiscal 2017 was due primarily to the $18.0 million patent sale that was recognized in two installments during the first six months of fiscal 2017. The costs associated with the patent sale of $3.6 million, primarily the net book value of the patents acquired in our acquisition of Silicon Image, were greater than usual for this category and had a substantial impact on licensing and services gross margin.

Because of its higher margin, the licensing and services portion of our overall revenue can have a disproportionate impact on gross margin and profitability. For programmable and standard products, we expect that product, end market, and customer mix will subject our gross margin to fluctuation, while we expect downward pressure on average selling price to adversely affect our gross margin in the future. If we are unable to realize additional or sufficient product cost reductions in the future to balance changes in product and customer mix, we may experience degradation in our product gross margin.

Operating Expenses

Research and Development Expense

The composition of our Research and development expense, including as a percentage of revenue, is presented in the following table:

	Three Months Ended			Nine Months Ended		
(In thousands)	**September 29, 2018**	**September 30, 2017**	**% change**	**September 29, 2018**	**September 30, 2017**	**% change**
Research and development	$ 19,131	$ 25,648	(25)	$ 63,153	$ 79,857	(21)
Percentage of revenue	18.9%	27.9%		20.9%	27.5%	
Mask costs included in Research and development	$ —	$ (82)	(100)	$ 521	$ 978	(47)

Research and development expense includes costs for compensation and benefits, stock compensation, development masks, engineering wafers, depreciation, licenses, and outside engineering services. These expenditures are for the design of new products, IP cores, processes, packaging, and software to support new products.

The decrease in Research and development expense for the third quarter and first nine months of fiscal 2018 compared to the third quarter and first nine months of fiscal 2017 is due mainly to the cost reductions realized from restructuring actions and from the sale of assets and a business unit. These savings were predominantly from headcount related expenses, including lower stock compensation expense, and from reductions in time-based licenses. There was also a decrease year-over-year in mask expenses due to the timing of projects.

We believe that a continued commitment to Research and development is essential to maintaining product leadership and providing innovative new product offerings and, therefore, we expect to continue to make significant future investments in Research and development.

Selling, General, and Administrative Expense

The composition of our Selling, general, and administrative expense, including as a percentage of revenue, is presented in the following table:

	Three Months Ended			Nine Months Ended		
(In thousands)	**September 29, 2018**	**September 30, 2017**	**% change**	**September 29, 2018**	**September 30, 2017**	**% change**
Selling, general, and administrative	$ 21,775	$ 21,290	2	$ 69,886	$ 67,133	4
Percentage of revenue	21.5%	23.1%		23.1%	23.1%	

Selling, general, and administrative expense includes costs for compensation and benefits related to selling, general, and administrative employees, commissions, depreciation, professional and outside services, trade show, and travel expenses.

The increase in Selling, general, and administrative expense for the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017 is due mainly to an increase in payroll costs related to executive transitions and professional fees. The increase in Selling, general, and administrative for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017 is due mainly to $2.7 million in one-time costs resulting from our CEO retirement and transition, including accelerated stock compensation and severance expense in the first quarter of fiscal 2018, and by CEO search fees in the first half of fiscal 2018.

Amortization of Acquired Intangible Assets

The composition of our Amortization of acquired intangible assets, including as a percentage of revenue, is presented in the following table:

	Three Months Ended			Nine Months Ended		
(In thousands)	September 29, 2018	September 30, 2017	% change	September 29, 2018	September 30, 2017	% change
Amortization of acquired intangible assets	$ 3,823	$ 8,526	(55)	$ 13,982	$ 25,777	(46)
Percentage of revenue	3.8%	9.3%		4.6%	8.8%	

The decrease in Amortization of acquired intangible assets for the third quarter and first nine months of fiscal 2018 compared to the third quarter and first nine months of fiscal 2017 is primarily due to the reduction of certain intangibles as a result of patent sales and impairment charges in previous periods.

Restructuring Charges

The composition of our Restructuring charges, including as a percentage of revenue, is presented in the following table:

	Three Months Ended			Nine Months Ended		
(In thousands)	September 29, 2018	September 30, 2017	% change	September 29, 2018	September 30, 2017	% change
Restructuring charges	$ 90	$ 3,071	(97)	$ 5,495	$ 4,713	17
Percentage of revenue	0.1%	3.3%		1.8%	1.6%	

Restructuring charges include expenses resulting from reductions in our worldwide workforce, consolidation of our facilities, removal of fixed assets from service, and cancellation of software contracts and engineering tools.

In June 2018, our Board of Directors approved an internal restructuring plan (the "June 2018 Plan"), which included the discontinuation of our millimeter wave business and the use of certain assets related to our Wireless products, and a workforce reduction. The June 2018 Plan is designed to reduce our infrastructure costs and refocus on our core business activities. Approximately $4.1 million of restructuring expense has been incurred through September 29, 2018 under the June 2018 Plan, and we believe this amount approximates the total costs under the plan and that this plan is substantially complete.

In June 2017, our Board of Directors approved an internal restructuring plan (the "June 2017 Plan"), which included the sale of 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business, a worldwide workforce reduction, and an initiative to reduce our infrastructure costs. These actions are part of an overall plan to achieve financial targets and to enhance our financial and competitive position by better aligning our revenue and operating expenses. Under this plan, approximately $0.1 million and $3.1 million of expense was incurred during the three months ended September 29, 2018 and September 30, 2017, respectively, and approximately $1.4 million and $5.5 million of expense was incurred during the nine months ended September 29, 2018 and September 30, 2017, respectively. Approximately $9.4 million of total expense has been incurred through September 29, 2018 under the June 2017 Plan. We expect the total cost to be approximately $21.5 million to $23.0 million and that it will be substantially completed by the end of the first quarter of fiscal 2019.

The $3.0 million decrease in restructuring expense in the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017 was the result of the Plans nearing completion. The $0.8 million increase in restructuring expense in the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017 was driven by significant headcount-related, lease and systems restructuring charges in the current year related to the June 2018 Plan and June 2017 Plan versus smaller charges in the previous year under the June 2017 Plan.

Acquisition Related Charges

The composition of our Acquisition related charges, including as a percentage of revenue, is presented in the following table:

	Three Months Ended			Nine Months Ended		
(In thousands)	September 29, 2018	September 30, 2017	% change	September 29, 2018	September 30, 2017	% change
Acquisition related charges	$ —	$ 681	(100)	$ 1,531	$ 3,208	(52)
Percentage of revenue	—%	0.7%		0.5%	1.1%	

Acquisition related charges include legal and professional fees directly related to acquisitions. For the third quarter of fiscal 2017 and the first nine months of both fiscal 2018 and 2017, Acquisition related charges were entirely attributable to legal fees and outside services in connection with our proposed acquisition by Canyon Bridge Acquisition Company, Inc. Although the acquisition was terminated, we had continued to incur certain residual legal charges directly related to this transaction. We do not expect any future residual costs.

Impairment of Intangible Assets

The composition of our Impairment of intangible assets, including as a percentage of revenue, is presented in the following table:

	Three Months Ended			Nine Months Ended		
(In thousands)	September 29, 2018	September 30, 2017	% change	September 29, 2018	September 30, 2017	% change
Impairment of intangible assets	$ 586	$ 36,198	(98)	$ 12,486	$ 36,198	(66)
Percentage of revenue	0.6%	39.4%		4.1%	12.5%	

During our review of our strategic long-range plan completed at the end of the third quarter of fiscal 2018, we concluded that a certain product line had limited future revenue potential due to a decline in customer demand for that product. We determined that this conclusion constituted an impairment indicator to the related specific developed technology intangible asset acquired in our acquisition of Silicon Image. Our assessment of the fair value of this intangible asset concluded that it had been fully impaired as of September 29, 2018, and we recorded an impairment charge of $0.6 million in the Consolidated Statements of Operations.

In the second quarter of 2018, we made the strategic decision to discontinue our millimeter wave business, which included certain wireless technology intangible assets. We determined that this action constituted an impairment indicator related to certain of the developed technology intangible assets acquired in our acquisition of Silicon Image. Our assessment of the fair value of these intangible assets concluded that they had been fully impaired as of June 30, 2018, and we recorded an impairment charge of $11.9 million in the Consolidated Statements of Operations.

Gain on sale of building

In August 2017, we sold building space which we owned in Shanghai, China for gross proceeds of approximately $7.9 million. The building space was vacated in fiscal 2015 upon consolidation of facilities to a single site in Shanghai following our acquisition of Silicon Image. As of the sale date, the building had a historical cost of $3.6 million, accumulated depreciation of $1.4 million, and we incurred $1.1 million of direct selling costs, resulting in a net gain on sale of $4.6 million, which is presented as Gain on sale of building in our Consolidated Statements of Operations.

Interest expense

Interest expense, including as a percentage of revenue, is presented in the following table:

	Three Months Ended			Nine Months Ended		
(In thousands)	September 29, 2018	September 30, 2017	% change	September 29, 2018	September 30, 2017	% change
Interest expense	$ (5,500)	$ (3,888)	41	$ (15,582)	$ (14,112)	10
Percentage of revenue	(5.4)%	(4.2)%		(5.1)%	(4.9)%	

The increase in Interest expense for the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017, and for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017, was largely driven by the increase in the effective interest rate on our long-term debt offset by the reduction in the principal balance of our long-term debt as a result of the additional principal payments made in the first nine months of fiscal 2018. See the Credit Arrangements section under Liquidity and Capital Resources for further discussion of the debt.

Other expense, net

The composition of our Other expense, net, including as a percentage of revenue, is presented in the following table:

	Three Months Ended			Nine Months Ended		
(In thousands)	September 29, 2018	September 30, 2017	% change	September 29, 2018	September 30, 2017	% change
Other expense, net	$ (452)	$ (2,027)	(78)	$ (246)	$ (2,104)	(88)
Percentage of revenue	(0.4)%	(2.2)%		(0.1)%	(0.7)%	

For the third quarter of fiscal 2018 compared to the third quarter of fiscal 2017, and for the first nine months of fiscal 2018 compared to the first nine months of fiscal 2017, the decrease in Other expense, net is primarily driven by the $1.8 million loss on the sale of 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business to an unrelated third party in the third quarter of fiscal 2017.

Income Taxes

The composition of our Income tax expense (benefit) is presented in the following table:

	Three Months Ended			Nine Months Ended		
(In thousands)	September 29, 2018	September 30, 2017	% change	September 29, 2018	September 30, 2017	% change
Income tax expense (benefit)	$ 33	$ (331)	(+100)	$ 1,973	$ 234	+100

Our Income tax expense (benefit) for the third quarters of fiscal 2018 and fiscal 2017 is composed primarily of foreign income and withholding taxes, partially offset by benefits resulting from the release of uncertain tax positions due to statute of limitation expirations that occurred in the respective periods. The increase in expense in the third quarter and the first nine months of fiscal 2018 as compared to the third quarter and first nine months of fiscal 2017 is primarily due to increased foreign withholding taxes related to HDMI royalty distributions received in the current year periods.

We are not currently paying U.S. federal income taxes and do not expect to pay such taxes until we fully utilize our tax net operating loss and credit carryforwards. We expect to pay a nominal amount of state income tax. We are paying foreign income taxes, which are primarily related to withholding taxes on income from foreign royalties, foreign sales, and the cost of operating offshore research and development, marketing, and sales subsidiaries. We accrue interest and penalties related to uncertain tax positions in income tax expense on our Consolidated Statements of Operations. The inherent uncertainties related to the geographical distribution and relative level of profitability among various high and low tax jurisdictions make it difficult to estimate the impact of the global tax structure on our future effective tax rate.

Liquidity and Capital Resources

The following sections discuss material changes in our financial condition from the end of fiscal 2017, including the effects of changes in our Consolidated Balance Sheets and the effects of our credit arrangements and contractual obligations on our liquidity and capital resources, as well as our non-GAAP measures.

We classify our marketable securities as short-term based on their nature and availability for use in current operations. Our cash equivalents and short-term marketable securities consist primarily of high quality, investment-grade securities.

We have historically financed our operating and capital resource requirements through cash flows from operations. Cash provided by or used in operating activities will fluctuate from period to period due to fluctuations in operating results, the timing and collection of accounts receivable, and required inventory levels, among other things.

We believe that our financial resources will be sufficient to meet our working capital needs through at least the next 12 months. As of September 29, 2018, we did not have significant long-term commitments for capital expenditures. In the future, and to the extent our Credit Agreement permits, we may continue to consider acquisition opportunities to further extend our product or technology portfolios and further expand our product offerings. In connection with funding capital expenditures, completing other acquisitions, securing additional wafer supply, or increasing our working capital, we may seek to obtain equity or additional debt financing, or advance purchase payments or similar arrangements with wafer manufacturers. We may also need to obtain equity or additional debt financing if we experience downturns or cyclical fluctuations in our business that are more severe or longer than we anticipated when determining our current working capital needs, which financing may now be more difficult to obtain in light of our indebtedness related to the Credit Agreement.

Cash, cash equivalents, and short-term marketable securities

(In thousands)	September 29, 2018	December 30, 2017	$ Change
Cash and cash equivalents	$ 107,893	$ 106,815	$ 1,078
Short-term marketable securities	9,600	4,982	4,618
Total Cash and cash equivalents and Short-term marketable securities	$ 117,493	$ 111,797	$ 5,696

As of September 29, 2018, we had total Cash, cash equivalents, and short-term marketable securities of $117.5 million, of which approximately $74.7 million in Cash and cash equivalents was held by our foreign subsidiaries. We manage our global cash requirements considering (i) available funds among the subsidiaries through which we conduct business, (ii) the geographic location of our liquidity needs, and (iii) the cost to access international cash balances. The repatriation of non-U.S. earnings may have adverse tax consequences as we may be required to pay and record income tax expense on those funds to the extent they were previously considered permanently reinvested. As of September 29, 2018, we could access all cash held by our foreign subsidiaries without incurring significant additional expense.

The net increase in Cash, cash equivalents, and short-term marketable securities of $5.7 million between December 30, 2017 and September 29, 2018 was primarily driven by $20.6 million in cash provided by operations, and $26.5 million cash provided by the issuance of common stock upon the exercise of stock options, net of withholding taxes on the vesting of RSUs, partially offset by $27.9 million cash used in the repayment of debt and $12.3 million of cash used in capital expenditures and payment for software licenses.

Accounts receivable, net

(In thousands)	September 29, 2018	December 30, 2017	Change
Accounts receivable, net	$ 75,648	$ 55,104	$ 20,544
Days sales outstanding - Overall	68	53	15

Accounts receivable, net as of September 29, 2018 increased by $20.5 million, or 37%, compared to December 30, 2017. A majority of the increase resulted from increased distributor revenue and billings to support the near-term demand from increasing server deployments and consumer applications, partially offset by the timing of collections and by additional ship and debit and return accruals recorded in the first nine months of fiscal 2018 due to adoption of ASC 606 that were not recorded as of the end of fiscal 2017.

The increase in overall days sales outstanding to 68 days at September 29, 2018 from 53 days at December 30, 2017 is mainly due the changes in distributor accounts receivable as a result of increased distributor inventory and adoption of ASC 606 discussed above.

Inventories

(In thousands)	September 29, 2018	December 30, 2017	Change
Inventories	$ 66,381	$ 79,903	$ (13,522)
Months of inventory on hand	4.6	5.4	(0.8)

Inventories as of September 29, 2018 decreased $13.5 million, or 17%, compared to December 30, 2017 primarily due to $8.0 million of specific inventory reserves taken on products that were eliminated with the discontinuation of our millimeter wave business. Additional reductions were made as a result of managing inventory levels based on improved system visibility of product demand.

The months of inventory on hand ratio compares the inventory balance at the end of a quarter to the cost of sales in that quarter. Our months of inventory on hand decreased to 4.6 months at September 29, 2018 from 5.4 months at December 30, 2017. Major factors resulting in the decrease are consistent with those noted above in the change in inventories.

Credit Arrangements

On March 10, 2015, we entered into a secured credit agreement (the "Credit Agreement") with Jefferies Finance, LLC and certain other lenders for purposes of funding, in part, our acquisition of Silicon Image. The Credit Agreement provided for a $350 million term loan (the "Term Loan") maturing on March 10, 2021 (the "Term Loan Maturity Date"). We received $346.5 million, net of an original issue discount of $3.5 million and we paid debt issuance costs of $8.3 million. The Term Loan bears variable interest equal to the one-month LIBOR, subject to a 1.00% floor, plus a spread of 4.25%. The current effective interest rate on the Term Loan is 7.03%.

