

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

FOR THE QUARTERLY PERIOD ENDED MARCH 30, 2019

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.)

5555 NE Moore Court, Hillsboro, OR

97124

(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 No

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

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

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

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, \$.01 par value	LSCC	NASDAQ Global Select Market

Number of shares of common stock outstanding as of April 29, 2019 132,017,866

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 strategies and beliefs regarding investments in financial instruments; our expectations regarding the dilutive effects of equity awards; our expectations regarding emerging trends and market opportunities, our expectations regarding market infrastructure and growth areas, our future investments in research and development and our product leadership; 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 recorded under, and the timing and results of, restructuring plans; the sufficiency of our financial resources to meet our operating and working capital needs through at least the next 12 months; our continued participation in or sources of revenue from standard setting initiatives or consortia that develop and promote the High-Definition Multimedia Interface (“HDMI”) specification 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 expectations regarding taxes and tax adjustments, particularly with respect to the Tax Cuts and Jobs Act; our expectations regarding the possibility and 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; and our intention to sublease vacated leased space in San Jose, California and Portland, Oregon; our expectations regarding our implementation of a company-wide enterprise resource planning system; our beliefs regarding legal proceedings, 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, market and technology trends, our ability to license or sell 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, 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 Part I, Item 1A, “Risk Factors,” in our Annual Report on Form 10-K for the fiscal year ended December 29, 2018 filed with the SEC on February 26, 2019.

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	
	March 30, 2019	March 31, 2018
<i>(In thousands, except per share data)</i>		
Revenue:		
Product	\$ 91,612	\$ 95,109
Licensing and services	6,479	3,514
Total revenue	98,091	98,623
Costs and expenses:		
Cost of product revenue	40,439	42,102
Research and development	19,665	22,941
Selling, general, and administrative	20,781	27,043
Amortization of acquired intangible assets	3,389	5,636
Restructuring charges	1,341	1,029
Acquisition related charges	—	667
Total costs and expenses	85,615	99,418
Income (loss) from operations	12,476	(795)
Interest expense	(4,987)	(5,114)
Other income, net	153	554
Income (loss) before income taxes	7,642	(5,355)
Income tax expense	234	597
Net income (loss)	\$ 7,408	\$ (5,952)
Net income (loss) per share:		
Basic	\$ 0.06	\$ (0.05)
Diluted	\$ 0.05	\$ (0.05)
Shares used in per share calculations:		
Basic	130,992	124,076
Diluted	134,810	124,076

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(unaudited)

	Three Months Ended	
	March 30, 2019	March 31, 2018
<i>(In thousands)</i>		
Net income (loss)	\$ 7,408	\$ (5,952)
Other comprehensive income (loss):		
Unrealized gain (loss) related to marketable securities, net of tax	42	(7)
Reclassification adjustment for gains related to marketable securities included in Other income, net of tax	(53)	(1)
Translation adjustment, net of tax	47	589
Comprehensive income (loss)	<u>\$ 7,444</u>	<u>\$ (5,371)</u>

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION

CONSOLIDATED BALANCE SHEETS

(unaudited)

<i>(In thousands, except share and par value data)</i>	March 30, 2019	December 29, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 130,391	\$ 119,051
Short-term marketable securities	—	9,624
Accounts receivable, net of allowance for doubtful accounts	55,606	60,890
Inventories	66,773	67,096
Prepaid expenses and other current assets	28,993	27,762
Total current assets	281,763	284,423
Property and equipment, less accumulated depreciation of \$139,985 at March 30, 2019 and \$141,367 at December 29, 2018	36,758	34,883
Operating lease right-of-use assets	27,868	—
Intangible assets, net	17,187	21,325
Goodwill	267,514	267,514
Deferred income taxes	215	215
Other long-term assets	13,421	15,327
Total assets	<u>\$ 644,726</u>	<u>\$ 623,687</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses (includes restructuring)	\$ 50,789	\$ 51,763
Accrued payroll obligations	6,577	9,365
Current portion of long-term debt	7,796	8,290
Current portion of operating lease liabilities	5,027	—
Total current liabilities	70,189	69,418
Long-term debt, net of current portion	225,662	251,357
Long-term operating lease liabilities, net of current portion	25,376	—
Other long-term liabilities	42,344	44,455
Total liabilities	363,571	365,230
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; 131,905,000 shares issued and outstanding as of March 30, 2019 and 129,728,000 shares issued and outstanding as of December 29, 2018	1,319	1,297
Additional paid-in capital	751,506	736,274
Accumulated deficit	(469,375)	(476,783)
Accumulated other comprehensive loss	(2,295)	(2,331)
Total stockholders' equity	281,155	258,457
Total liabilities and stockholders' equity	<u>\$ 644,726</u>	<u>\$ 623,687</u>

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

(unaudited)

(In thousands)	Three Months Ended	
	March 30, 2019	March 31, 2018
Cash flows from operating activities:		
Net income (loss)	\$ 7,408	\$ (5,952)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation and amortization	8,403	12,356
Amortization of operating lease right-of-use assets	1,487	—
Amortization of debt issuance costs and discount	686	507
Gain on sale or maturity of marketable securities	(53)	(1)
(Gain) loss on forward contracts	(84)	99
Stock-based compensation expense	3,686	4,800
Impairment of operating lease right-of-use asset (recorded in Restructuring charges)	757	—
Loss (gain) on disposal of fixed assets	8	(58)
Changes in assets and liabilities:		
Accounts receivable, net	5,284	(8,867)
Inventories	323	2,356
Prepaid expenses and other assets	(1,965)	(3,253)
Accounts payable and accrued expenses (includes restructuring)	330	1,567
Accrued payroll obligations	(2,788)	(1,441)
Operating lease liabilities, current and long-term portions	(2,089)	—
Income taxes payable	365	413
Deferred licensing and services revenue	—	(68)
Net cash provided by operating activities	21,758	2,458
Cash flows from investing activities:		
Proceeds from sales of and maturities of short-term marketable securities	9,655	2,500
Purchases of marketable securities	—	(9,603)
Capital expenditures	(3,074)	(1,804)
Cash paid for software licenses	(1,739)	(1,837)
Net cash provided by (used in) investing activities	4,842	(10,744)
Cash flows from financing activities:		
Restricted stock unit tax withholdings	(418)	(459)
Proceeds from issuance of common stock	11,986	1,608
Repayment of debt	(26,875)	(875)
Net cash (used in) provided by financing activities	(15,307)	274
Effect of exchange rate change on cash	47	589
Net increase (decrease) in cash and cash equivalents	11,340	(7,423)
Beginning cash and cash equivalents	119,051	106,815
Ending cash and cash equivalents	\$ 130,391	\$ 99,392
Supplemental disclosure of cash flow information and non-cash investing and financing activities:		
Interest paid	\$ 4,383	\$ 4,420
Operating lease payments	\$ 2,597	\$ —
Income taxes paid, net of refunds	\$ 280	\$ 40
Accrued purchases of plant and equipment	\$ 1,417	\$ 232
Operating lease right-of-use assets obtained in exchange for lease obligations	\$ 219	\$ —
Change in unrealized (gain) loss related to marketable securities, net of tax, included in Accumulated other comprehensive loss	\$ (42)	\$ 7

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 29, 2018.