The Term Loan is payable through a combination of (i) quarterly installments of approximately $0.9 million, (ii) annual excess cash flow payments as defined in the Credit Agreement, which are due 95 days after the last day of our fiscal year, and (iii) any payments due upon certain issuances of additional indebtedness and certain asset dispositions, with any remaining outstanding principal amount due and payable on the Term Loan Maturity Date. The percentage of excess cash flow we are required to pay ranges from 0% to 75%, depending on our leverage and other factors as defined in the Credit Agreement. Currently, the Credit Agreement would require a 75% excess cash flow payment.

In the first quarter of fiscal 2018, we made a required quarterly installment payment of $0.9 million. In the second quarter of fiscal 2018, we made a required excess cash flow payment of $0.2 million, a required quarterly installment payment of $0.9 million, and an additional $10.0 million principal payment. In the third quarter of fiscal 2018, we made a required quarterly installment payment of $0.9 million, and an additional $15.0 million principal payment. Over the next twelve months, our principal payments will be comprised mainly of regular quarterly installments, a required annual excess cash flow payment, and we could make any discretionary payments we deem appropriate.

While the Credit Agreement does not contain financial covenants, it does contain informational covenants and certain restrictive covenants, including limitations on liens, mergers and consolidations, sales of assets, payment of dividends, and indebtedness. We were in compliance with all such covenants in all material respects at September 29, 2018.

As of September 29, 2018, we had no significant long-term purchase commitments for capital expenditures or existing used or unused credit arrangements.

Contractual Cash Obligations

There have been no material changes to our contractual obligations outside of the ordinary course of business in the first nine months of fiscal 2018, as summarized in Management's Discussion and Analysis of Financial Condition and Results of Operations in the Company's Annual Report on Form 10-K for the year ended December 30, 2017.

Off-Balance Sheet Arrangements

As of September 29, 2018, we did not have any off-balance sheet arrangements of the type described by Item 303(a)(4) of SEC Regulation S-K.

Non-GAAP Financial Measures

To supplement our consolidated financial results presented in accordance with U.S. Generally Accepted Accounting Principles ("GAAP"), we also present non-GAAP financial measures which are adjusted from the most directly comparable U.S. GAAP financial measures. The non-GAAP measures set forth below exclude charges and adjustments primarily related to stock-based compensation, restructuring plans and related charges, acquisition-related charges, amortization of acquired intangible assets, impairment of intangible assets, gain on sale of building, loss on sale of business unit, and the estimated tax effect of these items. These charges and adjustments may be recurring in nature but are a result of periodic or non-core operating activities of the Company.

Management believes that these non-GAAP financial measures provide an additional and useful way of viewing aspects of our performance that, when viewed in conjunction with our U.S. GAAP results, provide a more comprehensive understanding of the various factors and trends affecting our ongoing financial performance and operating results than GAAP measures alone. Management also uses these non-GAAP measures for strategic and business decision-making, internal budgeting, forecasting, and resource allocation processes and believes that investors should have access to similar data when making their investment decisions. In addition, these non-GAAP financial measures facilitate management’s internal comparisons to our historical operating results and comparisons to competitors’ operating results.

These non-GAAP measures are included solely for informational and comparative purposes and are not meant as a substitute for GAAP and should be considered together with the consolidated financial information located in this report. Pursuant to the requirements of Regulation S-K and to make clear to our investors the adjustments we make to U.S. GAAP measures, we have provided the following reconciliations of non-GAAP measures to the most directly comparable U.S. GAAP financial measures.

Reconciliation of U.S. GAAP to Non-GAAP Financial Measures

(In thousands, except per share data) *(unaudited)*	**Three Months Ended**		**Nine Months Ended**	
	September 29, 2018	**September 30, 2017**	**September 29, 2018**	**September 30, 2017**
Gross Margin Reconciliation				
GAAP Gross margin	$ 58,364	$ 53,322	$ 165,133	$ 165,363
Inventory adjustment related to restructured operations	(288)	—	7,989	—
Stock-based compensation expense - gross margin	219	154	652	562
Non-GAAP Gross margin	$ 58,295	$ 53,476	$ 173,774	$ 165,925
Gross Margin % Reconciliation				
GAAP Gross margin %	57.5 %	58.0 %	54.5 %	56.9 %
Cumulative effect of non-GAAP Gross Margin adjustments	(0.1)%	0.1 %	2.9 %	0.2 %
Non-GAAP Gross margin %	57.4 %	58.1 %	57.4 %	57.1 %
Operating Expenses Reconciliation				
GAAP Operating expenses	$ 45,405	$ 90,790	$ 166,533	$ 212,262
Amortization of acquired intangible assets	(3,823)	(8,526)	(13,982)	(25,777)
Restructuring charges	(90)	(3,071)	(5,495)	(4,713)
Acquisition related charges (1)	—	(681)	(1,531)	(3,208)
Impairment of acquired intangible assets	(586)	(36,198)	(12,486)	(36,198)
Stock-based compensation expense - operations	(2,489)	(2,360)	(9,256)	(8,724)
Gain on sale of building	—	4,624	—	4,624
Non-GAAP Operating expenses	$ 38,417	$ 44,578	$ 123,783	$ 138,266

(1) Legal fees and outside services that were related to our proposed acquisition by Canyon Bridge Acquisition Company, Inc.

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Reconciliation of U.S. GAAP to Non-GAAP Financial Measures (continued)

(In thousands, except per share data) *(unaudited)*	Three Months Ended		Nine Months Ended	
	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Income (Loss) from Operations Reconciliation				
GAAP Income (loss) from operations	$ 12,959	$ (37,468)	$ (1,400)	$ (46,899)
Inventory adjustment related to restructured operations	(288)	—	7,989	—
Stock-based compensation expense - gross margin	219	154	652	562
Amortization of acquired intangible assets	3,823	8,526	13,982	25,777
Restructuring charges	90	3,071	5,495	4,713
Acquisition related charges (1)	—	681	1,531	3,208
Impairment of acquired intangible assets	586	36,198	12,486	36,198
Stock-based compensation expense - operations	2,489	2,360	9,256	8,724
Gain on sale of building	—	(4,624)	—	(4,624)
Non-GAAP Income from operations	$ 19,878	$ 8,898	$ 49,991	$ 27,659
Income (Loss) from Operations % Reconciliation				
GAAP Income (loss) from operations %	12.8 %	(40.7)%	(0.5)%	(16.1)%
Cumulative effect of non-GAAP Gross Margin and Operating adjustments	6.8 %	50.4 %	17.0 %	25.6 %
Non-GAAP Income from operations %	19.6 %	9.7 %	16.5 %	9.5 %
Other Expense, Net Reconciliation				
GAAP Other expense, net	$ (452)	$ (2,027)	$ (246)	$ (2,104)
Loss on sale of assets and business units	—	1,796	—	1,496
Non-GAAP Other expense, net	$ (452)	$ (231)	$ (246)	$ (608)
Income Tax Expense (Benefit) Reconciliation				
GAAP Income tax expense (benefit)	$ 33	$ (331)	$ 1,973	$ 234
Estimated tax effect of non-GAAP Adjustments (2)	108	(218)	(88)	142
Non-GAAP Income tax expense (benefit)	$ 141	$ (549)	$ 1,885	$ 376
Net Income (Loss) Reconciliation				
GAAP Net income (loss)	$ 6,974	$ (43,052)	$ (19,201)	$ (63,349)
Inventory adjustment related to restructured operations	(288)	—	7,989	—
Stock-based compensation expense - gross margin	219	154	652	562
Amortization of acquired intangible assets	3,823	8,526	13,982	25,777
Restructuring charges	90	3,071	5,495	4,713
Acquisition related charges (1)	—	681	1,531	3,208
Impairment of acquired intangible assets	586	36,198	12,486	36,198
Stock-based compensation expense - operations	2,489	2,360	9,256	8,724
Gain on sale of building	—	(4,624)	—	(4,624)
Gain on sale of assets and business unit	—	1,796	—	1,496
Estimated tax effect of non-GAAP Adjustments (2)	(108)	218	88	(142)
Non-GAAP Net income	$ 13,785	$ 5,328	$ 32,278	$ 12,563

(1) Legal fees and outside services that were related to our proposed acquisition by Canyon Bridge Acquisition Company, Inc.
(2) We calculate non-GAAP tax expense by applying our tax provision model to year-to-date and projected income after adjusting for non-GAAP items. The difference between calculated values for GAAP and non-GAAP tax expense has been included as the “Estimated tax effect of non-GAAP adjustments.”

Reconciliation of U.S. GAAP to Non-GAAP Financial Measures (continued)

(In thousands, except per share data) *(unaudited)*	Three Months Ended		Nine Months Ended	
	September 29, 2018	September 30, 2017	September 29, 2018	September 30, 2017
Net Income (Loss) Per Share Reconciliation				
GAAP Net income (loss) per share - basic and diluted	$ 0.05	$ (0.35)	$ (0.15)	$ (0.52)
Cumulative effect of Non-GAAP adjustments	0.06	0.39	0.41	0.62
Non-GAAP Net income per share - basic and diluted	$ 0.11	$ 0.04	$ 0.26	$ 0.10
Shares used in per share calculations:				
Basic	127,816	122,990	125,578	122,393
Diluted - GAAP	129,474	122,990	125,578	122,393
Diluted - non-GAAP (3)	129,474	124,225	126,862	124,454

(3) Diluted shares are calculated using the GAAP treasury stock method. In a loss position, diluted shares equal basic shares.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Exchange Rate Risk

While our revenues and the majority of our expenses are denominated in U.S. dollars, we collect an annual Japanese consumption tax refund in yen, and as a result of having various international subsidiary and branch operations, our financial position and results of operations are subject to foreign currency exchange rate risk.

We mitigate the resulting foreign currency exchange rate exposure by entering into foreign currency forward exchange contracts, details of which are presented in the following table:

	September 29, 2018	December 30, 2017
Total cost of contracts for Japanese yen (in thousands)	$ 1,955	$ 2,204
Number of contracts	2	2
Settlement month	June 2019	June 2018

Although these hedges mitigate our foreign currency exchange rate exposure from an economic perspective, they were not designated as "effective" hedges under U.S. GAAP and as such are adjusted to fair value through Other expense, net. We do not engage in speculative trading in any financial or capital market.

The net fair value of these contracts was favorable by approximately $0.1 million at both September 29, 2018 and December 30, 2017. A hypothetical 10% unfavorable exchange rate change in the yen against the U.S. dollar would have resulted in an unfavorable change in net fair value of approximately $0.1 million at September 29, 2018 and approximately $0.2 million at December 30, 2017. Changes in fair value resulting from foreign exchange rate fluctuations would be substantially offset by the change in value of the underlying hedged transactions.

Interest Rate Risk

At September 29, 2018, we had $278.9 million outstanding on the original $350 million term loan outstanding under our Credit Agreement, with a variable contractual interest rate based on the one-month LIBOR as of September 29, 2018, subject to a 1.00% floor, plus a spread of 4.25%. A hypothetical increase in the one-month LIBOR by 1% (100 basis points) would increase our future interest expense by approximately $0.7 million per quarter.

ITEM 4. CONTROLS AND PROCEDURES

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Our management, under the supervision and with the participation of our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), has evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”)) as of the end of the period covered by this report.

Based on their evaluation, our CEO and CFO concluded that our disclosure controls and procedures were not effective as of September 29, 2018 because we continue to implement the steps to remediate the material weakness described in Item 9A of our Annual Report on Form 10-K for the year ended December 30, 2017 and summarized below. Notwithstanding such material weakness in internal control over financial reporting, our management concluded that the consolidated financial statements in this quarterly report on Form 10-Q present fairly, in all material respects, our financial position, results of operations and cash flows as of the dates, and for the periods presented, in conformity with U.S. generally accepted accounting principles (“U.S. GAAP”).

The material weakness in our internal control over financial reporting that led management to conclude that disclosure controls and procedures were not effective is more fully described in "Management's Report on Internal Control over Financial Reporting" in Part II, Item 9A of our Annual Report on Form 10-K for the year ended December 30, 2017. During fiscal 2017, we did not conduct an effective risk assessment over significant unusual transactions and as a result, did not design and implement control activities over the accounting for those significant unusual transactions. These deficiencies could impact any of the amounts reported in our financial statements. The control deficiencies resulted in certain immaterial misstatements, which were corrected in the consolidated financial statements as of and for the year ended December 30, 2017 prior to issuance as well as other immaterial misstatements that were not corrected. Because the control deficiencies created a reasonable possibility that a material misstatement in the annual or interim consolidated financial statements would not be prevented or detected on a timely basis, they represented a material weakness and, accordingly, management concluded its internal control over financial reporting was ineffective as of December 30, 2017.

Changes in Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) or 15d-15(f) under the Securities Exchange Act of 1934. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding reliability of financial reporting and the preparation and fair presentation of published financial statements for external purposes in accordance with U.S. GAAP.

In Item 9A of our Annual report on Form 10-K for the year ended December 30, 2017, we disclosed a material weakness in internal control over financial reporting as a result of not conducting an effective risk assessment over significant unusual transactions and as a result, not designing and implementing control activities over the accounting for those significant unusual transactions. In response to the material weakness, management identified remediation steps to address such material weakness and has taken specific actions to address these issues, which are ongoing and include:

- Timely reviews with the Controller and/or CFO regarding technical accounting conclusions to ensure an effective risk assessment is performed to identify and assess changes within the business and external environment that may impact financial reporting;
- Routine Disclosure Committee meetings to highlight and identify unique or non-recurring transactions or events, the accounting for these matters and the associated relevant risk assessments;
- Expanded and augmented the members of the Disclosure Committee to include representatives from the Executive Leadership Team; and
- Continue the risk assessment reviews, as warranted, with the Audit Committee

These ongoing improvements are targeted at strengthening our internal control over financial reporting and remediating the material weakness referenced above. We remain committed to effective disclosure controls and procedures and an effective internal control environment and management believes that these actions, and the improvements management expects to achieve as a result, will remediate the material weakness. However, the process of improvement and remediation is ongoing as of September 29, 2018, and the material weaknesses in our internal control over financial reporting and our disclosure controls and procedures will not be considered remediated until the controls operate for a sufficient period of time and management has concluded, through testing, that these controls operate effectively.

Other than the ongoing material weakness remediation plan described above, there were no changes in our internal controls over financial reporting (as defined in Rules 13a - 15(f) and 15(d) - 15(f) under the Exchange Act) that occurred during the third quarter of fiscal 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

The information set forth above under "Note 16 - Contingencies - Legal Matters" contained in the Notes to Consolidated Financial Statements is incorporated herein by reference.

ITEM 1A. Risk Factors

The following risk factors and other information included in this Report include any material changes to and supersede the description of the risk factors associated with our business previously disclosed in our Annual Report on Form 10-K for the year ended December 30, 2017 and should be carefully considered before making an investment decision relating to our common stock. If any of the risks described below occur, our business, financial condition, operating results, and cash flows could be materially adversely affected. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations and financial results.

We rely on a limited number of independent suppliers for the manufacture of all of our products and a failure by our suppliers to provide timely, cost-effective, and quality products could adversely affect our operations and financial results.

We depend on independent foundries to supply silicon wafers for our products. These foundries include Fujitsu in Japan and United Microelectronics Corporation in Taiwan, which supply the majority of our programmable logic wafers, and Taiwan Semiconductor Manufacturing, which supplies most of our HDMI and MHL integrated circuits. We negotiate wafer volumes, prices, and other terms with our foundry partners and their respective affiliates on a periodic basis typically resulting in short-term agreements which do not ensure long-term supply or allocation commitments. We rely on our foundry partners to produce wafers with competitive performance attributes. If the foundries that supply our wafers experience manufacturing problems, including unacceptable yields, delays in the realization of the requisite process technologies, or difficulties due to limitations of new and existing process technologies, our operating results could be adversely affected.

If for any reason the foundries are unable to, or do not manufacture sufficient quantities of our products or continue to manufacture a product for the full life of the product, we may be required to prematurely limit or discontinue the sales of certain products or incur significant costs to transfer products to other foundries, and our customer relationships and operating results could be adversely affected. In addition, weak economic conditions or political instability may adversely impact the financial health and viability of the foundries and cause them to limit or discontinue their business operations, resulting in shortages of supply and an inability to meet their commitments to us, which could adversely affect our financial condition and operating results.

A disruption of one or more of our foundry partners' operations as a result of a fire, earthquake, act of terrorism, political or labor unrest, governmental uncertainty, war, disease, or other natural disaster or catastrophic event, or any other reason, could disrupt our wafer supply and could adversely affect our operating results.

Establishing, maintaining and managing multiple foundry relationships requires the investment of management resources as well as additional costs. If we fail to maintain our foundry relationships, or elect or are required to change foundries, we may incur significant costs and manufacturing delays. The success of certain of our next generation products is dependent upon our ability to successfully partner with Fujitsu, Taiwan Semiconductor, Seiko Epson, and other foundry partners. If for any reason one or more of our foundry partners does not provide its facilities and support for our development efforts, we may be unable to effectively develop new products in a timely manner.

Should a change in foundry relationships be required, we may be unsuccessful in establishing new foundry relationships for our current or next generation products, or we may incur substantial cost or manufacturing delays until we form and ramp relationships and migrate products, all of which could adversely affect our operating results.

We depend on distributors to generate a significant portion of our revenue and complete order fulfillment, and any adverse change in our relationship or our distributors' financial health, reduction of selling efforts, or inaccuracy in resale reports could harm our sales or result in misreporting our results. Also, new revenue standards require recognition of revenue based on significant estimates, and may require us to book revenue from distributors that is in excess of actual end customer demand. If our distributor does not ultimately sell the inventory and our estimates change, we could be required to materially correct our recognized revenue in a future period, depending on actual results, which could adversely affect our revenues and profits. Any failure to manage these challenges could disrupt or reduce sales of our products and unfavorably impact our financial results.

We depend on our distributors to sell our products to end customers, complete order fulfillment, and maintain sufficient inventory of our products. Our distributors also provide technical support and other value-added services to our end customers. Revenue attributable to distributors accounted for 85% of our total revenue in the first nine months of fiscal 2018, with two distributors accounting for 56% of our total revenue in the first nine months of fiscal 2018.

We expect our distributors to generate a significant portion of our revenue in the future. Any adverse change to our relationships with our distributors or a failure by one or more of our distributors to perform its obligations to us could have a material impact on our business. In addition, a significant reduction of effort by a distributor to sell our products or a material change in our relationship with one or more distributors may reduce our access to certain end customers and adversely affect our ability to sell our products.

The financial health of our distributors is important to our success. Economic conditions may adversely impact the financial health of one or more of our distributors. This could result in the inability of distributors to finance or pay for the purchase of our products or cause the distributors to delay payment of their obligation to us and increase our credit risk. We have significant outstanding receivables with our top distributors. If the financial health of our distributors impairs their performance and we are unable to secure alternate distributors, or if one or more of our distributors fails to pay its receivables, our financial condition and results of operations may be negatively impacted.

Since we have limited ability to forecast inventory levels of our end customers, it is possible that there may be significant build-up of inventories in the distributor channel, with the OEM or the OEM's contract manufacturer. Such a buildup could result in a slowdown in orders, requests for returns from customers, or requests to move out planned shipments. Additionally, with our adoption of Accounting Standards Update (ASU) No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, the timing of revenue recognition of product shipments to most of our distributors is accelerated. Assuming all other revenue recognition criteria have been met, we recognize revenue and costs relating to such sales upon shipment to the distributor, which could result in our recognizing revenue on inventory that is a result of a distributor building inventory in advance of a clear and actual demand. The new standard requires recognition of revenue based on significant estimates, and if our distributor does not ultimately sell the inventory and our estimates change, we could be required to materially correct our recognized revenue in a future period, depending on actual results. This could adversely affect our revenues and profits. Any failure to manage these challenges could disrupt or reduce sales of our products and unfavorably impact our financial results.

We depend on the timeliness and accuracy of resale reports from our distributors. Late or inaccurate resale reports could have a detrimental effect on our ability to properly recognize revenue, especially under the new revenue standard, and on our ability to predict future sales.

Our success and future revenue depends on our ability to innovate, develop and introduce new products that achieve customer and market acceptance and to successfully compete in the highly competitive semiconductor industry, and failure to do so could have a material adverse effect on our financial condition and results of operations.

The semiconductor industry is highly competitive and many of our direct and indirect competitors have substantially greater financial, technological, manufacturing, marketing, and sales resources. Consolidation in our industry may increasingly mean that our competitors have greater resources, or other synergies, that could put us at a competitive disadvantage. We currently compete directly with companies that have licensed our technology or have developed similar products, as well as numerous semiconductor companies that offer products based on alternative solutions, such as applications processor, application specific standard product, microcontroller, analog, and digital signal processing technologies. Competition from these semiconductor companies may intensify as we offer more products in any of our end markets. These competitors include established, multinational semiconductor companies, as well as emerging companies.

The markets in which we compete are characterized by rapid technology and product evolution, generally followed by a relatively longer process of ramping up to volume production on advanced technologies. Our markets are also characterized by evolving industry standards, frequent new product introduction, short product life cycles, and increased demand for higher levels of integration and smaller process geometry. Our competitive position and success depends on our ability to innovate, develop, and introduce new products that compete effectively on the basis of price, density, functionality, power consumption, form factor, and performance addressing the evolving needs of the markets we serve. These new products typically are more technologically complex than their predecessors.

Our future growth and the success of new product introductions depend upon numerous factors, including:

- timely completion and introduction of new product designs;
- ability to generate new design opportunities and design wins, including those which result in sales of significant volume;
- availability of specialized field application engineering resources supporting demand creation and customer adoption of new products;
- ability to utilize advanced manufacturing process technologies;
- achieving acceptable yields and obtaining adequate production capacity from our wafer foundries and assembly and test subcontractors;
- ability to obtain advanced packaging;
- availability of supporting software design tools;
- utilization of predefined IP logic;
- market acceptance of our MHL-enabled and mobile products;
- customer acceptance of advanced features in our new products;
- availability of competing alternative technologies; and
- market acceptance of our customers' products.

Our product innovation and development efforts may not be successful; our new products and MHL-enabled products may not achieve market or customer acceptance; and we may not achieve the necessary volume of production to achieve acceptable cost. Revenue relating to our mature products is expected to decline in the future, which is normal for our product life cycles. As a result, we may be increasingly dependent on revenue derived from our newer products as well as anticipated cost reductions in the manufacture of our current products. We rely on obtaining yield improvements and corresponding cost reductions in the manufacture of existing products and on introducing new products that incorporate advanced features and other price/performance factors that enable us to increase revenues while maintaining acceptable margins. To the extent such cost reductions and new product introductions do not occur in a timely manner, or that our products do not achieve market acceptance or market acceptance at acceptable pricing, our forecasts of future revenue, financial condition, and operating results could be materially adversely affected.

Foreign sales, accounting for the majority of our revenue, are subject to various risks associated with selling in international markets, which could have a material adverse effect on our operations, financial condition, and results of operations.

We derive the majority of our revenue from sales outside of the United States. Accordingly, if we experience a decline in foreign sales, our operating results could be adversely affected. Our foreign sales are subject to numerous risks, including:

- changes in local economic conditions;
- currency exchange rate volatility;
- governmental stimulus packages, controls, tariffs and trade disputes or restrictions;
- governmental policies that promote development and consumption of domestic products;
- export license requirements, foreign trade compliance matters, and restrictions on the use of technology;
- political instability, war, terrorism, or pandemic disease;
- changes in tax rates, tariffs, or freight rates;
- reduced protection for intellectual property rights;
- longer receivable collection periods;
- natural or man-made disasters in the countries where we sell our products;
- interruptions in transportation;
- interruptions in the global communication infrastructure;
- labor regulations; and
- the impact of trade policy decisions on the economy.

Any of these factors could adversely affect our financial condition and results of operations in the future. For instance, in the past we sold products to ZTE and had anticipated doing so throughout fiscal 2018. However, during the second quarter of fiscal 2018 we were restricted from selling to ZTE due to sanctions imposed by the United States Department of Commerce. While the sanctions against ZTE have been lifted by the Department of Commerce, any additional sanctions or other government actions in response to such sanctions that affect our distributors or customers could adversely affect our financial condition and results of operations.

The semiconductor industry routinely experiences cyclical market patterns and a significant industry downturn could adversely affect our operating results.

Our revenue and gross margin can fluctuate significantly due to downturns in the semiconductor industry. These downturns can be severe and prolonged and can result in price erosion and weak demand for our products. Weak demand for our products resulting from general economic conditions affecting the end markets we serve or the semiconductor industry specifically and reduced spending by our customers can result, and in the past has resulted, in excess and obsolete inventories and corresponding inventory write-downs. The dynamics of the markets in which we operate make prediction of and timely reaction to such events difficult. Due to these and other factors, our past results are not reliable predictors of our future results.

Our expense levels are based, in part, on our expectations of future sales. Many of our expenses, particularly those relating to facilities, capital equipment, and other overhead, are relatively fixed. We might be unable to reduce spending quickly enough to compensate for reductions in sales. Accordingly, shortfalls in sales could adversely affect our operating results.

General economic conditions and deterioration in the global business environment, including as a result of trade disputes such as the one developing between China and the United States, could have a material adverse effect on our business, operating results, and financial condition.

Adverse economic conditions or our customers' perceptions of the economic environment may negatively affect customer demand for our products and services and result in delayed or decreased spending. Several factors contribute to these weak economic conditions, including volatility in the financial markets, lower levels of consumer liquidity, higher interest rates, price increases for materials and components, and political uncertainty, such as the trade and tariff actions recently announced by the United States, China and other countries. Weak global economic conditions in the past have resulted in weak demand for our products in certain geographies and had an adverse impact on our results of operations. If global economic conditions weaken, our business could be harmed due to customers or potential customers reducing or delaying orders. In addition, the inability of customers to obtain credit, the insolvency of one or more customers, tariffs applicable to our customers' products, or the insolvency of key suppliers could result in sales or production delays. Any of these effects could impact our ability to effectively manage inventory levels and collect receivables, require additional restructuring actions, and decrease our revenue and profitability. Uncertainty about future economic conditions makes it difficult for us to forecast operating results and to make decisions about future investments. Any or all of these factors could adversely affect our financial condition and results of operations in the future.

Our outstanding indebtedness could reduce our strategic flexibility and liquidity and may have other adverse effects on our results of operations.

In connection with our acquisition of Silicon Image, we entered into a secured Credit Agreement providing for a $350 million term loan that matures on March 10, 2021. As of September 29, 2018, our outstanding balance was $278.9 million. Our obligations under the Credit Agreement are guaranteed by our U.S. subsidiaries. Our obligations include a requirement to pay quarterly installments of approximately $0.9 million and up to 75% of our annual excess cash flow toward repayment of the facility, with the remaining balance due upon maturity. Our ability to meet our debt service obligations depends upon our operating and financial performance, which is subject to general economic and competitive conditions and to financial, business and other factors affecting our operations, many of which are beyond our control. We cannot provide assurance that our business operations will generate sufficient cash flow from operations to fund these debt service obligations. If we are unable to service our debt, we may need to sell material assets, restructure or refinance our debt, or seek additional equity capital. Prevailing economic conditions and global credit markets could adversely impact the availability of debt or equity financing on terms acceptable to us, or we may not be able to refinance or restructure our debt without incurring significant additional fees and expenses.

The Credit Agreement also contains certain restrictive covenants, including limitations on liens, mergers and consolidations, sales of assets, payment of dividends, and additional indebtedness. The amount and terms of our indebtedness, as well as our credit rating, could have important consequences, including the following:

- we may be more vulnerable to economic downturns, less able to withstand competitive pressures, and less flexible in responding to changing business and economic conditions;
- our cash flow from operations may be allocated to the payment of outstanding indebtedness, and not to research and development, operations or business growth;
- we might not generate sufficient cash flow from operations or other sources to enable us to meet our payment obligations under the facility and to fund other liquidity needs;
- our ability to make distributions to our stockholders in a sale or liquidation may be limited until any balance on the facility is repaid in full; and
- our ability to incur additional debt, including for working capital, acquisitions, or other needs, is more limited.

If we breach a loan covenant, the lenders could accelerate the repayment of the term loan. We might not have sufficient assets to repay such indebtedness upon acceleration. If we are unable to repay or refinance the indebtedness upon acceleration or at maturity, the lenders could initiate a bankruptcy proceeding against us or collection proceedings with respect to our assets and subsidiaries securing the facility, which could materially decrease the value of our common stock.

We depend on a concentrated group of customers for a significant portion of our revenues. If any of these customers reduce their use of our products, our revenue could decrease significantly.

A significant portion of our revenue depends on sales to a limited number of customers. In the third quarter of fiscal 2018, our largest end customer accounted for approximately 6% of our total revenue, and our top five end customers accounted for approximately 20% of our total revenue. During the first quarter of fiscal 2018, approximately 3% of our total revenue came from ZTE Kangzun Telecom Co. Ltd. ("ZTE") before we were restricted from selling to ZTE due to sanctions imposed by the United States Department of Commerce. Although sanctions against ZTE have been lifted subject to ZTE satisfying certain conditions established by the United States Department of Commerce, we cannot predict whether the financial and other penalties imposed on ZTE will have a negative impact on future orders. If ZTE again becomes subject, or if other customers become subject, to sanctions by the United States Department of Commerce or if our customers are affected by tariffs or other government trade restrictions, our business and financial condition could be adversely affected. If our relationships with any material customers were to diminish, if these customers were to develop their own solutions or adopt alternative solutions or competitors' solutions, or if our relationship with any future customer which accounts for a significant portion of our revenue were to diminish due to these or other factors, our results could be adversely affected.

While we strive to maintain strong relationships with our customers, their continued use of our products is frequently reevaluated, as certain of our customers' product life cycles are relatively short and they continually develop new products. The selection process for our products to be included in our customers' new products is highly competitive. There are no guarantees that our products will be included in the next generation of products introduced by these customers. For example, one of our largest customers from the second half of 2016 through the first half of 2017 was a major mobile handset provider. The production volume for this mobile handset peaked in the fourth quarter of fiscal 2016, and the associated revenue stream has declined in subsequent quarters as the end product completes its lifecycle. Our product was not included in this provider's next generation handset, and there is no guarantee that our products will be included in its future handsets, nor in any of its other devices. Any significant loss of, or a significant reduction in purchases by, one or more of these customers or their failure to meet their commitments to us, could have an adverse effect on our financial condition and results of operations. If any one or more of our concentrated groups of customers were to experience significantly adverse financial conditions, our financial condition and business could be adversely affected as well.

We may experience difficulties in transitioning to smaller geometry process technologies or in achieving higher levels of design integration, which may result in reduced manufacturing yields, delays in product deliveries, and increased expenses.

To remain competitive, we expect to continue to transition our semiconductor products to increasingly smaller geometries. This requires us to change the manufacturing processes for our products and to redesign some products as well as standard cells and other integrated circuit designs we may use in multiple products. We periodically evaluate the benefits, on a product-by-product basis, of migrating to smaller geometry process technologies to reduce our costs. The transition to lower nanometer geometry process technologies will result in significantly higher mask and prototyping costs, as well as additional expenditures for engineering design tools.

We depend on our relationships with our foundry partners to transition to smaller geometry processes successfully. We make no assurance that our foundry partners will be able to effectively manage the transition in a timely manner, or at all. If we or any of our foundry partners experience significant delays in this transition or fail to efficiently implement this transition, we could experience reduced manufacturing yields, delays in product deliveries, and increased expenses, all of which could adversely affect our relationships with our customers and our financial condition and operating results.

The intellectual property licensing component of our business strategy increases our business risk and fluctuation of our revenue.

Our business strategy includes licensing our intellectual property to companies that incorporate it into their respective technologies that address markets in which we do not directly participate or compete. We also license our intellectual property into markets where we do participate and compete. Our licensing and services revenue may be impacted by the introduction of new technologies by customers in place of the technologies based on our intellectual property, changes in the law that may weaken our ability to prevent the use of our patented technology by others, the expiration of our patents, and changes of selling prices for products using licensed patents. We cannot assure that our licensing customers will continue to license our technology on commercially favorable terms or at all, or that these customers will introduce and sell products incorporating our technology, accurately report royalties owed to us, pay agreed upon royalties, honor agreed upon market restrictions, or maintain the confidentiality of our proprietary information, or will not infringe upon or misappropriate our intellectual property. Our intellectual property licensing agreements are complex and depend upon many factors, including completion of milestones, allocation of values to delivered items and customer acceptances. Many of these require significant judgments. Additionally, this is a relatively new end market for us, with which we do not yet have extensive experience.