Fiscal Reporting Period

We report based on a 52 or 53-week fiscal year ending on the Saturday closest to December 31. Our first quarter of fiscal 2019 and first quarter of fiscal 2018 ended on March 30, 2019 and March 31, 2018, respectively. All references to quarterly financial results are references to the results for the relevant 13-week period.

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.

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 and contract liabilities, inventory, depreciable lives of fixed assets, lease right-of-use assets and lease liabilities, 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, 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

From time to time, 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 income, net in our Consolidated Statements of Operations. 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:

	March 30, 2019	December 29, 2018
Total cost of contracts for Japanese yen (<i>in thousands</i>)	\$ 2,883	\$ 1,955
Number of contracts	3	2
Settlement month	June 2019	June 2019

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 income, net, with gains of approximately \$0.1 million for each of the fiscal quarters ended March 30, 2019 and December 29, 2018. We do not hold or issue derivative financial instruments for trading or speculative purposes.

Concentration Risk

Potential exposure to concentration risk may impact revenue, accounts receivable, and supply of wafers for our products.

Customer and distributor concentration risk may impact revenue. In the periods covered by this report, no end customer accounted for more than 10% of total revenue.

Distributors have historically accounted for a significant portion of our total revenue. Revenue attributable to distributors as a percentage of total revenue was 79% and 87% for the three months ended March 30, 2019 and March 31, 2018, respectively.

Our two largest distributor groups, Arrow Electronics, Inc. ("Arrow") and the Weikeng Group ("Weikeng"), also account for a substantial portion of our net accounts receivable. At March 30, 2019 and December 29, 2018, Arrow accounted for 34% and 41%, respectively, and Weikeng accounted for 32% and 23%, respectively, of net accounts receivable. A third distributor accounted for 12% of net accounts receivable at March 30, 2019, but accounted for less than 10% of net accounts receivable at December 29, 2018. No other distributor group or end customer accounted for more than 10% of net accounts receivable at these dates.

Concentration of credit risk with respect to accounts receivable 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 \$0.2 million at both March 30, 2019 and December 29, 2018. 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.

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.

Leases

On December 30, 2018, the first day of our 2019 fiscal year, we adopted Accounting Standards Update ("ASU") No. 2016-02, *Leases (Topic 842)*, which increases transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. See "Note 7 - Leases" for further information on our leases and our application of Topic 842.

Goodwill

Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. 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.

New Accounting Pronouncements

Recently Issued Accounting Standards

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.

In March 2019, the FASB issued ASU 2019-01, *Leases (Topic 842): Codification Improvements*, which clarified the FASB's original intent to grant disclosure relief for interim periods during the year in which a company adopts Topic 842. ASU 2019-01 accomplishes this by explicitly providing an exception to the paragraph 250-10-50-3 interim disclosure requirements in the Topic 842 transition disclosure requirements. Paragraph 250-10-50-3 requires entities to provide in the fiscal year in which a new accounting principle is adopted the identical disclosures for interim periods after the date of adoption. Thus, ASU 2019-01 exempts entities from such reporting in interim periods in the fiscal year in which the entities adopt Topic 842. The amendments set forth in ASC 2019-01 take effect in fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted. We will follow this exception for interim periods in the current fiscal year, concurrent with our adoption of Topic 842.

Note 2 - Revenue from Contracts with Customers

We adopted ASC 606, "Revenue from Contracts with Customers," effective on December 31, 2017, the first day of our 2018 fiscal year, using the modified retrospective method. 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 ("OEMs") and to 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 to monetize our IP 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, but which also may include inventory), we allocate revenue to each performance obligation based on the best estimate of the standalone selling price of each obligation. When available, we use the observable standalone selling price of the performance obligations. When the standalone selling price is not directly observable, we use an adjusted market assessment approach or the expected cost plus margin approach to estimate standalone selling price.

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.

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, "*Other Assets and Deferred Costs*," 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.

As of March 30, 2019, we have contract liabilities totaling approximately \$3.9 million, which is comprised of approximately \$3.2 million accrued for estimated future stock rotation and scrap returns. We also have a contract liability of approximately \$0.7 million related to a prepayment for products to be manufactured and delivered to the customer within six months. We will recognize the revenue related to the contract liability when control of the product is transferred to the end customer.

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.

The following table summarizes the activity for our contract assets during the first three months of fiscal 2019:

(In thousands)

Balance as of December 29, 2018	\$	9,143
Revenues recorded during the period		2,947
Transferred to accounts receivable or collected		(1,118)
Balance as of March 30, 2019	\$	10,972

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

(In thousands)

	Three Months Ended	
	March 30, 2019	March 31, 2018
Product revenue - Distributors	77,472	85,957
Product revenue - Direct	14,140	9,152
Licensing and services revenue	6,479	3,514
Total revenue	98,091	98,623

Revenue by Geographical Market

(In thousands)

	Three Months Ended	
	March 30, 2019	March 31, 2018
Asia	69,011	71,921
Europe	12,210	12,142
Americas	16,870	14,560
Total revenue	98,091	98,623

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.

The number of shares from our equity awards with market conditions or performance conditions that are included in the diluted share count is based on the number of shares, if any, that would be issuable under the terms of such awards at the end of the reporting period. Under these terms, the maximum number of shares issuable from the equity awards with a market condition are included in the diluted share count as of March 30, 2019, as the market condition would have been achieved at the highest level of vesting if measured as of the end of the reporting period. No shares related to the performance conditions are included in the diluted share count as of March 30, 2019, as vesting of these awards is contingent upon evaluation of the performance condition over two consecutive trailing four-quarter periods, which have not yet elapsed. See "Note 15 - Stock-Based Compensation" to our consolidated financial statements for further discussion of our equity awards with market conditions or performance conditions.

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

	Three Months Ended	
	March 30, 2019	March 31, 2018
<i>(in thousands, except per share data)</i>		
Net income (loss)	\$ 7,408	\$ (5,952)
Shares used in basic Net income (loss) per share	130,992	124,076
Dilutive effect of stock options, RSUs, ESPP shares, and equity awards with a market condition or performance condition	3,818	—
Shares used in diluted Net income (loss) per share	134,810	124,076
Basic Net income (loss) per share	\$ 0.06	\$ (0.05)
Diluted Net income (loss) per share	\$ 0.05	\$ (0.05)

The computation of diluted Net income (loss) per share excludes the effects of stock options, RSUs, ESPP shares, and equity awards with a market condition or performance condition that are antidilutive, aggregating approximately the following number of shares:

	Three Months Ended	
	March 30, 2019	March 31, 2018
<i>(in thousands)</i>		
Stock options, RSUs, ESPP shares, and equity awards with a market condition or performance condition excluded as they are antidilutive	812	9,424

Stock options, RSUs, ESPP shares, and equity awards with a market condition or performance condition 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 March 30, 2019 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. During the periods presented, our Short-term marketable securities consisted of U.S. government agency obligations with contractual maturities of up to two years. We liquidated our Short-term marketable securities during the first quarter of fiscal 2019. The following table summarizes the remaining maturities of our Short-term marketable securities at fair value:

	March 30, 2019	December 29, 2018
<i>(In thousands)</i>		
Short-term marketable securities:		
Maturing within one year	\$ —	\$ 7,454
Maturing between one and two years	—	2,170
Total marketable securities	\$ —	\$ 9,624

Note 5 - Fair Value of Financial Instruments

(In thousands)	Fair value measurements as of March 30, 2019				Fair value measurements as of December 29, 2018			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Short-term marketable securities	\$ —	\$ —	\$ —	\$ —	\$ 9,624	\$ 9,624	\$ —	\$ —
Foreign currency forward exchange contracts, net	84	—	84	—	53	—	53	—
Total fair value of financial instruments	\$ 84	\$ —	\$ 84	\$ —	\$ 9,677	\$ 9,624	\$ 53	\$ —

In the periods presented, we were invested in U.S. Government agency obligations, which we liquidated during the first quarter of fiscal 2019. 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 three months of fiscal 2019 or 2018.

In accordance with ASC 320, "Investments-Debt and Equity Securities," we recorded an unrealized gain of less than \$0.1 million during the three months ended March 30, 2019 and an unrealized loss of less than \$0.1 million during the three months ended March 31, 2018 on certain Short-term marketable securities (Level 1 instruments), which have been recorded in Accumulated other comprehensive loss.

Note 6 - Inventories

(In thousands)	March 30, 2019	December 29, 2018
Work in progress	\$ 49,096	\$ 47,224
Finished goods	17,677	19,872
Total inventories	\$ 66,773	\$ 67,096

Note 7 - Leases

We adopted ASC 842, "Leases," effective on December 30, 2018, the first day of our 2019 fiscal year, using the modified retrospective transition method. The new standard requires lessees to record assets and liabilities on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the statement of operations.

We evaluated the transition and presentation approaches available 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 utilized a comprehensive approach to review our lease portfolio, as well as assessed system requirements and control implications. We elected the "package of practical expedients" that would allow us to carryforward our historical lease classifications, not reassess historical contracts to determine if they contain leases, and not reassess the initial direct costs for any existing leases. We also elected the practical expedient to not separate lease and non-lease components.

Our leases are recognized in our Consolidated Balance Sheets as Operating lease right-of-use assets, and as lease liabilities, with the current portion presented in Current portion of operating lease liabilities and with the long-term portion presented in Long-term operating lease liabilities, net of current portion.

Right-of-use ("ROU") assets represent our right to use an underlying asset for the lease term, and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized on the commencement date of the lease based on the present value of lease payments over the lease term. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on the information available on the commencement date in determining the present value of lease payments.

At inception, we determine if an arrangement is a lease, if it includes options to extend or terminate the lease, and if it is reasonably certain that we will exercise the options. Lease cost, representing lease payments over the term of the lease and any capitalizable direct costs less any incentives received, is recognized on a straight-line basis over the lease term as lease expense. Lattice has operating leases for corporate offices, sales offices, research and development facilities, storage facilities, and a data center. Our leases have remaining lease terms of 1 year to 8 years, some of which include options to extend the leases for up to 5 years, and some of which include options to terminate the leases within 1 year. The exercise of lease renewal options is at our sole discretion. When deemed reasonably certain of exercise, the renewal options are included in the determination of the lease term and lease payment obligation, respectively. For our leases that contain variable lease payments, residual value guarantees, or restrictive covenants, we have concluded that these inputs are not significant to the determination of the ROU asset and lease liability. We have no finance leases as of March 30, 2019.

Our adoption of the standard resulted in the non-cash recognition of additional net ROU assets and lease liabilities of approximately \$29.9 million and \$32.3 million, respectively, as of December 30, 2018. The difference between these amounts resulted from an adjustment to the deferred rent balance existing under the prior guidance. Adoption of this standard did not materially affect our consolidated net earnings.

All of our facilities are leased under operating leases, which expire at various times through 2027. For the first quarter of fiscal 2019, we recorded the following for lease expense and cash paid for lease liabilities:

<i>(In thousands)</i>	Three Months Ended March 30, 2019
Fixed operating lease expense	\$ 1,995
Variable operating lease expense	—
Total operating lease expense	<u>\$ 1,995</u>

The following table presents the lease balance classifications within the Consolidated Balance Sheets and summarizes their activity during the first three months of fiscal 2019:

Operating lease right-of-use assets	<i>(in thousands)</i>
Balance as of December 29, 2018	—
Right-of-use assets recorded from adoption of ASC 842	29,893
Right-of-use assets obtained in exchange for new lease obligations during the period	219
Amortization of right-of-use asset during the period	(1,487)
Impairment of right-of-use asset on Portland, Oregon office (recorded in Restructuring charges)	(757)
Balance as of March 30, 2019	<u>27,868</u>

Operating lease liabilities	<i>(in thousands)</i>
Balance as of December 29, 2018	—
Lease liabilities recorded from adoption of ASC 842	32,273
Lease liabilities incurred for new lease obligations during the period	219
Accretion of lease liabilities	508
Operating cash used by payments on lease liabilities	(2,597)
Balance as of March 30, 2019	<u>30,403</u>
Less: Current portion of operating lease liabilities	(5,027)
Long-term operating lease liabilities, net of current portion	<u>25,376</u>

For our operating leases, the weighted-average remaining lease term is 6.5 years and the weighted-average discount rate is 7.0% as of March 30, 2019.

Maturities of operating lease liabilities as of March 30, 2019 are as follows:

Fiscal year	<i>(in thousands)</i>	
2019 (remaining 9 months)	\$	4,974
2020		7,053
2021		5,288
2022		4,436
2023		4,563
Thereafter		11,369
Total lease payments		37,683
Less: amount representing interest		(7,280)
Total lease liabilities	\$	30,403

Future minimum lease commitments at December 29, 2018, under the previous lease guidance (ASC 840), were as follows:

Fiscal year	<i>(in thousands)</i>	
2019	\$	7,090
2020		6,893
2021		5,452
2022		4,658
2023		4,229
Thereafter		9,930
	\$	38,252

Prior to 2019, the reporting of future minimum lease commitments included the lease obligations associated with previously restructured facilities. After adoption of Topic 842 for the first quarter of 2019, the lease obligations for previously restructured facilities were \$8.1 million and continued to be recorded in Other long-term liabilities on our Consolidated Balance Sheets. The difference between the future minimum lease payments reported at December 29, 2018 and the total maturity of operating lease liabilities as of March 30, 2019 is primarily due to new leases executed in the first quarter of fiscal 2019 and to the reasonable certainty of extending the lease of an existing facility. Rental expense under operating leases was \$8.3 million for fiscal 2018 and \$8.9 million for fiscal 2017.