We have also generated revenue from the sale of certain patents from our portfolio, generally for technology that we are no longer actively developing. While we plan to continue to monetize our patent portfolio through sales of non-core patents, we may not be able to realize adequate interest or prices for those patents. Accordingly, we cannot provide assurance that we will continue to generate revenue from these sales. In addition, although we seek to be strategic in our decisions to sell patents, we might incur reputational harm if a purchaser of our patents sues one of our customers for infringement of the purchased patent, and we might later decide to enter a space that requires the use of one or more of the patents we sold. In addition, as we sell groups of patents, we no longer have the opportunity to further sell or to license those patents and receive a continuing royalty stream.

Our licensing and services revenue fluctuates, sometimes significantly, from period to period because it is heavily dependent on a few key transactions being completed in a given period, the timing of which is difficult to predict and may not match our expectations. Because of its high margin, the licensing and services revenue portion of our overall revenue can have a disproportionate impact on gross profit and profitability. Generating revenue from intellectual property licenses is a lengthy and complex process that may last beyond the period in which our efforts begin, and the accounting rules governing the recognition of revenue from intellectual property licensing transactions are increasingly complex and subject to interpretation. As a result, the amount of license revenue recognized in any period may differ significantly from our expectations.

We have significant international operations exposing us to various economic, regulatory, political, and business risks, which could have a material adverse effect on our operations, financial condition, and results of operations.

We have significant international operations, including foreign sales offices to support our international customers and distributors, and operational and research and development sites in China, the Philippines, and other Asian locations. In addition, we purchase our wafers from foreign foundries; have our commercial products assembled, packaged, and tested by subcontractors located outside of the United States; and rely on an international service provider for inventory management, order fulfillment, and direct sales logistics.

These and other integral business activities outside of the United States are subject to the operational challenges, risks and uncertainties associated with conducting business in foreign economic and regulatory environments including trade barriers; economic sanctions; environmental regulations; import and export regulations; duties and tariffs and other trade restrictions; changes in trade policies; anti-corruption laws; domestic and foreign governmental regulations; potential vulnerability of and reduced protection for intellectual property; disruptions or delays in production or shipments; and instability or fluctuations in currency exchange rates, any of which could have a material adverse effect on our business, financial condition, and operating results. The imposition by the United States of tariffs on goods imported from outside of the United States or countermeasures imposed in response to such government actions could adversely affect our operations or our ability to sell our products globally, which could adversely affect our operating results and financial condition.

If we fail to comply with the many laws and regulations to which we are subject, we may be subject to significant fines, penalties or liabilities for noncompliance, which could harm our business and financial results. For example, the European Union adopted the General Data Protection Regulation (“GDPR”) in 2016, which establishes new requirements regarding the handling of personal data and which became effective in May 2018. Although generally we are not in the business of collecting personal data, non-compliance with the GDPR could result in monetary penalties of up to the higher of 20 million Euros or 4% of worldwide revenue.

Moreover, our financial condition and results of operations could be affected in the event of political instability, including as a result of the tariffs and trade actions taken by the United States, China, and other countries, or the United Kingdom referendum in June 2016, in which voters approved an exit from the European Union (commonly referred to as "Brexit"), terrorist activity, U.S. or other military actions, or economic crises in countries where our main wafer suppliers, end customers, contract manufacturers, and logistics providers are located.

The Industrial and Automotive end market has increased in significance for us, and a downturn in this end market could cause a meaningful reduction in demand for our products and limit our ability to maintain revenue levels and operating results.

Revenue from the Industrial and Automotive end market accounted for 40% of our revenue in the first nine months of fiscal 2018. We have experienced recent concentrations of revenue at specific customers. Reductions in the magnitude of their individual revenue streams or the duration of their use of our products could adversely affect our revenue and operating results. Further, we compete for design opportunities at these customers and an inability to meet their design and pricing requirements could lead to a reduction in our revenue adversely affecting our operating results.

A downturn in the Communications and Computing end market could cause a meaningful reduction in demand for our products and limit our ability to maintain revenue levels and operating results.

Revenue from the Communications and Computing end market accounted for 30% of our revenue in the first nine months of fiscal 2018. Three of our top five programmable logic customers participate primarily in the Communications and Computing end market. In the past, cyclical weakening in demand for programmable logic products from customers in the Communications and Computing end market has adversely affected our revenue and operating results. In addition, telecommunication equipment providers are building network infrastructure for which we compete for product sales. Any deterioration in the Communications and Computing end market, our end customers' reduction in spending, or a reduction in spending by their customers to support this end market or use of our competitors' products could lead to a reduction in demand for our products which could adversely affect our revenue and results of operations. This type of decline impacted our results in the past and could do so again in the future.

The Mobile and Consumer end market is rapidly changing and cyclical, and a downturn in this end market or our failure to accurately predict the frequency, duration, timing, and severity of these cycles could adversely affect our financial condition and results.

Revenue from the Mobile and Consumer end market accounted for 26% of our revenue in the first nine months of fiscal 2018. Revenue from the Mobile and Consumer end market consists primarily of revenue from our products designed and used in a broad range of consumer electronics products including smartphones, tablets and e-readers, wearables, accessories such as chargers and docks, Ultra High-Definition TVs, Digital SLR cameras, drones, and other connected devices. This market is characterized by rapidly changing requirements and product features and volatility in consumer demand. Our success in this market will depend principally on our ability to:

- meet the market windows for consumer products;
- predict technology and market trends;
- develop IP cores to meet emerging market needs;
- develop products on a timely basis;
- maintain multiple design wins across different markets and customers to dampen the effects of market volatility;
- be designed into our customers' products; and
- avoid cancellations or delay of products.

Our inability to accomplish any of the foregoing, or to offset the volatility of this end market through diversification into other markets, could materially and adversely affect our business, financial condition, and results of operations. Cyclicality in the Mobile and Consumer end market could periodically result in higher or lower levels of revenue and revenue concentration with a single or small number of customers. In addition, rapid changes in this market may affect demand for our products, and may cause our revenue derived from sales in this market to vary significantly over time, adversely affecting our financial results.

A single large customer may be in a position to demand certain functionality, pricing or timing requirements that may detract from or interfere with our normal business activities. If this happens, delays in our normal development schedules could occur, causing our products to miss market windows, thereby reducing the total number of units sold of a particular product.

The products we develop are complex and require significant planning and resources. In the Mobile and Consumer end market, new products are typically introduced early in the year, often in association with key trade shows. In order to meet these deadlines, our customers must complete their product development by year-end, which usually means we must ship sample parts in early spring. If we cannot ship sample parts in early spring, customers may be forced to remove the feature provided by our product, use a competitor's product, or use an alternate technology in order to meet their timelines. We plan our product development with these market windows in mind, but if we receive requests from a large customer to deploy resources to meet their requirements or work on a specific solution, our normal development path could be delayed, causing us to miss sample deadlines and therefore future revenues.

We rely on information technology systems, and failure of these systems to function properly may cause business disruptions.

We rely in part on various information technology ("IT") systems to manage our operations, including financial reporting, and we regularly make changes to improve them as necessary by periodically implementing new, or upgrading or enhancing existing, operational and IT systems, procedures, and controls. We have undergone a significant integration and systems implementation following the acquisition of Silicon Image. However, various systems remain that may be nearing the end of their useful life or vendor support, and which will ultimately need to be replaced.

In the second quarter of fiscal 2017, we implemented a new enterprise resource planning ("ERP") system to standardize our processes worldwide and adopt best-in-class capabilities. We committed significant resources to this new ERP system, which replaced multiple legacy systems, and are now focused on realizing the full analytical functionality of this conversion, which is extremely complex, in part, because of the wide range of processes that must be integrated.

As a result of the conversion process and during our use of the new ERP system, we may experience delays or disruptions in the integration of our new or enhanced systems, procedures, or controls. We may also encounter errors in data, an inability to accurately process or record transactions, and security or technical reliability issues. All of these could harm our ability to conduct core operating functions such as processing invoices, shipping and receiving, recording and reporting financial and management information on a timely and accurate basis, and could impact our internal control compliance efforts. If the technical solution or end user training are inadequate, it could limit our ability to manufacture and ship products as planned.

These systems are supported by subcontractors, and they may also subject to power and telecommunication outages or other general system failures. Failure of our IT systems or difficulties or delays in maintaining, managing, and integrating them could impact the company's ability to perform necessary operations, which could materially adversely affect our business.

Failure of our internal control over financial reporting could adversely affect our business and financial results.

In our Annual Report on Form 10-K for the year ended December 30, 2017, we disclosed a material weakness in our internal control over financial reporting related to our risk assessment involving significant unusual transactions. If our remediation steps to address such material weakness are not effective, we may continue to have ineffective internal controls over financial reporting. We provide no assurance that we will be able to timely remediate the material weakness we have identified, or any weakness in our or significant deficiency that may be identified in future periods. Any failure to maintain an effective system of internal controls over financial reporting could limit our ability to report our financial results accurately and timely, which could adversely affect our business, financial results and stock price.

We may experience a disruption of our business activities due to changes in our executive leadership team and the resulting management transitions.

We have recently experienced significant changes to our executive leadership team. On August 27, 2018, the Company's Board of Directors announced the appointment of Jim Anderson as the Company's President and Chief Executive Officer, whose employment commenced September 4, 2018. The Company also announced a transition involving the Chief Financial Officer and new appointments to management roles in research and development and marketing. This executive leadership transition may result in loss of personnel with deep institutional knowledge and has the potential to disrupt our operations and relationships with employees, customers and suppliers. We must successfully integrate our new management team members within our organization in order to achieve our operating objectives, and these management transitions may temporarily affect our financial performance and results of operations as our new executive leadership team becomes familiar with our business. In addition, our competitors may seek to use this transition and the related potential disruptions to gain a competitive advantage over us. Our future operating results depend substantially upon the continued service of our key personnel and in significant part upon our ability to attract and retain qualified management personnel. If we are unable to mitigate these or other similar risks, our business activity could be disrupted, and our financial condition and results of operations could be materially adversely affected.

Acquisitions, strategic investments and strategic partnerships present risks, and we may not realize the goals that were contemplated at the time of a transaction.

On March 10, 2015, we acquired Silicon Image, and we may make further acquisitions and strategic investments in the future. Acquisitions and strategic investments, including our acquisition of Silicon Image, present risks, including:

- our ongoing business may be disrupted and our management's attention may be diverted by investment, acquisition, transition, or integration activities;
- an acquisition or strategic investment may not perform as well or further our business strategy as we expected, and we may not integrate an acquired company or technology as successfully as we expected;
- we may incur unexpected costs, claims, or liabilities that we assume from an acquired company or technology or that are otherwise related to an acquisition;
- we may discover adverse conditions post-acquisition that are not covered by representations and warranties;
- we may increase some of our risks, such as increasing customer or end product concentration;
- we may have difficulty incorporating acquired technologies or products with our existing product lines;
- we may have higher than anticipated costs in continuing support and development of acquired products, and in general and administrative functions that support such products;
- we may have difficulty integrating and retaining key personnel;
- we may have difficulty integrating business systems, processes, and tools, such as accounting software, inventory management systems, or revenue systems which may have an adverse effect on our business;
- our liquidity and/or capital structure may be adversely impacted;
- our strategic investments may not perform as expected;
- we may experience unexpected changes in how we are required to account for our acquisitions and strategic investments pursuant to U.S. GAAP;
- we may have difficulty integrating acquired entities into our global tax structure with potentially negative impacts on our effective tax rate;
- if the acquisition or strategic investment does not perform as projected, we might take a charge to earnings due to impaired goodwill;
- we may divest certain assets of acquired businesses, leading to charges against earnings;
- we may experience unexpected negative responses from vendors or customers to the acquisition, which may adversely impact our operations; and
- we may have difficulty integrating the processes and control environment.

The occurrence of any of these risks could have a material adverse effect on our business, results of operations, financial condition, or cash flows, particularly in the case of a larger acquisition or several concurrent acquisitions or strategic investments. In addition, we may enter into strategic partnerships with third parties with the goal of gaining access to new and innovative products and technologies. Strategic partnerships pose many of the same risks as acquisitions or investments.

We cannot guarantee that we will be able to complete any future acquisitions or that we will realize any anticipated benefits from any of our past or future acquisitions, strategic investments, or strategic partnerships. We may not be able to find suitable acquisition opportunities that are available at attractive valuations, if at all. A sustained decline in the price of our common stock may make it more difficult and expensive to initiate or complete additional acquisitions on commercially acceptable terms.

We are required under U.S. GAAP to test goodwill for possible impairment on an annual basis and to test goodwill and long-lived assets, including amortizable intangible assets, for impairment at any other time that circumstances arise indicating the carrying value may not be recoverable. For purposes of testing goodwill for impairment, the Company currently operates as one reporting unit: the core Lattice ("Core") business, which includes intellectual property and semiconductor devices. No impairment charges related to goodwill were recorded in the first three quarters of fiscal 2018, nor in either fiscal year 2017 or 2016. Impairment charges related to amortizable intangible assets from the Silicon Image acquisition totaled approximately $12.5 million, $32.4 million, and $7.9 million in fiscal years 2018, 2017, and 2016, respectively. There is no assurance that future impairment tests will indicate that goodwill or amortizable intangible assets will be deemed recoverable. As we continue to review our business operations and test for impairment or in connection with possible sales of assets, we may have impairment charges in the future, which may be material.

Our gross margins can fluctuate significantly due to a number of factors, including our sales cycle, inventory strategy and product mix.

A number of factors, including how products are manufactured to support the consumer market segment, yield, wafer pricing, cost of packaging raw materials, product mix, market acceptance of our new products, competitive pricing dynamics, geographic and/or end market mix, and pricing strategies, can cause our gross margins to fluctuate significantly either positively or negatively from period to period. In addition, forecasting our gross margins is difficult because a significant portion of our business is based on turns within the same quarter.

During our sales cycle, our customers typically test and evaluate our products prior to deciding to include our products into the design of their own products, and then require additional time to begin volume production of their products. This lengthy sales cycle may cause us to incur significant expenses, experience significant production delays and to incur additional inventory costs before we receive a customer order that may be delayed or never get placed. We may incur these expenses without generating revenue from our products to offset such expenses.

While our sales cycles are typically long, our average product life cycles tend to be short as a result of the rapidly changing technology environment in which we operate. In addition, our inventory levels may be higher than historical norms, from time to time, due to inventory build decisions aimed at meeting expected demand from a single large customer, reducing direct material cost or enabling responsiveness to expected demand. In the event the expected demand does not materialize, or if our short sales cycle does not generate sufficient revenue, we may be subject to incremental excess and obsolescence costs. In addition, future product cost reductions could impact our inventory valuation, which could adversely affect our operating results.

We and our connectivity customers depend on the availability of certain functions and capabilities within mobile and personal computing operating systems over which we may have no control. New releases of these operating systems may render certain of our products inoperable or may require significant engineering effort to create new device driver software.

Certain portions of our business operate within a market that is dominated by a few key OEMs. These OEMs could play a role in driving the growth of our business or could prevent our growth through deliberate or non-deliberate action. We do not have a presence in the Windows eco-system or in all iOS or Android devices. Our success and ability to grow depend upon our ability to continue to be successful within the iOS and Android eco-systems or gain significant traction within the Windows eco-system. Failure to maintain and grow our presence in these key eco-systems could adversely affect unit volumes.

Further, many of our products depend on the availability of certain functionality in the device operating system, typically Android, Linux, Windows, or iOS. Certain operating system interfaces are needed to support video output. We have no control over these operating systems or the companies that produce them, and it is unlikely that we could influence any internal decision these companies make that may have a negative impact on our integrated circuits and their function. Updates to these operating systems that, for example, change the way video is output or remove the ability to output video could materially affect sales of MHL and HDMI integrated circuits.

Products targeted to personal computing or mobile, laptop, or notebook designs often require device driver software to operate. This software is difficult to produce and may require certifications before being released. Failure to produce this software could have a negative impact on our relation with operating system providers and may damage our reputation with end consumers as a quality supplier of products.

Shortages in, or increased costs of, wafers and materials could adversely impact our gross margins and lead to reduced revenues.

Worldwide manufacturing capacity for silicon wafers is relatively inelastic. If the demand for silicon wafers or assembly material materially exceeds market supply, our supply of silicon wafers or assembly material could quickly become limited or prohibitively expensive. A shortage in manufacturing capacity could hinder our ability to meet product demand and therefore reduce our revenue. In addition, silicon wafers constitute a material portion of our product cost. If we are unable to purchase wafers at favorable prices, our gross margins will be adversely affected.

We depend on independent contractors for most of our assembly and test services, and disruption of their services, or an increased in cost of these services, could negatively impact our financial condition and results of operations.

We depend on subcontractors to assemble, test, and ship our products with acceptable quality and yield levels. Our operations and operating results may be adversely affected if we experience problems with our subcontractors that impact the delivery of product to our customers. Those problems may include: prolonged inability to obtain wafers or packaging materials with competitive performance and cost attributes; inability to achieve adequate yields or timely delivery; disruption or defects in assembly, test, or shipping services; or delays in stabilizing manufacturing processes or ramping up volume for new products. Economic conditions may adversely impact the financial health and viability of our subcontractors and result in their inability to meet their commitments to us resulting in product shortages, quality assurance problems, reduced revenue, and/or increased costs which could negatively impact our financial condition and results of operations.

In the past, we have experienced delays in obtaining assembled and tested products and in securing assembly and test capacity commitments from our suppliers. While we believe our current assembly and test capacity commitments are adequate, these existing commitments may not be sufficient for us to satisfy customer demand in future periods. We negotiate assembly and test prices and capacity commitments from our contractors on a periodic basis. If any of our assembly or test contractors reduce their capacity commitment or increase their prices, and we cannot find alternative sources, our operating results could be adversely affected.

We rely on independent software and hardware developers and disruption of their services could negatively affect our operations and financial results.

We rely on independent software and hardware developers for the design, development, supply, and support of intellectual property cores; design and development software; and certain elements of evaluation boards. As a result, failure or significant delay to complete software or deliver hardware in accordance with our plans, specifications, and agreements could disrupt the release of or introduction of new or existing products, which could be detrimental to the capability of our new or existing products to win designs. Any of these delays or inability to complete the design or development could have an adverse effect on our business, financial condition, or operating results.

Our participation in HDMI and MHL has included our acting as agent for these consortia for which we have been receiving adopter fees. We no longer act as agent for the HDMI standard and there is no guarantee that we will continue to act as agent for the MHL standard. Accordingly, we now receive a reduced share of HDMI adopter fees and we could in the future lose MHL adopter fees.

Through our wholly owned subsidiary, HDMI Licensing, LLC, we acted as agent of the HDMI consortium until December 31, 2016 and were responsible for promoting and administering the specification. We received all of the adopter fees paid by adopters of the HDMI specification in connection with our role as agent. In September 2016, the Founders of the HDMI consortium ("Founders"), of which we are a member, amended the Founders Agreement resulting in changes to our role as agent for the HDMI consortium and to the model for sharing adopter fee revenues. Under the terms of the agreement, our role as the agent was terminated effective January 1, 2017 and a new independent entity was appointed to act as the new HDMI licensing agent with responsibility for licensing and the distribution of royalties among Founders. As a result of the amended model for sharing adopter fee revenue, we will be entitled to a reduced share of adopter fees paid by parties adopting the HDMI standard.

In addition, another member of the HDMI consortium asserts that we owe the other HDMI consortium Founders their respective shares of any HDMI adopter fees not used by us in the marketing and other activities in furtherance of the HDMI standard from our time as agent. The consortium member has previously indicated its belief that the HDMI Founders enjoy a right to these funds but has never pursued such claim. The Company disputes this claim. If a claim is asserted and a determination is made that there were excess adopter fees or if it is determined that we were obligated to share such fees with other consortium members, it could negatively impact our financial position.

We share HDMI royalties with the other HDMI Founders based on an allocation formula, which is reviewed every three years. The most recent royalty sharing formula covered the period from January 1, 2014 through December 31, 2016, and an interim agreement covering the period from January 1, 2017 through December 31, 2017 was signed in the second quarter of fiscal 2018. However, a new agreement covering the period beginning January 1, 2018 is yet to be signed. Our portion of the royalty allocation has declined for the last several years. In 2015, we received between 24% and 25% of the royalty allocation, while for 2016 and 2017, we received 20% of the royalty allocation. The royalty allocation for 2018 and future years is not yet known but may decline. If the royalty allocation continues to decline, our financial performance could be adversely affected. In addition, delays in the signing of new royalty sharing agreements impacted our timing of revenue recognition and ability to recognize revenue related to the royalties in fiscal 2017. With our adoption of ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)* as of the beginning of fiscal 2018, we will recognize revenue related to royalties based on estimates of the amounts we will be entitled to receive, and these estimates could differ materiality from actual royalty sharing amounts.

Through our wholly owned subsidiary, MHL, LLC, we act as agent of the MHL specification and are responsible for promoting and administering the specification. As agent, we are entitled to receive license fees paid by adopters of the MHL specification sufficient to reimburse us for the costs we incur to promote and administer the specification. Given the limited number of MHL adopters to date, we do not believe the license fees paid by such adopters will be sufficient to reimburse us for these costs and we make no assurance that the license fees paid by MHL adopters will ever be sufficient to reimburse us the costs we incur as agent of the specification.

We currently continue to be involved in other standard setting initiatives. For example, through Silicon Image’s acquisition of SiBEAM, Inc. in May 2011, it achieved SiBEAM’s prior position as founder and chair of the WirelessHD Consortium. We may decide to license additional elements of our intellectual property to others for use in implementing, developing, promoting, or adopting standards in our target markets, in certain circumstances at little or no cost. This may make it easier for others to compete with us in such markets. In addition, even if we receive license fees or royalties in connection with the licensing of our intellectual property, we make no assurance that such license fees or royalties will compensate us adequately.

Our failure to control unauthorized access to our IT systems may cause problems with key business partners or liability.

We may be subject to unauthorized access to our IT systems through a security breach or cyber-attack. In the ordinary course of our business, we maintain sensitive data on our networks, including our intellectual property and proprietary or confidential business information relating to our business and that of our customers and business partners. The secure maintenance of this information is critical to our business and reputation. We believe that companies have been increasingly subject to a wide variety of security incidents, cyber-attacks, and other attempts to gain unauthorized access. Cyber-attacks have become more prevalent and much harder to detect and defend against. Our network and storage applications may be subject to unauthorized access by hackers or breached due to operator error, malfeasance, or other system disruptions. It is often difficult to anticipate or immediately detect such incidents and to assess the damage caused by them. In the past, third parties have attempted to penetrate and/or infect our network and systems with malicious software and phishing attacks in an effort to gain access to our network and systems.

These data breaches and any unauthorized access or disclosure of our information or intellectual property could compromise our intellectual property and expose sensitive business information. Cyber-attacks could also cause us to incur significant remediation costs, result in product development delays, disrupt key business operations, and divert attention of management and key information technology resources. Our reputation, brand, and business could be significantly harmed, and we could be subject to third party claims in the event of such a security breach.

Recent tax law changes and our global organizational structure and operations expose us to unanticipated tax consequences.

Our legal organizational structure could result in unanticipated unfavorable tax or other consequences which could have an adverse effect on our financial condition and results of operations. We have a global tax structure to more effectively align our corporate structure with our business operations including responsibility for sales and purchasing activities. We created new and realigned existing legal entities; completed intercompany sales of rights to intellectual property, inventory, and fixed assets across different tax jurisdictions; and implemented cost-sharing and intellectual property licensing and royalty agreements between our legal entities. We currently operate legal entities in countries where we conduct supply-chain management, design, and sales operations around the world. In some countries, we maintain multiple entities for tax or other purposes. In addition, we are currently conducting further restructuring activities following our acquisition of Silicon Image as we integrate Silicon Image and its subsidiaries, which include numerous foreign entities, into our existing global tax and corporate structures. These integration activities, changes in tax laws, regulations, future jurisdictional profitability of the Company and its subsidiaries, and related regulatory interpretations in the countries in which we operate may impact the taxes we pay or tax provision we record, which could adversely affect our results of operations.

We are subject to taxation in the United States, Singapore, and other countries. Future effective tax rates could be affected by changes in the composition of earnings in countries with differing tax rates, changes in the valuation of deferred tax assets and liabilities, or changes in tax laws. We compute our effective tax rate using actual jurisdictional profits and losses. Changes in the jurisdictional mix of profits and losses may cause fluctuations in the effective tax rate. Adverse changes in tax rates, our tax assets, and tax liabilities could negatively affect our results in the future.

We make no assurance as to what taxes we pay or the ability to estimate our future effective tax rate because of, among other things, uncertainty regarding the tax policies of the jurisdictions where we operate. In particular, we anticipate that the Tax Cuts and Jobs Act, enacted December 22, 2017, will impact us. While we are able to quantify or estimate the effects of some of the provisions now in the act, we do not know of all of the rules the Internal Revenue Service ("IRS") will enact to fully implement the tax law changes, or the IRS' interpretations of the changes. We also continue to analyze and understand the changes and the impacts on us, including the indirect impacts that result from how our industry or we might modify behaviors in a response to the new tax law structure. We also provide no assurance that estimates we provide to quantify the effect of the changes may be accurate.

Product quality problems could lead to reduced revenue, gross margins, and net income.

In general, we warrant our products for varying lengths of time against non-conformance to our specifications and certain other defects. Because our products, including hardware, software, and intellectual property cores, are highly complex and increasingly incorporate advanced technology, our quality assurance programs may not detect all defects, whether manufacturing defects in individual products or systematic defects that could affect numerous shipments. Inability to detect a defect could result in a diversion of our engineering resources from product development efforts, increased engineering expenses to remediate the defect, and increased costs due to customer accommodation or inventory impairment charges. On occasion we have also repaired or replaced certain components, made software fixes, or refunded the purchase price or license fee paid by our customers due to product or software defects. If there are significant product defects, the costs to remediate such defects, net of reimbursed amounts from our vendors, if any, or to resolve warranty claims may adversely affect our revenue, gross margins, and net income.

The nature of our business makes our revenue and gross margin subject to fluctuation and difficult to predict with accuracy, which could have an adverse impact on our business and our ability to provide forward-looking revenue and gross margin guidance.

In addition to the challenging market conditions we may face, we have limited visibility into the demand for our products, particularly new products, because demand for our products depends upon our products being designed into our end customers' products and those products achieving market acceptance. Due to the complexity of our customers' designs, the design to volume production process for many of our customers requires a substantial amount of time, frequently longer than a year. In addition, we are dependent upon "turns," orders received and turned for shipment in the same quarter. These factors make it difficult for us to accurately forecast future sales and project quarterly revenues. The difficulty in forecasting future sales weakens our ability to project our inventory requirements, which could result, and in the past has resulted, in inventory write-downs or failure to meet customer product demands in a timely manner. While we may give guidance, the difficulty in forecasting revenues as well as the relative customer and product mix of those revenues limits our ability to provide accurate forward-looking revenue and gross margin guidance.

Reductions in the average selling prices of our products could have a negative impact on our gross margins.

The average selling prices of our products generally decline as the products mature or may decline as we compete for market share or customer acceptance in competitive markets. We seek to offset the decrease in selling prices through yield improvement, manufacturing cost reductions, and increased unit sales. We also seek to continue to develop higher value products or product features that increase, or slow the decline of, the average selling price of our products. However, we cannot guarantee that our ongoing efforts will be successful or that they will keep pace with the decline in selling prices of our products, which could ultimately lead to a decline in revenues and have a negative effect on our gross margins.

If we are unable to adequately protect our intellectual property rights, our financial results and our ability to compete effectively may suffer.

Our success depends in part on our proprietary technology and we rely upon patent, copyright, trade secret, mask work, and trademark laws to protect our intellectual property. We intend to continue to protect our proprietary technology, however, we may be unsuccessful in asserting our intellectual property rights or such rights may be invalidated, violated, circumvented, or challenged. From time to time, third parties, including our competitors, have asserted against us patent, copyright, and other intellectual property rights to technologies that are important to us. Third parties may attempt to misappropriate our intellectual property through electronic or other means or assert infringement claims against us in the future. Such assertions by third parties may result in costly litigation, indemnity claims, or other legal actions, and we may not prevail in such matters or be able to license any valid and infringed patents from third parties on commercially reasonable terms. This could result in the loss of our ability to import and sell our products or require us to pay costly royalties to third parties in connection with sales of our products. Any infringement claim, indemnification claim, or impairment or loss of use of our intellectual property could materially adversely affect our financial condition and results of operations.

A material change in the agreements governing encryption keys we use could place additional restrictions on us, or our distributors or contract manufacturers, which could restrict product shipment or significantly increase the cost to track products throughout the distribution chain.

Many of the components in our products contain encryption keys used in connection with High Definition Content Protection ("HDCP"). The regulation and distribution of these encryption keys are controlled through license agreements with Digital Content Protection ("DCP"), a wholly owned subsidiary of Intel Corporation. These license agreements have been modified by DCP from time to time, and such changes could impact us, our distributors, and our customers. An important element of both HDMI and MHL is the ability to implement link protection for high definition ("HD"), and more recently, 4K UltraHD, content. We implement various aspects of the HDCP link protection within certain parts we sell. We also, for the benefit of our customers, include the necessary HDCP encryption keys in parts we ship to customers. These encryption keys are provided to us from DCP. We have a specific process for tracking and handling these encryption keys. If DCP changes any of the tracking or handling requirements associated with HDCP encryption keys, we may be required to change our manufacturing and distribution processes, which could adversely affect our manufacturing and distribution costs associated with these products. If we cannot satisfy new requirements for the handling and tracking of encryption keys, we may have to cease shipping or manufacturing certain products.

Our participation in consortia for the development and promotion of industry standards in certain of our target markets, including the HDMI, MHL, and WirelessHD standards, requires us to license some of our intellectual property for free or under specified terms and conditions, which makes it easier for others to compete with us in such markets.

An element of our business strategy includes participating in consortia to establish industry standards in certain of our target markets; promoting and enhancing specifications; and developing and marketing products based on those specifications and future enhancements. We intend to continue participating in consortia that develop and promote the HDMI, MHL, and WirelessHD specifications. In connection with our participation in these consortia, we make certain commitments regarding our intellectual property, in each case with the effect of making certain of our intellectual property available to others, including our competitors, desiring to implement the specification in question. For example, we must license specific elements of our intellectual property to others for use in implementing the HDMI specification, including enhancements, as long as we remain part of the consortium. Also, we must agree not to assert certain necessary patent claims against other members of the MHL consortium, even if those members may have infringed upon those patents in implementing the MHL specification.

Accordingly, certain companies that implement these specifications in their products may use specific elements of our intellectual property to compete with us. Although in the case of the HDMI and MHL consortia, there are annual fees and royalties associated with the adopters' use of the technology, we make no assurance that our shares of such annual fees and royalties will adequately compensate us for having to license or refrain from asserting our intellectual property. In September 2016, the Founders of the HDMI consortium, of which we are a member, amended the Founders Agreement resulting in changes to our role as agent for the HDMI consortium and to the model for sharing adopter fee revenues. Under the terms of the agreement, our role as the agent was terminated effective January 1, 2017 and a new independent entity was appointed to act as the new HDMI licensing agent with responsibility for licensing and the distribution of royalties among Founders. As a result of the amended model for sharing adopter fee revenue, we will be entitled to a reduced share of adopter fees paid by parties adopting the HDMI standard.

Our revenue depends, in part, on the continued adoption and widespread implementation of the HDMI and MHL specifications.

Our future revenue depends, in part, upon the continued adoption and widespread implementation of the HDMI and MHL specifications. From time to time, competing standards have been established which negatively affect the success of existing standards or jeopardize the creation of new standards. Our failure to continue to drive innovation in the MHL specifications could have an adverse effect on our business going forward.

MHL has not been widely adopted, and if manufacturers who have included MHL in their designs decide that MHL is no longer necessary or cost-effective as a product feature, they could choose to omit the MHL functionality (and our product) from their designs. Such decisions would adversely affect our revenues.