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." We are amortizing the intangible assets using the straight-line method over their estimated useful lives.

We monitor the carrying value of our intangible assets for potential impairment and test the recoverability of such assets annually during the fourth quarter and whenever triggering events or changes in circumstances indicate that their carrying amounts may not be recoverable. No impairment charges relating to intangible assets were recorded for the first three months of either fiscal 2019 or fiscal 2018 as no indicators of impairment were present.

On our Consolidated Balance Sheets at March 30, 2019 and December 29, 2018, Intangible assets, net are shown net of accumulated amortization of \$117.2 million and \$114.5 million, respectively.

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

<i>(In thousands)</i>	Three Months Ended	
	March 30, 2019	March 31, 2018
Research and development	\$ 14	\$ 127
Amortization of acquired intangible assets	3,389	5,636
	\$ 3,403	\$ 5,763

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 accounted for our investment in this company under the cost method.

In the fourth quarter of fiscal 2018, we restructured our relationship such that we now own only preferred shares and the prior agreements were canceled, thereby eliminating the variable interest in the investee. We assess this investment for impairment on a quarterly basis. Prior to the fourth quarter of fiscal 2018, we assessed this investment for impairment by applying a fair value analysis using a revenue multiple approach. After the variable interest in the investee was eliminated, the investment was assessed for indicators of impairment utilizing the qualitative approach as prescribed by ASC 321-10-35, "Impairment of Equity Securities without Readily Determinable Fair Values." A decline in value that is judged to be other-than temporary is reported in Other income, net in the accompanying Consolidated Statements of Operations with a commensurate decrease in the carrying value of the investment. Under these approaches, we have concluded that no impairment adjustment was necessary in the first quarter of either fiscal 2019 or fiscal 2018. Through March 30, 2019, 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.

Note 10 - Accounts Payable and Accrued Expenses

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

<i>(In thousands)</i>	March 30, 2019	December 29, 2018
Trade accounts payable	\$ 33,414	\$ 31,880
Liability for non-cancelable contracts	5,681	6,078
Contract liability under ASC 606	3,917	1,614
Restructuring	2,525	4,220
Other accrued expenses	5,252	7,971
Total accounts payable and accrued expenses	<u>\$ 50,789</u>	<u>\$ 51,763</u>

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

The following summarizes the changes in total equity for the three month period ended March 30, 2019:

	Common Stock (\$0.01 par value)		Additional Paid-in capital	Accumulated deficit	Accumulated other comprehensive loss	Total
	Shares	Amount				
<i>(In thousands, except par value data)</i>						
Balances, December 29, 2018	129,728	\$ 1,297	\$ 736,274	\$ (476,783)	\$ (2,331)	\$ 258,457
Net income for the three months ended March 30, 2019	—	—	—	7,408	—	7,408
Unrealized gain related to marketable securities, net of tax	—	—	—	—	42	42
Recognized gain on redemption of marketable securities, previously unrealized	—	—	—	—	(53)	(53)
Translation adjustments, net of tax	—	—	—	—	47	47
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of tax	2,177	22	11,546	—	—	11,568
Stock-based compensation related to stock options, ESPP and RSUs	—	—	3,686	—	—	3,686
Balances, March 30, 2019	131,905	\$ 1,319	\$ 751,506	\$ (469,375)	\$ (2,295)	\$ 281,155

The following summarizes the changes in total equity for the three month period ended March 31, 2018:

	Common Stock (\$0.01 par value)		Additional Paid-in capital	Accumulated deficit	Accumulated other comprehensive loss	Total
	Shares	Amount				
<i>(In thousands, except par value data)</i>						
Balances, December 30, 2017	123,895	\$ 1,239	\$ 695,768	\$ (477,862)	\$ (1,452)	\$ 217,693
Net income for the three months ended March 31, 2018	—	—	—	(5,952)	—	(5,952)
Unrealized loss related to marketable securities, net of tax	—	—	—	—	(7)	(7)
Recognized gain on redemption of marketable securities, previously unrealized	—	—	—	—	(1)	(1)
Translation adjustments, net of tax	—	—	—	—	589	589
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of tax	416	4	1,145	—	—	1,149
Stock-based compensation related to stock options, ESPP and RSUs	—	—	4,800	—	—	4,800
Accounting method transition adjustment (1)	—	—	—	27,401	—	27,401
Balances, March 31, 2018	124,311	\$ 1,243	\$ 701,713	\$ (456,413)	\$ (871)	\$ 245,672

(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

We are subject to federal and state income tax as well as income tax in the various foreign jurisdictions in which we operate. For the three months ended March 30, 2019, we recorded an income tax expense of approximately \$0.2 million, and for the three months ended March 31, 2018, we recorded an income tax expense of approximately \$0.6 million. Income taxes for the three month periods ended March 30, 2019 and March 31, 2018 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 months ended March 30, 2019 results from foreign income and withholding taxes offset with release of uncertain tax positions due to lapsing of the statute of limitations.

Through March 30, 2019, 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. In making this evaluation, we exercised significant judgment and considered estimates about our ability to generate revenue and gross profits sufficient to offset expenditures in future periods within the United States. We will continue to evaluate both positive and negative evidence in future periods to determine if we should recognize more deferred tax assets. We do not 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 believe that the years that our tax returns remain subject to examination by taxing authorities are 2015 for federal income taxes, 2014 for state income taxes, and 2012 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 the Philippines for fiscal years 2016 and 2017.

At March 30, 2019, it is reasonably possible that \$1.2 million of unrecognized tax benefits and \$0.1 million of associated interest and penalties could be recognized during the next twelve months. The \$1.3 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 29, 2018, we had U.S. federal net operating loss ("NOL") carryforwards (pretax) of approximately \$365.3 million that expire at various dates between 2019 and 2037. We had state NOL carryforwards (pretax) of approximately \$147.6 million that expire at various dates from 2019 through 2037. We also had federal and state credit carryforwards of \$51.5 million and \$61.2 million, respectively. Of the total \$61.2 million state credit carryforwards, \$60.2 million do not expire. The remaining credits expire at various dates from 2019 through 2037.

Our liability for uncertain tax positions (including penalties and interest) was \$25.9 million and \$26.3 million at March 30, 2019 and December 29, 2018, 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 \$24.9 million is netted against deferred tax assets.

The Tax Cuts and Jobs Act, enacted December 22, 2017, required a deemed repatriation of deferred foreign earnings as of December 30, 2017 and, as a result, no future U.S. taxes should be due on these earnings because of enactment of a 100% dividends received deduction. We had no impact from this transition tax due to utilization of NOL carryforwards. Foreign earnings may be subject to withholding taxes in local jurisdictions if they are distributed and repatriated in the United States.

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 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.