As successor-in-interest to Silicon Image, we have granted Intel Corporation certain rights with respect to our intellectual property, which could allow Intel to develop products that compete with ours or otherwise reduce the value of our intellectual property.

Silicon Image entered into a patent cross-license agreement with Intel in which each of them granted the other a license to use the patents filed by the grantor prior to a specified date, except for use related to identified types of products. We believe that the scope of this license to Intel excludes our current products and anticipated future products. Intel could, however, exercise its rights under this agreement to use certain of our patents received in the acquisition of Silicon Image to develop and market other products that compete with ours, without payment to us. Additionally, Intel's rights to these patents could reduce the value of the patents to any third-party who otherwise might be interested in acquiring rights to use these patents in such products. Finally, Intel could endorse competing products, including a competing digital interface, or develop its own proprietary digital interface. Any of these actions could substantially harm our business and results of operations.

Litigation and unfavorable results of legal proceedings could adversely affect our financial condition and operating results.

From time to time we are subject to various legal proceedings and claims that arise out of the ordinary conduct of our business. Certain claims may not yet be resolved, including any that are discussed under "Note 16 - Contingencies" contained in the Notes to Consolidated Financial Statements, and additional claims may arise in the future. Results of legal proceedings cannot be predicted with certainty. Regardless of merit, litigation may be both time-consuming and disruptive to our operations and cause significant expense and diversion of management attention and we may enter into material settlements to avoid these risks. Should we fail to prevail in certain matters, we may be faced with significant monetary damages or injunctive relief against us that could materially and adversely affect our financial condition and operating results and certain portions of our business.

We depend upon a third party to provide inventory management, order fulfillment, and direct sales logistics and disruption of these services could adversely impact our business and results of operations.

We rely on a third party vendor to provide cost-effective and efficient supply chain services. Among other activities, these outsourced services relate to direct sales logistics, including order fulfillment, inventory management and warehousing, and distribution of inventory to third party distributors. If our third party supply chain provider were to discontinue services for us or its operations are disrupted as a result of a fire, earthquake, act of terrorism, political unrest, governmental uncertainty, war, disease, or other natural disaster or catastrophic event, or any other reason, our ability to fulfill direct sales orders and distribute inventory timely, cost effectively, or at all, would be hindered, which could adversely affect our business.

We may have failed to adequately insure against certain risks, and, as a result, our financial condition and results may be adversely affected.

We carry insurance customary for companies in our industry, including, but not limited to, liability, property, and casualty; workers' compensation; and business interruption insurance. We also insure our employees for basic medical expenses. In addition, we have insurance contracts that provide director and officer liability coverage for our directors and officers. Other than the specific areas mentioned above, we are self-insured with respect to most other risks and exposures, and the insurance we carry in many cases is subject to a significant policy deductible or other limitation before coverage applies. Based on management's assessment and judgment, we have determined that it is more cost effective to self-insure against certain risks than to incur the insurance premium costs. The risks and exposures for which we self-insure include, but are not limited to, certain natural disasters, certain product defects, certain matters for which we indemnify third parties, political risk, certain theft, patent infringement, and employment practice matters. Should there be a catastrophic loss due to an uninsured event (such as an earthquake) or a loss due to adverse occurrences in any area in which we are self-insured, our financial condition or operating results could be adversely affected.

We compete with others to attract and retain key personnel, and any loss of, or inability to attract, such personnel could adversely affect our ability to compete effectively.

We depend on the efforts and abilities of certain key members of management and other technical personnel. Our future success depends, in part, upon our ability to retain such personnel and attract and retain other highly qualified personnel, particularly product engineers who can respond to market demands and required product innovation. In August, the Company announced plans to undertake a search for a new Chief Financial Officer. Competition for such engineering personnel and finance executives is intense and we may not be successful in hiring or retaining new or existing qualified personnel. Additionally, from time to time we have effected restructurings which have eliminated a number of positions. Even if such personnel are not directly affected by the restructuring effort, such terminations can have a negative impact on morale and our ability to attract and hire new qualified personnel in the future. If we lose existing qualified personnel or are unable to hire new qualified personnel, as needed, we could have difficulty competing in our highly-competitive and innovative environment.

ITEM 6. EXHIBITS

Exhibit Number	Description
10.1	Employment Agreement, by and between Lattice Semiconductor Corporation and James R. Anderson, effective September 4, 2018 (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K, filed on August 27, 2018)
10.2	Employment Agreement, by and between Lattice Semiconductor Corporation and Stephen Douglass, effective September 4, 2018.
10.3	CFO Notice and Supplemental Separation Benefit Letter dated September 28, 2018
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended.
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

SIGNATURES

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

LATTICE SEMICONDUCTOR CORPORATION

(Registrant)

/s/ Max Downing

MAX DOWNING

Chief Financial Officer

(Duly Authorized Officer and Principal Financial and Accounting Officer)

Date: October 29, 2018

Exhibit 10.2

Employment Agreement

This Employment Agreement (the “Agreement”) is entered into by and between Stephen Douglass (the “Executive”) and **LATTICE SEMICONDUCTOR CORPORATION**, a Delaware corporation (the “Company”) as of September 4, 2018 (the “Effective Date”).

1. **Duties and Scope of Employment**.

(a) **Position**. For the term of his employment under this Agreement (“Employment”), the Executive will serve as the Corporate Vice President-Research and Development (“CVP”). The Executive shall report directly to the Company’s Chief Executive Officer (the “CEO”). Executive will render such business and professional services in the performance of his duties, consistent with the Executive’s position within the Company, as will reasonably be assigned to him by the CEO.

(b) **Obligations**. The Executive shall have such duties, authority and responsibilities that are commensurate with being the Company’s senior executive officer responsible for research and development. During the term of his Employment, the Executive will devote Executive’s full business efforts and time to the Company. For the duration of his Employment, Executive agrees not to actively engage in any other employment, occupation, or consulting activity for any direct or indirect remuneration without the prior approval of the Board (which approval will not be unreasonably withheld); provided, however, that Executive may, without the approval of the Board, serve in any capacity with any civic, educational, or charitable organization, provided such services do not interfere with Executive’s obligations to the Company. Executive shall comply at all times with the Company’s Code of Conduct and all other applicable Company policies. Executive shall perform his duties primarily at the Company’s corporate facility in San Jose, California.

(c) **Effective Date**. The Executive shall commence full-time Employment as CVP under this Agreement on the Effective Date.

2. **Cash and Incentive Compensation**.

(a) **Salary**. As of the Effective Date and thereafter, the Company shall pay Executive as compensation for his services a base salary at a gross annual rate of not less than $330,000 (such annual salary, as is then in effect, to be referred to herein as “Base Salary”). The Base Salary will be paid periodically in accordance with the Company’s normal payroll practices and be subject to the usual, required withholdings, provided, however, that Executive shall receive pro-rata payments of Base Salary no less frequently than once per month. Executive’s Base Salary will be subject to review by the Compensation Committee of the Board (the “Committee”) not less than annually, and adjustments will be made in the discretion of the Committee.

(b) **Incentive Bonuses**. For the Company’s fiscal year 2018 (subject to proration as hereafter provided) and beyond, Executive shall be a participant in a Cash Incentive Plan as established by the Company (the “CIP”). Under the CIP, Executive shall be eligible to be considered for an annual fiscal year incentive payment based on a percentage of Executive’s Base Salary as of the beginning of such fiscal year or such higher figure that the Committee may select (such annual amount is the “Target Amount”), provided Executive is employed at the end of the annual fiscal year. Executive’s initial target percentage amount is 65% of the Executive’s Base Salary (“Initial Target Amount”). The Target Amount shall be awarded based upon the achievement of specific milestones that will be established by the Committee no later than 60 days after the start of each fiscal year (the “Target Amount Milestones”). For superior achievement of the Target Amount Milestones, as determined in the Company’s sole discretion, Executive may earn a maximum annual fiscal year incentive bonus of up to 200% of Executive’s Target Amount (or 130% of Executive’s Base Salary). Cash payment for each fiscal year’s variable compensation actually earned shall be made to Executive no later than 45 days after the end of the applicable fiscal year for which the annual incentive was earned; provided, however, that the Company shall have no obligation to make such payment for a fiscal year until such time as the audit of the Company’s financial statements for such fiscal year has been completed and the Company has publicly reported its financial results for such fiscal year as long as such payment is made within 70 days of the end of the applicable fiscal year. For the Company’s fiscal year 2018, the annual fiscal year bonus earned by Executive under the CIP will be prorated for the partial year measured from the Effective Date. All awards of incentive compensation to executive officers of the Company are subject to the Company’s policy (including any amendments or such policy or any successor policy) to seek recovery, at the direction of the Company’s Board of Directors, to the extent permitted or required by applicable law, of incentive compensation awarded or paid to an executive officer of the Company for a fiscal period if the result of a performance measure upon which the award was based or paid is subsequently restated or otherwise adjusted in a manner that would reduce the size of the award or payment.

(c) **Terms of Company Compensatory Equity Awards**. Executive shall be eligible for grants of options to purchase shares of the Company’s common stock, restricted stock units, performance shares or other Company equity, pursuant to an applicable stockholder-approved equity compensation plan (the “Plan”) or in the case of initial grants to the Executive under rules applicable to inducement equity grants, at times and in such amounts as determined by the Committee (any prior or future compensatory equity grants to Executive shall be collectively referred to herein as “Compensatory Equity”). Initially, the Company will propose to the Board that the Executive be granted, which grants shall be made on the Effective Date:

i. An award with respect to shares of the Company’s common stock with a grant date fair value equal to $1.0 million, with the type of award to be restricted stock units, to be granted as of the Effective Date. With respect to the award of restricted stock units, the number of units granted will be equal to $1.0 million divided by the average closing price of the Company’s common stock on NASDAQ over the 30-calendar day period ending on the last day before the Effective Date (the “Average Price”). This grant will be subject to the terms and conditions of the Plan or rules applicable to inducement equity grants and the applicable Compensatory Equity agreement, and will vest and become exercisable or payable at a rate of 1/4 of the shares on the first anniversary of the Effective Date and quarterly thereafter.

ii. An award of restricted stock units with a grant date fair value equal to $1.0 million. The values of the units granted will be determined and fixed on the Effective Date using the Company’s standard valuation model incorporating a Monte-Carlo simulation. This grants will be subject to the terms and conditions of the Plan or rules applicable to inducement equity grants and the applicable Compensatory Equity agreement, and and will vest and become payable over a three-year period based upon the total shareholder return (TSR) of the Company relative to the PHLX Semiconductor Sector Index, with 100% of the units vesting at the 50th percentile and a multiplier to 200% of the units vesting at 75th percentile achievement, zero vesting if relative TSR is below the 25th percentile, and vesting scaling linearly for achievement between the 25th and 75th percentile. One third of the restricted stock units granted for vesting under this Section 2(d) (ii) shall be tested for vesting on each anniversary from the date of grant.

All grants of Compensatory Equity (and the issuance of any underlying shares) to Executive shall be: (i) issued pursuant to the Plan or rules applicable to inducement equity grants and (ii) issued pursuant to an effective registration statement filed with the Securities and Exchange Commission under the Securities Act of 1933 as amended. Accelerated vesting of Compensatory Equity may occur: (x) pursuant to the terms of this Agreement and in addition (y) pursuant to the terms of the Plan and any applicable Compensatory Equity agreement. Executive may elect to establish a trading plan in accordance with Rule 10b5-1 of the Securities Exchange Act of 1934 for any of his Compensatory Equity shares, provided, however, that such trading plan must comply with all of the requirements for the safe harbor under Rule 10b5-1 and must be either (i) approved by the Board (such approval not to be unreasonably withheld) or (ii) approved in accordance with any Rule 10b5-1 Trading Plan Policy the Company may subsequently implement.

(d) **Service Definition**. For purposes of this Agreement and Executive’s Compensatory Equity, “Service” shall mean service by the Executive as an employee and/or consultant of the Company (or any subsidiary or parent or affiliated entity of the Company) and/or service by the Executive as a member of the Board.

3. **Vacation and Employee Benefits**. During the term of his Employment, the Executive shall be entitled to vacation in accordance with the Company’s standard vacation policy. During the term of his Employment, the Executive shall be eligible to participate in any employee benefit plans or arrangements maintained by the Company on no less favorable terms than for other Company executives, subject in each case to the generally applicable terms and conditions of the plan or arrangement in question and to the determinations of any person or committee administering such plan or arrangement.

4. **Business Expenses**. During the term of his Employment, the Executive shall be authorized to incur necessary and reasonable travel, entertainment and other business expenses in connection with his duties hereunder. The Company shall promptly reimburse the Executive for such expenses upon presentation of appropriate supporting documentation, all in accordance with the Company’s generally applicable policies. The Company shall also timely pay for all of Executive’s reasonable home telecommunications phone and facsimile lines used for business purposes and reimburse Executive for his actual and reasonable mobile phone costs (in each case, during the term of his Employment) on a monthly basis. All such payments shall be made by the end of Executive’s next tax year. The amount eligible for reimbursement in one year will not affect the amount eligible for reimbursement in any other year, and the right to reimbursement is not subject to liquidation or exchange for another benefit.

5. **Term of Employment**.

(a) **Term of Agreement**. This Agreement will commence on the Effective Date and continue for a period of three (3) years (“Term”), unless earlier terminated as provided herein. If this Agreement is not extended by the Parties, it will terminate at the end of the Term.

(b) **Basic Rule**. The Company may terminate the Executive’s Employment with or without Cause, by giving the Executive 30 days’ advance notice in writing. Provided, however, where the termination is for Cause constituting events such as fraud, willful violation of insider trading rules, willful violation of conflict of interest policies, willful or unauthorized use or disclosure of trade secrets or other confidential information or conviction of a felony, the Company may terminate Executive’s Employment effective immediately upon notice. The Executive may terminate his Employment by giving the Company 30 days advance notice in writing. The Executive’s Employment shall terminate automatically in the event of his death. For avoidance of doubt, as Executive is an at-will employee, as outlined below, the definition of Cause is solely included for purposes of determining entitlement to severance.

(c) **Employment at Will**. The Executive's Employment with the Company shall be "at will," meaning that either the Executive or the Company shall be entitled to terminate the Executive's employment at any time and for any reason, with or without Cause. This Agreement shall constitute the full and complete agreement between the Executive and the Company on the "at will" nature of the Executive's Employment, which may only be changed in an express written agreement signed by the Executive and a member of the Board.

(d) **Rights Upon Termination**. Upon the termination of the Executive's Employment, the Executive shall be entitled to the compensation, benefits and reimbursements described in this Agreement for the period ending as of the effective date of the termination (the "Termination Date"). Upon termination of Executive's Employment for any reason, the Executive shall receive the following payments on the Termination Date: (i) all unpaid salary, and unpaid vacation accrued (if applicable), through the Termination Date, (ii) any unpaid, but earned and accrued incentive payments for any completed applicable determination period under the CIP (whether paid quarterly, annually or as might otherwise be established under the CIP) which was to have been paid under the terms of the CIP prior to but has not yet been paid on the Termination Date and (iii) any unreimbursed business expenses. Executive may also be eligible for other post-Employment payments and benefits as provided in this Agreement.

6. **Termination Benefits**.

(a) **Severance Pay**. If there is an Involuntary Termination (as defined below) of Executive's Employment, then the Company shall pay the Executive an amount equal to 1.0 times Executive's then Base Salary, plus up to 1.0 times Executive's then Target Amount (adjusted pro rata on a monthly basis depending upon the month in which the Involuntary Termination may occur and for the amount estimated by the Company's Finance group to be the anticipated Cash Incentive Plan payment percentage based on the performance of the Company anticipated for the applicable fiscal year) (collectively in the aggregate, the "Cash Severance"). Such Cash Severance shall be made in a single lump sum cash payment to Executive on the effective date of the separation agreement referenced in Section 8(a), provided Executive executes the separation agreement and general release in favor of the Company, without revocation. Executive shall also be entitled to receive the benefits provided in Sections 6(b) and 6(c) and, if applicable, 6(d).