Note 13 - Restructuring

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 the transfer of certain assets related to our Simplay Labs testing and certification business, a worldwide workforce reduction, and an initiative to reduce our infrastructure costs, including reconfiguring our use of certain leased properties. Under this initiative approved by the Board in 2017, we vacated 100% of our facility in Portland, Oregon in the first quarter of fiscal 2019, and recorded approximately \$1.3 million of Restructuring charges from ceasing use of this space, which includes approximately \$0.8 million of impairment of the operating lease right-of-use asset for this property. 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 \$1.3 million and \$1.0 million of expense was incurred during the three months ended March 30, 2019 and March 31, 2018, respectively. Approximately \$17.7 million of total expense has been incurred through March 30, 2019 under the June 2017 Plan. We expect the total cost of the June 2017 Plan to be approximately \$21.5 million to \$23.0 million and that it will be substantially completed by the end of fiscal 2019.

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) and in Other long-term liabilities on our Consolidated Balance Sheets. The following table displays the activity related to our restructuring plans:

<i>(In thousands)</i>	Severance & Related (1)	Lease Termination & Fixed Assets	Software Contracts & Engineering Tools (2)	Other	Total
Balance at December 30, 2017	\$ 1,192	\$ 870	\$ 360	\$ 25	\$ 2,447
Restructuring charges	241	13	738	37	1,029
Costs paid or otherwise settled	(908)	(85)	(700)	(31)	(1,724)
Balance at March 31, 2018	<u>\$ 525</u>	<u>\$ 798</u>	<u>\$ 398</u>	<u>\$ 31</u>	<u>\$ 1,752</u>
Balance at December 29, 2018	\$ 1,814	\$ 8,630	\$ 218	\$ 18	\$ 10,680
Restructuring charges	(60)	1,409	—	(8)	1,341
Costs paid or otherwise settled	(1,540)	(1,875)	(83)	(10)	(3,508)
Balance at March 30, 2019	<u>\$ 214</u>	<u>\$ 8,164</u>	<u>\$ 135</u>	<u>\$ —</u>	<u>\$ 8,513</u>

(1) Includes employee relocation costs and accelerated stock compensation

(2) Includes cancellation of contracts, asset impairments, and accelerated depreciation on certain enterprise resource planning and customer relationship management systems

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, Inc. 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 7.42%.

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. As of March 30, 2019, the Credit Agreement would require a 75% excess cash flow payment.

In the first quarter of fiscal 2019, we made a total of \$26.9 million in payments on the Term Loan, including \$25.0 million in voluntary principal payments, a \$1.0 million mandatory payment from the proceeds of an asset sale in the fourth quarter of fiscal 2018, and a required quarterly installment payment of \$0.9 million. As of March 30, 2019, we had approximately \$236.2 million outstanding under the Credit Agreement.

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 March 30, 2019.

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:

<i>(In thousands)</i>	March 30, 2019	December 29, 2018
Principal amount	\$ 236,158	\$ 263,033
Unamortized original issue discount and debt costs	(2,700)	(3,386)
Less: Current portion of long-term debt	(7,796)	(8,290)
Long-term debt, net of current portion	<u>\$ 225,662</u>	<u>\$ 251,357</u>

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

<i>(In thousands)</i>	Three Months Ended	
	March 30, 2019	March 31, 2018
Contractual interest	\$ 4,316	\$ 4,528
Amortization of debt issuance costs and discount	687	507
Total interest expense related to the Term Loan	<u>\$ 5,003</u>	<u>\$ 5,035</u>

As of March 30, 2019, expected future principal payments on the Term Loan were as follows:

Fiscal year	<i>(in thousands)</i>
2019	9,388
2020	59,291
2021	167,479
	<u>\$ 236,158</u>

Note 15 - Stock-Based Compensation

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

<i>(In thousands)</i>	Three Months Ended	
	March 30, 2019	March 31, 2018
Cost of products sold	\$ 202	\$ 237
Research and development	1,125	1,207
Selling, general, and administrative	2,359	3,356
Total stock-based compensation	<u>\$ 3,686</u>	<u>\$ 4,800</u>

Market-Based and Performance-Based Stock Compensation

In fiscal years 2018 and 2019, we granted RSUs with a market condition to certain executives. The market condition is a comparison of the Company's relative Total Shareholder Return ("TSR") when compared to the TSR of a component of companies of the PHLX Semiconductor Sector Index over a measurement period. TSR is a measure of stock price appreciation plus dividends paid, if any, in the performance period. We determined and fixed the fair value of the awards with a market condition on the date of grant using a lattice-based option-pricing model. The valuation of these awards incorporated a Monte-Carlo simulation, and considered 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 2013 Incentive Plan to our incoming President and Chief Executive Officer. These awards included restricted stock units 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, 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. We valued the RSUs with a performance condition using the market price on the day of grant.

In September 2018, we granted inducement awards outside of, but subject to the terms and conditions of the 2013 Incentive Plan to our incoming Corporate Vice President of Research and Development, and in September 2018 and January 2019, we granted awards from the 2013 Incentive Plan to certain executives. These awards included restricted stock units 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, 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.

We recognize expense related to these stock option and RSU awards with a market or performance condition based on our estimate of the probability of the respective conditions being achieved. For these awards, we incurred stock compensation expense of approximately \$0.9 million in the first quarter of fiscal 2019 and of approximately \$0.3 million in the first quarter of fiscal 2018, which is recorded as a component of total stock-based compensation expense.

The following table summarizes the activity for our stock options and RSUs with a market or performance condition during the first three months of fiscal 2019:

(Shares in thousands)

	Unvested	Vested	Total
Balance, December 29, 2018	909	—	909
Granted	265	—	265
Canceled	(98)	—	(98)
Balance, March 30, 2019	<u>1,076</u>	<u>—</u>	<u>1,076</u>

Note 16 - Contingencies

Legal Matters

On or about December 19, 2018, Steven A.W. De Jaray, Perienne De Jaray and Darrell R. Oswald (collectively, the "Plaintiffs") commenced an action against the Company and several unnamed defendants in the Multnomah County Circuit Court of the State of Oregon, in connection with the sale of certain products by the Company to the Plaintiffs in or around 2008. The Plaintiffs allege that the Company violated The Lanham Act, engaged in negligence and fraud by failing to disclose to the Plaintiffs the export-controlled status of the subject parts. The Plaintiffs seek damages of \$138 million, treble damages, and other remedies. In January 2019, the Company removed the action to the United States District Court for the District of Oregon. At this stage of the proceedings, the Company does not have an estimate of the likelihood or the amount of any potential exposure to the Company; however, the Company believes that these claims are without merit and intends to vigorously defend the action.

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.

Note 17 - Segment and Geographic Information

Segment Information

In the three-month periods ended March 30, 2019 and March 31, 2018, respectively, Lattice had one operating segment: the core Lattice business, which includes semiconductor devices, evaluation boards, development hardware, and related intellectual property licensing, services, 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:

<i>(In thousands)</i>	March 30, 2019		December 29, 2018	
United States	\$ 29,965	82%	\$ 27,353	78%
China	2,088	6	2,360	7
Philippines	3,142	8	3,319	9
Taiwan	802	2	949	3
Japan	280	1	324	1
Other	481	1	578	2
Total foreign property and equipment, net	6,793	18	7,530	22
Total property and equipment, net	<u>\$ 36,758</u>	<u>100%</u>	<u>\$ 34,883</u>	<u>100%</u>

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") is a Delaware corporation that develops semiconductor technologies that we monetize through products, solutions, design services, and licenses. We engage in smart connectivity, control, and compute solutions, providing intellectual property ("IP") and low-power, small form-factor programmable logic 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 and services. Lattice was founded in 1983 and is headquartered in Hillsboro, Oregon.

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 that 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 accounting for leases (further discussed in "Note 7 - Leases" 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 29, 2018.

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 and contract liabilities, inventory, depreciable lives of fixed assets, lease right-of-use assets and lease liabilities, 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, 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			
	March 30, 2019		March 31, 2018	
<i>(In thousands)</i>				
Revenue	\$ 98,091	100.0%	\$ 98,623	100.0 %
Gross margin	57,652	58.8	56,521	57.3
Research and development	19,665	20.0	22,941	23.3
Selling, general and, administrative	20,781	21.2	27,043	27.4
Amortization of acquired intangible assets	3,389	3.5	5,636	5.7
Restructuring charges	1,341	1.4	1,029	1.0
Acquisition related charges	—	—	667	0.7
Income (loss) from operations	\$ 12,476	12.7%	\$ (795)	(0.8)%

We adopted ASC 606, "Revenue from Contracts with Customers," on December 31, 2017, the first day of our 2018 fiscal year, using the modified retrospective method. See "Note 2 - Revenue from Contracts with Customers" to our consolidated financial statements for further discussion of our recognition of revenue.

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.

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 for the periods presented:

<u>Communications and Computing</u>	<u>Mobile and Consumer</u>	<u>Industrial and Automotive</u>	<u>Licensing and Services</u>
Wireless	Mobile phones	Security and Surveillance	IP Royalties
Wireline	Cameras	Machine Vision	Adopter Fees
Data Backhaul	Displays	Industrial Automation	IP Licenses
Client Computing	Wearables	Robotics	Patent Sales
Data Center Computing	Televisions	Automotive	
Data Storage	Home Theater	Drones	

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

	Three Months Ended			
	March 30, 2019		March 31, 2018	
<i>(In thousands)</i>				
Communications and Computing	\$ 35,553	36%	\$ 28,139	28%
Mobile and Consumer	19,746	20	26,706	27
Industrial and Automotive	36,313	37	40,264	41
Licensing and Services	6,479	7	3,514	4
Total revenue	\$ 98,091	100%	\$ 98,623	100%

Revenue from the Communications and Computing end market increased by 26% for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 due to demand increases for server and client computing products, as well as for products used in 5G wireless infrastructure.

Revenue from the Mobile and Consumer end market decreased by 26% for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 due to decreased demand for mobile phone related products.

Revenue from the Industrial and Automotive end market decreased by 10% for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 due to broad market decreases in the Industrial end market.

Revenue from the Licensing and Services end market increased by 84% for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 due primarily to increased HDMI royalty revenue.

We share HDMI royalties with the other HDMI Founders based on an allocation formula, which is reviewed periodically, 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.

HDMI royalties are considered variable consideration under the current 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 years 2018 and 2019, we are estimating our share of royalty revenues under an anticipated new agreement.

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			
	March 30, 2019		March 31, 2018	
<i>(In thousands)</i>				
Asia	\$ 69,011	70%	\$ 71,921	73%
Europe	12,210	12	12,142	12
Americas	16,870	18	14,560	15
Total revenue	\$ 98,091	100%	\$ 98,623	100%

Revenue in Asia decreased 4% for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018. Asia revenue is heavily affected by revenue from all of the end markets we serve. The decrease in the first quarter of fiscal 2019 was predominately due to broad market weakness, partially offset by growth in the Communications and Computing end market.

Revenue in Europe increased 1% for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 due to small broad market growth primarily in the Industrial and Automotive end market.

Revenue from the Americas increased 16% for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018, primarily due to strength in the Computing end market, especially in data centers, and to increased royalty revenue.

Revenue from End Customers

No end customer accounted for more than 10% of total revenue during the periods presented in this report. Our top five end customers constituted approximately 24% of our revenue for the first quarter of fiscal 2019, compared to approximately 16% for the first quarter of fiscal 2018.

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	
	March 30, 2019	March 31, 2018
Arrow Electronics Inc.	22%	30%
Weikeng Group	29	26
All others	28	31
All distributors	79%	87%

Revenue attributable to distributors was higher in the first quarter of fiscal 2018 primarily due to the revenue recognized on the increase in inventory held by distributors after the adoption of ASC 606, which did not recur in the first quarter of fiscal 2019.

Gross Margin

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

	Three Months Ended	
	March 30, 2019	March 31, 2018
<i>(In thousands)</i>		
Gross margin	\$ 57,652	\$ 56,521
Percentage of net revenue	58.8%	57.3%
Product gross margin %	55.9%	55.7%
Licensing and services gross margin %	100.0%	100.0%

For the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018, gross margin as a percentage of net revenue increased by 1.5 percentage points. The overall gross margin was influenced by the relative mix between product revenue and licensing and services revenue, and this increase resulted primarily from a greater proportion of high margin licensing and services revenue in the first quarter of fiscal 2019. Licensing and services accounted for approximately 7% of total revenue in the first quarter of fiscal 2019 compared to approximately 4% in the first quarter of fiscal 2018.

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		% change
	March 30, 2019	March 31, 2018	
<i>(In thousands)</i>			
Research and development	\$ 19,665	\$ 22,941	(14)
Percentage of revenue	20.0%	23.3%	

Research and development expense includes costs for compensation and benefits, stock compensation, 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.

We incur costs for the fabrication of masks used by our foundry partners to manufacture our products. Beginning the first quarter of fiscal 2019, we capitalize mask costs that are expected to be utilized in production manufacturing as our product development process has become more predictable and thus supports capitalization of the mask. The capitalized mask costs begin depreciating to Cost of product revenue once the products go into production. Depreciation is straight-lined over a three year period, which is the expected useful life of the mask. Previously mask sets were expensed to Research and development.

The decrease in Research and development expense for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 is due mainly to the cost reductions realized from restructuring actions and from the sale of assets and discontinuation of a business unit. These savings were predominantly from headcount related expenses, including lower stock compensation expense, and from reductions in both depreciation and rent expense.

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 in our business.

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:

<i>(In thousands)</i>	Three Months Ended		% change
	March 30, 2019	March 31, 2018	
Selling, general, and administrative	\$ 20,781	\$ 27,043	(23)
Percentage of revenue	21.2%	27.4%	

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 decrease in Selling, general, and administrative expense for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 is due mainly to the non-recurrence of certain one-time costs from our CEO retirement and transition in the prior year, including accelerated stock compensation, severance expense, and CEO search fees. Additional savings in the current year period resulted from previous restructuring actions, and from lower commissions and legal expenses.