(b) **Health Insurance**. If Subsection (a) above applies, such that Executive is entitled to Severance Pay, but subject to applicable law, and if Executive properly and timely elects to continue coverage under the Company's group health plan pursuant to Section 4980B(f) of the Internal Revenue Code of 1986, as amended ("COBRA") for Executive and his eligible covered dependents following the termination of his Employment, then the Company shall reimburse Executive's monthly premium under COBRA until the earliest of (i) twelve months after the Termination Date, (ii) the date when Executive commences receiving substantially equivalent health insurance coverage in connection with new employment, or (iii) the date Executive is no longer entitled to COBRA continuation coverage under the Company's group health plan. Notwithstanding the foregoing, Company may unilaterally amend this Section 6(b) or eliminate the benefit provided hereunder to the extent it deems necessary to avoid the imposition of excise taxes, penalties or similar charges on Company or any of its affiliates, including, without limitation, under Section 4980D of the Internal Revenue Code of 1986, as amended (the "Code"). Nothing herein is entitled to warranty or guarantee entitlement to COBRA and Executive acknowledges and agrees that he shall be solely responsible for paying such premiums as any obligation of the Company hereunder, if any, is to reimburse such premiums to Executive.

(c) **Equity Vesting**. If Subsection (a) above applies, then Executive will be vested only in that number of shares of Company common stock under all of Executive's outstanding Compensatory Equity as are actually vested as of the Termination Date according to the terms of such Compensatory Equity arrangements.

(d) **Effect of Change in Control**. If the Company is subject to a Change in Control (as defined below) and if there is an Involuntary Termination of Executive's Employment in connection with such Change in Control (it will automatically be deemed to be in connection with the Change in Control if there is an Involuntary Termination during the period commencing immediately prior to the Change in Control and extending through the date that is 24 months after the Change in Control): (x) Executive shall immediately vest in (and the Company's right to repurchase, if applicable, shall lapse immediately as to) all of Executive's Compensatory Equity including performance shares at their target amount, (y) the amount of the Cash Severance in Section 6(a) shall be increased such that while the Executive shall still receive 1.0 times Base Salary, he shall receive in addition 1.0 times Target Amount (with no pro ration or other adjustment), and (z) the duration of the subsidized COBRA coverage in Section 6(b) shall continue to be for 12 months.; provided, however, that Company may unilaterally amend clause (z) of this sentence or eliminate the benefit provided thereunder to the extent it deems necessary to avoid the imposition of excise taxes, penalties or similar charges on Company or any of its affiliates, including, without limitation, under Section 4980D of the Code.

(e) **Excise Tax**. Notwithstanding anything herein to the contrary, in the event that Executive becomes entitled to receive or receives any payment or benefit provided for under this Agreement or under any other plan, agreement, or arrangement with the Company, or from any person whose actions result in a Change in Control or any person affiliated with the Company or any such person (all such payments and benefits being referred to herein as the "Total Payments") and it is determined that any of the Total Payments (i) constitute "parachute payments" within the meaning of Section 280G of the Code and (ii) but for this Subsection (e), would be subject to the excise tax imposed by Section 4999 of the Code, then the Total Payments shall be payable either (1) in full, or (2) as to such lesser amount which would result in no portion of the Total Payments being subject to excise tax under Section 4999 of the Code, whichever of the foregoing amounts, taking into account the applicable federal, state and local income taxes and the excise tax imposed by Section 4999, results in the receipt by the Executive on an after-tax basis, of the greatest amount of the Total Payments, notwithstanding that all or some portion of the Total Payments may be taxable under Section 4999 of the Code. Unless Executive and the Company agree otherwise in writing, the determination of Executive's excise tax liability, if any, and the amount, if any, required to be paid under this Subsection (e) will be made in writing by the independent auditors who are primarily used by the Company immediately prior to the Change in Control (the "Accountants"). For purposes of making the calculations required by this Subsection (e), the Accountants may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code. Executive and the Company agree to furnish such information and documents as the Accountants may reasonably request in order to make a determination under this Subsection (e). The Company will bear all costs the Accountants may reasonably incur in connection with any calculations contemplated by this Subsection (e). Any reduction of the Total Payments shall be made first to any payments or benefits that are exempt from the application of Section 409A of the Code, and thereafter to any payments or benefits that are subject to Section 409A of the Code; provided that in applying this reduction methodology, the reduction shall be made in a manner consistent with the requirements of Section 409A of the Code, and where more than one of the Total Payments in a category has the same economic cost to Executive and such Total Payments are payable at different times, such Total Payments will be reduced on a pro-rata basis.

(f) **Change in Control Definition**. For purposes of this Agreement, "Change in Control" shall mean the occurrence of any of the following events: (i) the consummation of a merger or consolidation of the Company with or into another entity or any other corporate reorganization, if persons who were not stockholders of the Company immediately prior to such merger, consolidation or other reorganization own immediately after such merger, consolidation or other reorganization more than 50% of the voting power of the outstanding securities of each of (A) the continuing or surviving entity and (B) any direct or indirect parent corporation of such continuing or surviving entity, (ii) the sale, transfer or other disposition of all or substantially all of the Company's assets, or (iii) solely with respect to determining the treatment of Compensatory Equity under the terms of this Agreement, the terms of any applicable definition provided by the Plan and the applicable Compensatory Equity agreement. A transaction shall not constitute a Change in Control if its sole purpose is to change the state of the Company's incorporation or to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction.

(g) **Cause Definition**. For purposes of this Agreement, "Cause" shall mean (i) Executive's material breach of this Agreement that is not corrected within a 30 day correction period that begins upon delivery to Executive of a written demand from the Company that describes the basis for the Company's belief that Executive has materially breached this Agreement; (ii) any refusal to comply with the reasonable and lawful instructions of the Board; (iii) any willful act of fraud or dishonesty that causes material damage to the Company; (iv) any willful violation of the Company's insider trading policy; (v) any willful violation of the Company's conflict of interest policies; (vi) any willful unauthorized use or disclosure of trade secrets or other confidential information; or (vii) Executive's conviction of a felony.

The foregoing shall not be deemed an exclusive list of all acts or omissions that the Company may consider as grounds for the termination of Executive's Employment, but it is an exclusive list of the acts or omissions that shall be considered "Cause" for entitlement to Severance Pay. Executive's employment is at-will, as defined above.

(h) **Good Reason Definition**. For all purposes under this Agreement, "Good Reason" shall mean the occurrence of any of the following, without Executive's express written consent: (i) a material diminution of Executive's duties or responsibilities; (ii) a material diminution Executive's Base Salary or Target Amount other than a one-time reduction (not exceeding 10% in the aggregate) that also is applied to substantially all other executive officers of the Company on the Board's approval if Executive's reduction is substantially proportionate to, or no greater than (on a percentage basis), the reduction applied to substantially all other executive officers; (iii) the Company's material breach of this Agreement; or (iv) the Company requiring Executive to relocate his primary place of employment to a facility or location that is more than 50 miles from his principal place of employment as of the Effective Date; provided, however, that Executive will only have Good Reason if (i) he notifies the Board in writing of the existence of the condition which he believes constitutes Good Reason within ninety (90) days of the initial existence of such condition (which notice specifically identifies such condition), (ii) Company fails to remedy such condition within thirty (30) days after the date on which the Board receives such notice (the "Remedial Period"), and (iii) his resignation is effective within thirty (30) days after the expiration of the Remedial Period.

(i) **Involuntary Termination Definition**. For all purposes under this Agreement, "Involuntary Termination" shall mean any of the following that occur without Executive's prior written consent: (i) termination of Executive's Employment by the Company without Cause, or (ii) Executive's resignation of Employment for Good Reason.

7. **Successors**.

(a) **Company's Successors**. This Agreement shall be binding upon any successor (whether direct or indirect and whether by purchase, lease, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company's business and/or assets. For all purposes under this Agreement, the term "Company" shall include any successor to the Company's business and/or assets which becomes bound by this Agreement.

(b) **Executive's Successors**. This Agreement and all rights of the Executive hereunder shall inure to the benefit of, and be enforceable by, the Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

8. **Conditions to Receipt of Severance; No Duty to Mitigate**.

(a) **Separation Agreement and Release of Claims**. The receipt of any severance benefits pursuant to Section 6 will be subject to Executive signing and not revoking a separation agreement and release of claims in substantially the form attached hereto as Exhibit A, but with any appropriate modifications, reflecting changes in applicable law or other considerations (e.g., number of days to consider such release), as are necessary or appropriate to provide the Company with the protection it would have if the release were executed as of the Effective Date. No severance benefits will be paid or provided until the separation agreement and release agreement becomes effective. The separation agreement and release of claims must in all cases be effective by the 60th day following Executive's termination of Employment (or such earlier date as is provided in the release) or no severance benefits will be paid or provided under this Agreement. Notwithstanding anything herein to the contrary if the maximum period during which Executive can consider and revoke the release begins in one calendar year and ends in the subsequent calendar year, payment and provision of severance benefits under this Agreement shall not be made or commence to be made until the later of the effective date of the release and the first business day of the subsequent calendar year, regardless of when the release becomes effective.

(b) **Non-solicitation**. The receipt of any severance benefits will be subject to the Executive agreeing that during Employment and for the 12 month period after the Termination Date (the "Continuance Period"), the Executive will not (i) solicit any employee of the Company for employment other than at the Company, or (ii) , in light of Executive's access to confidential and proprietary information of the Company, solicit any customer, vendor, supplier, independent contractor or others having a business relationship with the Company that has the effect or purpose of decreasing or taking away the business or relationship with the Company. "Company" in this Section 8 refers to the Company and its subsidiaries.

(c) **Non-disparagement**. During Employment and the Continuance Period, the Executive will not knowingly publicly disparage, criticize, or otherwise make any derogatory statements regarding the Company, its directors, or its officers. The Company's then and future directors will not knowingly publicly disparage, criticize, or otherwise make any derogatory statements regarding the Executive during his Employment or the Continuance Period. The Company will also instruct its officers to not knowingly publicly disparage, criticize, or otherwise make any derogatory statements regarding the Executive during his Employment or the Continuance Period. Notwithstanding the foregoing, nothing contained in this Agreement will be deemed to restrict the Executive, the Company or any of the Company's current or former officers and/or directors from providing information to any governmental or regulatory agency (or in any way limit the content of such information) to the extent they are requested or required to provide such information pursuant to any applicable law or regulation. Further, nothing contained in this Agreement will be deemed to restrict Executive, the Company or any of the Company's current or former officers and/or directors from communicating or filing a complaint with any government agency or otherwise participating in any investigation or proceeding that may be conducted by any government agency, including providing documents or other information, without notice to the Company.

(d) **No Duty to Mitigate**. No payments or benefits provided to Executive (except as expressly provided in Section 6(b)) shall be subject to mitigation or offset.

9. **Miscellaneous Provisions**.

(a) **Indemnification**. The Company shall indemnify Executive to the maximum extent permitted by any applicable indemnification agreement, applicable law and the Company's bylaws with respect to Executive's Service (including timely advancing and/or reimbursing costs as incurred by Executive) and the Executive shall also be covered under a directors and officers liability insurance policy(ies) paid for by the Company.

(b) **Notice**. Notices and all other communications contemplated by this Agreement shall be in writing and shall be deemed to have been duly given when personally delivered or when mailed by overnight courier, U.S. registered or certified mail, return receipt requested and postage prepaid. In the case of the Executive, mailed notices shall be addressed to him at the home address that he most recently communicated to the Company in writing. In the case of the Company, mailed notices shall be addressed to its corporate headquarters, and all notices shall be directed to the attention of its General Counsel.

(c) **Arbitration**. With the exception of any claims for workers compensation, unemployment insurance, claims before any governmental administrative agencies as required by applicable law, or claims related to the National Labor Relations Act, any controversy relating to this Agreement or the Executive's employment, including any dispute or controversy arising out of or relating to any interpretation, construction, performance or breach of this Employment Agreement, or the Proprietary Rights Agreement, including, without limitation, employment claims, breach of contract claims, tort claims, wrongful termination claims, discrimination/harassment claims, claims for unpaid wages or other amounts, including pursuant to the California Labor Code, or any disputes related to this Arbitration provision (including its creation, terms, and enforceability), shall be settled by Company and Executive by binding arbitration. The arbitration proceeding will be administered by JAMS pursuant to its Employment Arbitration Rules & Procedures in effect as of the date the arbitration is initiated. The arbitrator shall have the authority to determine the enforceability of this Agreement as well as whether a claim is arbitrable, both of which shall be decided under the Federal

Arbitration Act. A copy of the JAMS Employment Arbitration Rules & Procedures is available online at http://www.jamsadr.com/rules-employment-arbitration and also by calling JAMS at 213-620-1133 if you have questions about the arbitration process. This Arbitration policy, any arbitration proceedings held pursuant to this Arbitration policy, and any state court, federal court, or other proceeding concerning arbitration under this Arbitration policy are expressly subject to and governed by the Federal Arbitration Act, 9 U.S.C. § 1 et seq. ("FAA"). Such arbitration shall be presided over by a single arbitrator in San Francisco Bay Area, California. The Company shall bear all costs uniquely associated with the arbitration process, including the arbitrator's fees, where required by applicable law. The arbitrator shall have the authority to award any damages authorized by law. This agreement to arbitrate shall apply to both the Company and Executive. The parties understand that they are giving up their right to a trial in a court of law.

(d) **Modifications and Waivers**. No provision of this Agreement shall be modified, waived or discharged unless the modification, waiver or discharge is agreed to in writing and signed by the Executive and by an authorized officer of the Company (other than the Executive). No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party shall be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(e) **Whole Agreement**. This Agreement contains the entire understanding of the parties with respect to the subject matter hereof and supersedes any other agreements, representations or understandings (whether oral or written and whether express or implied) with respect to the subject matter hereof. In the event of any conflict in terms between this Agreement and/or the Plan and/or any agreement executed by and between Executive and the Company, the terms of this Agreement shall prevail and govern.

(f) **Legal Fees**. Each party shall pay its own legal fees and expenses incurred in connection with the preparation and execution of this Agreement.

(g) **Withholding Taxes**. All payments made under this Agreement shall be subject to reduction to reflect taxes or other charges required to be withheld by law.

(h) **Choice of Law**. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of California (except their provisions governing the choice of law).

(i) **Severability**. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision hereof, which shall remain in full force and effect.

(j) **Code Section 409A**. The parties intend that this Agreement and the payments and benefits provided hereunder, including, without limitation, those provided pursuant to Section 6 hereof, be exempt from the requirements of Section 409A of the Code ("Section 409A") to the maximum extent possible, whether pursuant to the short-term deferral exception described in Treasury Regulation Section 1.409A-1(b)(4), the involuntary separation pay plan exception described in Treasury Regulation Section 1.409A-1(b)(9)(iii), or otherwise. To the extent Section 409A is applicable to this Agreement, the parties intend that this Agreement and any payments and benefits thereunder comply with the deferral, payout and other limitations and restrictions imposed under Section 409A. Notwithstanding anything herein to the contrary, this Agreement shall be interpreted, operated and administered in a manner consistent with such intentions; provided, however that in no event shall the Company or any of its parents, subsidiaries or affiliates be liable to Executive or any other person for any additional tax, interest or penalty that may be imposed on Executive or any other person under, or as a result of, Section 409A or for any damages incurred by Executive or any other person as a result of this Agreement's (or the payments' or benefits' provided hereunder) failure to comply with, or be exempt from, Section 409A. Without limiting the generality of the foregoing, and notwithstanding any other provision of this Agreement to the contrary (other than the proviso in the immediately preceding sentence):

i. if at the time Executive's employment hereunder terminates, Executive is a "specified employee," as defined in Section 409A(a)(2)(B)(i) of the Code, any and all amounts payable under this Agreement on account of such termination of employment that would (but for this provision) be payable within six (6) months following the date of termination, shall instead be paid in a lump sum on the first day of the seventh month following the date on which Executive's employment terminates or, if earlier, upon Executive's death, except (i) to the extent of amounts that do not constitute a deferral of compensation within the meaning of Treasury Regulation Section 1.409A-1(b) (including without limitation by reason of the safe harbor set forth in Treasury Regulation Section 1.409A-1(b)(9)(iii), as determined by the Company in its reasonable good faith discretion); (ii) benefits which qualify as excepted welfare benefits pursuant to Treasury Regulation Section 1.409A 1(a)(5); and (iii) other amounts or benefits that are not subject to the requirements of Section 409A;

ii. a termination of employment shall not be deemed to have occurred for purposes of any provision of this Agreement providing for the payment of amounts or benefits upon or following a termination of employment unless such termination is also a "separation from service," as defined in Treasury Regulation Section 1.409A-1(h) after giving effect to the presumptions contained therein, and, for purposes of any such provision of this Agreement, references to a "terminate," "termination," "termination of employment," "resignation" and like terms shall mean separation from service; and

iii. each payment made under this Agreement shall be treated as a separate payment and the right to a series of installment payments under this Agreement shall be treated as a right to a series of separate payments.