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:

<i>(In thousands)</i>	Three Months Ended		% change
	March 30, 2019	March 31, 2018	
Amortization of acquired intangible assets	\$ 3,389	\$ 5,636	(40)
Percentage of revenue	3.5%	5.7%	

The decrease in Amortization of acquired intangible assets for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 is due to the end of the amortization period for certain intangibles and to the reduction of certain intangibles as a result of 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:

<i>(In thousands)</i>	Three Months Ended		% change
	March 30, 2019	March 31, 2018	
Restructuring charges	\$ 1,341	\$ 1,029	30
Percentage of revenue	1.4%	1.0%	

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 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 the transfer of certain assets related to our Simplay Labs testing and certification business, a worldwide workforce reduction, and an initiative to reduce our infrastructure costs, including reconfiguring our use of certain leased properties. Under this initiative approved by the Board in 2017, we vacated 100% of our facility in Portland, Oregon in the first quarter of fiscal 2019, and recorded approximately \$1.3 million of Restructuring charges from ceasing use of this space, which includes approximately \$0.8 million of impairment of the operating lease right-of-use asset for this property. 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 \$1.3 million and \$1.0 million of expense was incurred during the three months ended March 30, 2019 and March 31, 2018, respectively. Approximately \$17.7 million of total expense has been incurred through March 30, 2019 under the June 2017 Plan. We expect the total cost of the June 2017 Plan to be approximately \$21.5 million to \$23.0 million and that it will be substantially completed by the end of fiscal 2019.

The \$0.3 million increase in restructuring expense in the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 was driven by abandoned lease restructuring charges in the current year versus headcount-related, lease and software license restructuring charges in the prior year.

Acquisition Related Charges

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

<i>(In thousands)</i>	Three Months Ended		% change
	March 30, 2019	March 31, 2018	
Acquisition related charges	\$ —	\$ 667	(100)
Percentage of revenue	—%	0.7%	

Acquisition related charges include legal and professional fees directly related to acquisitions.

For the first quarter of fiscal 2018, 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 costs related to this matter.

Interest expense

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

<i>(In thousands)</i>	Three Months Ended		% change
	March 30, 2019	March 31, 2018	
Interest expense	\$ (4,987)	\$ (5,114)	(2)
Percentage of revenue	(5.1)%	(5.2)%	

Interest expense is primarily related to our debt acquired to partially fund the Silicon Image, Inc. acquisition, which is further discussed under the Credit Arrangements heading in the Liquidity and Capital Resources section, below. This interest expense is comprised of contractual interest and amortization of original issue discount and debt issuance costs based on the effective interest method.

The decrease in Interest expense for the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 was largely driven by the reduction in the principal balance of our long-term debt as a result of the additional principal payments made in the current and previous periods, partially offset by the increase in the effective interest rate on our long-term debt.

Other income, net

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

<i>(In thousands)</i>	Three Months Ended		% change
	March 30, 2019	March 31, 2018	
Other income, net	\$ 153	\$ 554	(72)
Percentage of revenue	0.2%	0.6%	

For the first quarter of fiscal 2019 compared to the first quarter of fiscal 2018 the decrease in Other income, net is driven primarily by gains on our foreign currency forward exchange contracts in the current year versus losses in the prior year.

Income Taxes

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

<i>(In thousands)</i>	Three Months Ended		% change
	March 30, 2019	March 31, 2018	
Income tax expense	\$ 234	\$ 597	(61)

Our Income tax expense for the first quarters of fiscal 2019 and fiscal 2018 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 decrease in expense in the first quarter of fiscal 2019 as compared to the first quarter of fiscal 2018 is primarily due to decreased 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.

The Tax Cuts and Jobs Act, enacted December 22, 2017, contains provisions that affect Lattice. The limitation on net interest expense may limit current deductibility of some of the interest on our debt, although this deduction may be carried forward for utilization in future years. The Global Intangible Low-Taxed Income ("GILTI") may result in additional U.S. taxable income due to non-U.S. sourced income. To the extent we are required to recognize additional taxable income under these provisions, we have approximately \$365 million in net operating loss carry forwards as of December 29, 2018 available for offset. Adoption of the territorial system concept will facilitate our ability to repatriate future foreign earnings without incurring additional U.S. tax. The new Base Erosion Anti-Abuse Tax ("BEAT"), which effectively requires U.S. companies with related non-U.S. persons to pay a minimum amount of U.S. tax, does not apply to us currently as we are below the \$500 million revenue threshold.

Liquidity and Capital Resources

The following sections discuss material changes in our financial condition from the end of fiscal 2018, 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 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 March 30, 2019, 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 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

<i>(In thousands)</i>	March 30, 2019	December 29, 2018	\$ Change
Cash and cash equivalents	\$ 130,391	\$ 119,051	\$ 11,340
Short-term marketable securities	—	9,624	(9,624)
Total Cash and cash equivalents and Short-term marketable securities	\$ 130,391	\$ 128,675	\$ 1,716

As of March 30, 2019, we had total Cash, cash equivalents, and short-term marketable securities of \$130.4 million, of which approximately \$93.0 million in Cash and cash equivalents was held by our foreign subsidiaries. During the first quarter of fiscal 2019, we liquidated our Short-term marketable securities. 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-US earnings may require us to withhold and pay foreign income tax on the dividends. This should not result in significant additional tax expense as we have accrued expense based on current withholding rates. As of March 30, 2019, 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 \$1.7 million between December 29, 2018 and March 30, 2019 was primarily driven by \$21.8 million in cash provided by operations, and \$11.6 million in 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 \$26.9 million in cash used in the repayment of debt and \$4.8 million of cash used in capital expenditures and payment for software licenses.

Accounts receivable, net

<i>(In thousands)</i>	March 30, 2019	December 29, 2018	Change
Accounts receivable, net	\$ 55,606	\$ 60,890	\$ (5,284)
Days sales outstanding - Overall	52	58	(6)

Accounts receivable, net as of March 30, 2019 decreased by approximately \$5.3 million, or 9%, compared to December 29, 2018. A majority of the decrease resulted from improved timing of collections from major distributors, which also decreased the overall Days sales outstanding to 52 days at March 30, 2019 from 58 days at December 29, 2018.

Inventories

<i>(In thousands)</i>	March 30, 2019	December 29, 2018	Change
Inventories	\$ 66,773	\$ 67,096	\$ (323)
Months of inventory on hand	5.0	4.8	0.2

Inventories as of March 30, 2019 decreased \$0.3 million, or less than 1%, compared to December 29, 2018 primarily due to a decline related to the ramp down of mature and aging products. This inventory decline was offset by builds to support sales for confirmed 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 increased to 5.0 months at March 30, 2019 from 4.8 months at December 29, 2018. This increase resulted from a decrease in the cost of sales between the periods while sales-driven inventory decreases between the same periods were offset by a build-up of inventory to support forecasted sales and new product demand.

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, Inc. 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 7.42%.

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. As of March 30, 2019, the Credit Agreement would require a 75% excess cash flow payment.

In the first quarter of fiscal 2019, we made a total of \$26.9 million in payments on the Term Loan, including \$25.0 million in voluntary principal payments, a \$1.0 million mandatory payment from the proceeds of an asset sale in the fourth quarter of fiscal 2018, and a required quarterly installment payment of \$0.9 million. As of March 30, 2019, we had approximately \$236.2 million outstanding under the Credit Agreement.

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 March 30, 2019.

As of March 30, 2019, 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 three months of fiscal 2019, 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 29, 2018.

Off-Balance Sheet Arrangements

As of March 30, 2019, 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 certain 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 and impairment of acquired intangible assets, inventory adjustments related to restructured operations, 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 provided by U.S. 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. 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 U.S. 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	
	March 30, 2019	March 31, 2018
Gross Margin Reconciliation		
GAAP Gross margin	\$ 57,652	\$ 56,521
Inventory adjustment related to restructured operations	(338)	—
Stock-based compensation expense - gross margin	202	237
Non-GAAP Gross margin	\$ 57,516	\$ 56,758
Gross Margin % Reconciliation		
GAAP Gross margin %	58.8 %	57.3 %
Cumulative effect of non-GAAP Gross Margin adjustments	(0.2)%	0.3 %
Non-GAAP Gross margin %	58.6 %	57.6 %
Operating Expenses Reconciliation		
GAAP Operating expenses	\$ 45,176	\$ 57,316
Amortization of acquired intangible assets	(3,389)	(5,636)
Restructuring charges	(1,341)	(1,029)
Acquisition related charges (1)	—	(667)
Impairment of acquired intangible assets	1,023	—
Stock-based compensation expense - operations	(3,484)	(4,563)
Non-GAAP Operating expenses	\$ 37,985	\$ 45,421

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

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

(In thousands, except per share data)

(unaudited)

	Three Months Ended	
	March 30, 2019	March 31, 2018
Income (Loss) from Operations Reconciliation		
GAAP Income (loss) from operations	\$ 12,476	\$ (795)
Inventory adjustment related to restructured operations	(338)	—
Stock-based compensation expense - gross margin	202	237
Amortization of acquired intangible assets	3,389	5,636
Restructuring charges	1,341	1,029
Acquisition related charges (1)	—	667
Impairment of acquired intangible assets	(1,023)	—
Stock-based compensation expense - operations	3,484	4,563
Non-GAAP Income from operations	\$ 19,531	\$ 11,337
Income (Loss) from Operations % Reconciliation		
GAAP Income (loss) from operations %	12.7 %	(0.8)%
Cumulative effect of non-GAAP Gross Margin and Operating adjustments	7.2 %	12.3 %
Non-GAAP Income from operations %	19.9 %	11.5 %
Income Tax Expense Reconciliation		
GAAP Income tax expense	\$ 234	\$ 597
Estimated tax effect of non-GAAP Adjustments (2)	(98)	62
Non-GAAP Income tax expense	\$ 136	\$ 659
Net Income (Loss) Reconciliation		
GAAP Net income (loss)	\$ 7,408	\$ (5,952)
Inventory adjustment related to restructured operations	(338)	—
Stock-based compensation expense - gross margin	202	237
Amortization of acquired intangible assets	3,389	5,636
Restructuring charges	1,341	1,029
Acquisition related charges (1)	—	667
Impairment of acquired intangible assets	(1,023)	—
Stock-based compensation expense - operations	3,484	4,563
Estimated tax effect of non-GAAP Adjustments (2)	98	(62)
Non-GAAP Net income	\$ 14,561	\$ 6,118

(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 U.S. 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	
	March 30, 2019	March 31, 2018
Net Income (Loss) Per Share Reconciliation		
GAAP Net income (loss) per share - basic	\$ 0.06	\$ (0.05)
Cumulative effect of Non-GAAP adjustments	0.05	0.10
Non-GAAP Net income per share - basic	\$ 0.11	\$ 0.05
GAAP Net income (loss) per share - diluted	\$ 0.05	\$ (0.05)
Cumulative effect of Non-GAAP adjustments	0.06	0.10
Non-GAAP Net income per share - diluted	\$ 0.11	\$ 0.05
Shares used in per share calculations:		
Basic	130,992	124,076
Diluted - GAAP	134,810	124,076
Diluted - non-GAAP (3)	134,810	125,144

(3) Diluted shares are calculated using the U.S. 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:

	March 30, 2019	December 29, 2018
Total cost of contracts for Japanese yen (<i>in thousands</i>)	\$ 2,883	\$ 1,955
Number of contracts	3	2
Settlement month	June 2019	June 2019

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 income, net in our Consolidated Statements of Operations. 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 March 30, 2019 and December 29, 2018. A hypothetical 10% unfavorable exchange rate change in the yen against the U.S. dollar would have resulted in unfavorable changes in net fair value of approximately \$0.2 million at both March 30, 2019 and December 29, 2018. 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 March 30, 2019, we had a \$236.2 million principal outstanding balance 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 March 30, 2019, 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 \$0.6 million per quarter.

ITEM 4. CONTROLS AND PROCEDURES

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

In connection with the filing of this Form 10-Q, our management, including our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of the end of the period covered by this report. These disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms. Our disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that we accumulate and communicate correct information to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls were effective as of the end of the period covered by this report.

Changes in Internal Control over Financial Reporting

During the first quarter of fiscal 2019, we added specific internal control procedures to enable the preparation of financial information for the implementation of ASC 842, "Leases." Other than this item, 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 first quarter of fiscal 2019 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 risk factors associated with our business were previously described in Part I, Item 1A, "Risk Factors," in our Annual Report on Form 10-K for the fiscal year ended December 29, 2018 filed with the SEC on February 26, 2019. If any of these risks occur, our business, financial condition, operating results, and cash flows could be materially adversely affected. These risk factors are not the only risks facing our company. Additional risks and uncertainties not presently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition, and operating results. The Risk Factors section of our 2018 Annual Report on Form 10-K remains current in all material respects. These factors, together with all of the other information in this Quarterly Report on Form 10-Q, including our unaudited condensed consolidated financial statements and related notes included elsewhere in this Quarterly Report on Form 10-Q, should be carefully considered before making an investment decision relating to our common stock.

ITEM 6. EXHIBITS

Exhibit Number	Description
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/ Sherri Luther

Sherri Luther

Chief Financial Officer

(Duly Authorized Officer and Principal Financial and Accounting Officer)

Date: May 3, 2019

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: May 3, 2019

/s/ James Anderson

James Anderson

Chief Executive Officer

CERTIFICATION

I, Sherri Luther, 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: May 3, 2019

/s/ Sherri Luther

Sherri Luther

Chief Financial Officer

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 March 30, 2019 (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: May 3, 2019

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 March 30, 2019 (the Report), I, Sherri Luther, 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/ Sherri Luther

Sherri Luther

Chief Financial Officer

Date: May 3, 2019