(k) **No Assignment**. This Agreement and all rights and obligations of the Executive hereunder are personal to the Executive and may not be transferred or assigned by the Executive at any time. The Company may assign its rights under this Agreement to any entity that expressly in writing assumes the Company's obligations hereunder in connection with any sale or transfer of all or substantially all of the Company's assets to such entity.

(l) **Counterparts**. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, each of the parties has executed this Agreement, in the case of the Company by its duly authorized officer, as of the Effective Date.

/s/ Stephen Douglass
Stephen Douglass

Lattice Semiconductor Corporation

By: /s/ Byron W. Milstead

Name: Byron W. Milstead

Title: CVP, General Counsel

EXHIBIT A

GENERAL RELEASE

RECITALS

This Separation Agreement and Release (“Agreement”) is made by and between ___________________ (“Employee”) and Lattice Semiconductor Corporation (the “Company”) (jointly referred to as the “Parties”):

WHEREAS, Employee is employed by the Company;

WHEREAS, the Company and Employee entered into an Employment Agreement dated ________________ (the “Employment Agreement”);

WHEREAS, the Parties agree that Employee’s employment with the Company will terminate on _________________ (the “Termination Date”);

WHEREAS, the Company and Employee entered into a Proprietary Rights Agreement dated [__________] regarding intellectual property and confidential information (the “Proprietary Rights Agreement”);

WHEREAS, the Company and Employee entered into an Indemnification Agreement, dated [_______], regarding Employee’s rights to indemnification (the “Indemnification Agreement”);

WHEREAS, the Company and Employee entered into Equity Agreements dated [____] granting Employee the option to purchase shares of the Company’s common stock subject to the terms and conditions of the Company’s Stock Option Plan(s) and the Stock Option Agreements and is the grantee of restricted stock units and performance shares representing shares of the Company’s common stock pursuant to the terms of Notice(s) of Grant and related equity incentive plans (the “Equity Agreements”);

WHEREAS, the Parties wish to resolve any and all disputes, claims, complaints, grievances, charges, actions, petitions and demands that Employee may have against the Company as defined herein, arising out of, or related to, Employee’s employment with, or separation from, the Company;

NOW THEREFORE, in consideration of the promises made herein, the Parties hereby agree as follows:

COVENANTS

1. **Consideration.**

a. Pursuant to Section 8(a) of the Employment Agreement, Employee's receipt of severance is subject to Employee executing and not revoking this Release. In consideration of Employee executing and not revoking this Release, the Company agrees to pay (or provide, as applicable) Employee a cash payment of $_________ on the Effective Date and also the benefits specified in the Employment Agreement. Employee acknowledges that such cash payment and the provision of such benefits will be in full satisfaction of the payments and obligations provided under the Employment Agreement and he will not be entitled to any additional salary, wages, bonuses, accrued vacation, housing allowances, relocation costs, interest, severance, stock, stock options, outplacement costs, fees, commissions or any other benefits and compensation, except as provided in any Company employee welfare or pension benefit plans as defined by the Employee Retirement Income Security Act of 1974, as amended ("ERISA") (such plans, the "Benefit Plans"), this Agreement, the Indemnification Agreement, the Deferred Compensation Plan and/or the Equity Agreements.

b. Stock. Employee acknowledges that as of the Termination Date, and after taking into account any accelerated vesting provided by the Employment Agreement or Stock Agreements, he will then hold vested stock options to acquire [______] shares of Company common stock and no more, and will hold vested restricted stock units that will be settled for [______] shares of Company common stock and no more. The exercise of any stock options and the settlement of any restricted stock units shall continue to be subject to the terms and conditions of the Equity Agreements and the Employment Agreement.

c. Benefits. Employee's health insurance benefits will cease on the last day of the month of the Termination Date, subject to Employee's right to continue his health insurance as provided in the Employment Agreement (with such premiums to be paid by the Company as provided in the Employment Agreement). Subject to the Employment Agreement, the Deferred Compensation Plan, the Indemnification Agreement, the Equity Agreements and/or the Benefit Plans, Employee's participation in all other benefits and incidents of employment (including, but not limited to, the accrual of vacation and paid time off, and the vesting of stock options and restricted stock units) will cease on the Termination Date.

2. **Confidential Information.** Employee shall continue to comply with the terms and conditions of the Proprietary Rights Agreement, and maintain the confidentiality of all of the Company's confidential and proprietary information. Employee also shall return to the Company all of the Company's property, including all confidential and proprietary information, in Employee's possession, on or before the Effective Date.

3. **Release of Claims.** Employee agrees that the foregoing consideration represents settlement in full of all outstanding obligations owed to Employee by the Company. Employee, on his own behalf and on behalf of his respective heirs, family members, executors, agents, and assigns, hereby fully and forever releases the Company and its current and former: officers, directors, employees, agents, investors, attorneys, shareholders, administrators, affiliates, divisions, subsidiaries, predecessor and successor corporations and assigns (the "Releasees") from, and agrees not to sue any of the Releasees concerning, any claim, duty, obligation or cause of action for monetary damages relating to any matters of any kind arising out of or relating to his employment by the Company (except as provided in the Employment Agreement), or his service as an officer of the Company and/or a director of the Company, whether presently known or unknown, suspected or unsuspected, that Employee may possess arising from any omissions, acts or facts that have occurred up until and including the Effective Date, excluding the "Excluded Claims" (as defined below) and including, without limitation:

a. any and all claims relating to or arising from Employee's employment with the Company, or the termination of that employment;

b. any and all claims relating to, or arising from, Employee's right to purchase, or actual purchase of, shares of Company stock, including, but not limited to, any claims for fraud, misrepresentation, breach of fiduciary duty, breach of duty under applicable state corporate law, and securities fraud under any state or federal law;

c. any and all claims under the law of any jurisdiction, including, but not limited to, wrongful discharge of employment; constructive discharge from employment; termination in violation of public policy; discrimination; breach of contract, both express and implied; breach of a covenant of good faith and fair dealing, both express and implied; promissory estoppel; negligent or intentional infliction of emotional distress; negligent or intentional misrepresentation; negligent or intentional interference with contract or prospective economic advantage; unfair business practices; defamation; libel; slander; negligence; personal injury; assault; battery; invasion of privacy; false imprisonment; and conversion;

d. any and all claims for violation of any federal, state or municipal statute, including, but not limited to, Title VII of the Civil Rights Act of 1964; the Civil Rights Act of 1991; the Age Discrimination in Employment Act of 1967; the Americans with Disabilities Act of 1990; the Fair Labor Standards Act; ERISA; the Worker Adjustment and Retraining Notification Act; the Older Workers Benefit Protection Act; the Family and Medical Leave Act; and the Fair Credit Reporting Act;

e. any and all claims for violation of the federal, or any state, constitution;

f. any and all claims arising out of any other laws and regulations relating to employment or employment discrimination; and

g. any and all claims for attorney fees and costs.

For purposes of this Agreement, the “Excluded Claims” shall include any claims pursuant to the Benefit Plans, the Deferred Compensation Plan, the Indemnification Agreement, the non-disparagement clause of Section 8(c) of the Employment Agreement, the right to indemnification under Section 9(a) of the Employment Agreement, and any right to exercise stock options or receive restricted stock units pursuant to the relevant provisions of the Equity Agreements.

4. **Acknowledgement of Waiver of Claims Under ADEA.** Employee acknowledges that he is waiving and releasing any rights he may have against the Releasees for monetary damages under the Age Discrimination in Employment Act of 1967 (“ADEA”) and that this waiver and release is knowing and voluntary. Employee and the Company agree that this waiver and release does not apply to any rights or claims that may arise under the ADEA after the Effective Date. Employee acknowledges that the consideration given for this waiver and release Agreement is in addition to anything of value to which Employee was already entitled. Employee further acknowledges that he has been advised by this writing that:

a. he should consult with an attorney prior to executing this Release;

b. he has up to twenty-one (21) days within which to consider this Release;

c. he has seven (7) days following his execution of this Release to revoke this Release;

d. this ADEA waiver shall not be effective until the revocation period has expired; and,

e. nothing in this Release prevents or precludes Employee from challenging or seeking a determination in good faith of the validity of this waiver under the ADEA, nor does it impose any condition precedent, penalties or costs for doing so, unless specifically authorized by federal law.

5. **Unknown Claims.** Employee acknowledges that he has been advised by legal counsel and are familiar with the principle that a general release does not extend to claims which the releasor does not know or suspect to exist in his favor at the time of executing the Release, which if known by him must have materially affected his settlement with the Releasee. Employee, being aware of said principle, agrees to expressly waive any rights Employee may have to that effect, as well as under any other statute or common law principles of similar effect. For avoidance of doubt, it is a condition hereof, and it is Employee’s intention in the execution of the General Release herein that the same shall be effective as a bar to each and every claim specified above, and in furtherance of this intention, Employee hereby expressly waives any and all rights and benefits conferred upon him by Section 1542 of the California Civil Code which provides: A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the Release, which if known by him or her must have materially affected his or her settlement with the debtor.

Employee agrees to waive the right to receive future monetary recovery directly from the Company, including Company payments that result from any complaints or charges that Employee files with any governmental agency or that are filed on his behalf.

6. **Application for Employment.** Employee understands and agrees that, as a condition of this Release, he shall not be entitled to any employment with the Company, its subsidiaries, or any successor, and he hereby waives any alleged right of employment or re-employment with the Company, its subsidiaries or related companies, or any successor.

7. **No Cooperation.** Employee agrees that he will not knowingly counsel or assist any attorneys or their clients in the presentation or prosecution of any disputes, differences, grievances, claims, charges, or complaints by any third party against any of the Releasees for monetary damages, unless requested by a governmental agency or unless under a subpoena or other court order to do so. Employee agrees both to immediately notify the Company upon receipt of any such subpoena or court order, and to furnish, within three (3) business days of its receipt, a copy of such subpoena or court order to the Company. If otherwise approached by anyone for counsel or assistance in the presentation or prosecution of any disputes, differences, grievances, claims, charges, or complaints against any of the Releasees, Employee shall state no more than that he cannot provide such counsel or assistance. Nothing in this Agreement is intended to or will be used in any way to limit Employee’s right to communicate with a government agency, as provided for, protected under or warranted under applicable law.

8. **Costs.** The Parties shall each bear their own costs, expert fees, attorney fees and other fees incurred in connection with the preparation of this Release.

9. **Arbitration.** The Parties agree that any and all disputes arising out of, or relating to, the terms of this Release, their interpretation, and any of the matters herein released, shall be subject to binding arbitration as described in Section 9(c) of the Employment Agreement.

10. **No Representations.** Each Party represents that it has had the opportunity to consult with an attorney, and has carefully read and understands the scope and effect of the provisions of this Release. Neither Party has relied upon any representations or statements made by the other Party hereto which are not specifically set forth in this Release.

11. **No Oral Modification.** Any modification or amendment of this Release, or additional obligation assumed by either Party in connection with this Release, shall be effective only if placed in writing and signed by both Parties or their authorized representatives.

12. **Entire Agreement.** This Release, the Employment Agreement, the Indemnification Agreement, the Deferred Compensation Plan, the Benefit Plans, the Proprietary Rights Agreement and the Equity Agreements represent the entire agreement and understanding between the Company and Employee concerning the subject matter of this Release and Employee's relationship with the Company, and supersede and replace any and all prior agreements and understandings between the Parties concerning the subject matter of this Release and Employee's relationship with the Company.

13. **Governing Law.** This Release shall be governed by the laws of the State of California, without regard for choice of law provisions.

14. **Effective Date.** This Release is only effective after it has been signed by both parties and after eight (8) days have passed following the date Employee signed the Agreement without Employee revoking this Agreement (the "Effective Date").

15. **Voluntary Execution of Release.** This Release is executed voluntarily and with the full intent of releasing all claims, and without any duress or undue influence by any of the Parties. The Parties acknowledge that:

a. They have read this Release;

b. They have been represented in the preparation, negotiation, and execution of this Release by legal counsel of their own choice or that they have voluntarily declined to seek such counsel;

c. They understand the terms and consequences of this Release and of the releases it contains; and

d. They are fully aware of the legal and binding effect of this Release.

IN WITNESS WHEREOF, each of the Parties has executed this Release, in the case of the Company by a duly authorized officer, as of the day and year written below.

COMPANY:

LATTICE SEMICONDUCTOR CORPORATION

By: ________________________________ Date: __________________________

Title: ________________________________

EMPLOYEE:

____________________________________ Date: __________________________
Stephen Douglass

[**DO NOT SIGN PRIOR TO THE TERMINATION DATE**]

Exhibit 10.3

September 28, 2018

Mr. Max Downing

Re: Termination of Employment by Lattice Semiconductor Corporation

Dear Max:

The purpose of this letter is to confirm the discussion between Mr. Mark Jensen, Ms. Gloria Zabel and you on August 27, 2018, and to provide you more formal notice that, pursuant to Section 5(b) of the Employment Agreement by and between Lattice Semiconductor Corporation (the "Company") and you, dated as of October 18, 2017 (the "Employment Agreement"), the Company intends to terminate your employment as Corporate Vice President, Chief Financial Officer, on or before the date of the filing of the Company's annual report on form 10-K, anticipated on or about February 28, 2019. This will be an Involuntary Termination within the meaning of the Employment Agreement. Subject to your execution and non-revocation of a release, substantially in the form of the Separation Agreement and General Release that we will provide and review with you, you will be entitled to the benefits set forth in Section 6 of your Employment Agreement and more particularly described in the Separation Agreement and General Release.

In addition to those benefits, Mr. Jensen indicated to you that the Company is prepared to provide you a supplemental separation benefit as follows:

- For each month of service commencing September 1, 2017, you will receive an extra month of salary ($25,833 per month) payable at your termination, subject to the following conditions:
  - You must enter into and not revoke the aforementioned release;
  - The 10-K must be timely filed and the prior period material weakness must be mitigated and no new material weakness identified;
  - You must fulfill the duties of your position and support the transition to the new CFO;
  - The Company reserves the right to place you on paid leave in the event it determines your services are not required to and until February 28, 2019 but you will receive the entirety of your benefits through that date;
  - Should you elect to terminate your employment prior to February 28, 2019 and provide the Company 30 days' prior notice in advance of the termination date you will receive your Employment Agreement separation benefits but the supplemental benefit will be pro rated based on the actual time you provided service; and
  - Should you elect to terminate your employment prior to February 28, 2019 and fail to provide the Company 30 days' prior notice in advance of the termination date you will not receive the supplemental benefit.

Sincerely,
LATTICE SEMICONDUCTOR CORPORATION

/s/ Byron W. Milstead

Byron W. Milstead
Corp. Vice President and General Counsel

Exhibit 31.1

CERTIFICATION

I, James Anderson, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Lattice Semiconductor Corporation;
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(s) 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 (the registrant's fourth fiscal quarter in the case of an annual report) 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(s) 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: October 29, 2018

/s/ James Anderson

James Anderson

Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, Max Downing, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Lattice Semiconductor Corporation;
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(s) 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 (the registrant's fourth fiscal quarter in the case of an annual report) 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(s) 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: October 29, 2018

/s/ Max Downing

Max Downing

Chief Financial Officer

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE 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 of Lattice Semiconductor Corporation (the Company) on Form 10-Q for the quarter ended September 29, 2018 (the Report), I, James Anderson, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement has been provided to the Company and will be retained by the Company and furnished to the SEC or its staff upon request.

/s/ James Anderson

James Anderson

Chief Executive Officer

Date: October 29, 2018

Exhibit 32.2

CERTIFICATION OF 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 of Lattice Semiconductor Corporation (the Company) on Form 10-Q for the quarter ended September 29, 2018 (the Report), I, Max Downing, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement has been provided to the Company and will be retained by the Company and furnished to the SEC or its staff upon request.

/s/ Max Downing
Max Downing
Chief Financial Officer

Date: October 29, 2018