
UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 28, 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
(State or other jurisdiction of incorporation or organization)

93-0835214
(I.R.S. Employer Identification No.)

5555 NE Moore Court, Hillsboro, OR
(Address of principal executive offices)

97124
(Zip Code)

(503) 268-8000
(Registrant's telephone number, including area code)

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

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

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

Indicate by check mark whether the registrant 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

Number of shares of common stock outstanding as of October 29, 2019

133,557,952

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

This Quarterly Report on Form 10-Q contains forward-looking statements that 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 “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “plan,” “possible,” “predict,” “project,” “may,” “will,” “should,” “continue,” “ongoing,” “future,” “potential,” and similar words or phrases to identify forward-looking statements.

Forward-looking statements include, but are not limited to, statements about: our target or expected financial performance and our ability to achieve those results; future financial results or accounting treatments; our use of cash; our gross margin growth and our strategies to achieve gross margin growth and other financial results; our expectations and strategies regarding market trends and opportunities, including market segment drivers such as 5G infrastructure deployments, cloud and enterprise servers, client computing platforms, industrial Internet of Things, factory automation, automotive electronics, smart homes and prosumers; our judgments involved in accounting matters; our expectations regarding product offerings; our expectations regarding our customer base; our future investments in research and development and our research and development expense efficiency; our anticipated reductions in expenses; our expectations regarding our restructuring plans; our anticipated sharing of HDMI royalty revenues; our expectations regarding taxes, including unrecognized tax benefits, and tax adjustments and allowances; our beliefs regarding the adequacy of our liquidity, capital resources and facilities; and our beliefs regarding legal proceedings.

These forward-looking statements are based on estimates and assumptions that are subject to risks and uncertainties that could cause actual results to differ materially from those statements 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 include those more fully described herein or 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 and any additional or updated risk factors discussed in any subsequent Quarterly Report on Form 10-Q filed since that date.

You should not unduly rely on forward-looking statements because our actual results could differ materially from those expressed by us. In addition, any forward-looking statement applies only as of the date of this filing. We do not plan to, and undertake no obligation to, update any forward-looking statements to reflect new information or new events, circumstances or developments, or otherwise.

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

LATTICE SEMICONDUCTOR CORPORATION CONSOLIDATED STATEMENTS OF OPERATIONS (unaudited)

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
<i>(In thousands, except per share data)</i>				
Revenue:				
Product	\$ 97,477	\$ 97,932	\$ 287,185	\$ 291,335
Licensing and services	5,992	3,552	16,671	11,487
Total revenue	103,469	101,484	303,856	302,822
Cost of revenue:				
Cost of product revenue	42,030	43,120	124,727	137,430
Cost of licensing and services revenue	—	—	—	259
Total cost of revenue	42,030	43,120	124,727	137,689
Gross margin	61,439	58,364	179,129	165,133
Operating expenses:				
Research and development	20,032	19,131	59,074	63,153
Selling, general, and administrative	21,078	21,775	61,618	69,886
Amortization of acquired intangible assets	3,389	3,823	10,168	13,982
Restructuring charges	252	90	4,719	5,495
Impairment of acquired intangible assets	—	586	—	12,486
Acquisition related charges	—	—	—	1,531
Total operating expenses	44,751	45,405	135,579	166,533
Income (loss) from operations	16,688	12,959	43,550	(1,400)
Interest expense	(2,022)	(5,500)	(10,547)	(15,582)
Other expense, net	(61)	(452)	(2,017)	(246)
Income (loss) before income taxes	14,605	7,007	30,986	(17,228)
Income tax expense	1,066	33	1,480	1,973
Net income (loss)	\$ 13,539	\$ 6,974	\$ 29,506	\$ (19,201)
Net income (loss) per share:				
Basic	\$ 0.10	\$ 0.05	\$ 0.22	\$ (0.15)
Diluted	\$ 0.10	\$ 0.05	\$ 0.21	\$ (0.15)
Shares used in per share calculations:				
Basic	132,997	127,816	132,065	125,578
Diluted	138,894	129,474	137,679	125,578

See Accompanying Notes to Unaudited Consolidated Financial Statements.

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

<i>(In thousands)</i>	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Net income (loss)	\$ 13,539	\$ 6,974	\$ 29,506	\$ (19,201)
Other comprehensive income (loss):				
Unrealized gain related to marketable securities, net of tax	—	14	42	16
Reclassification adjustment for gains related to marketable securities included in Other (expense) income, net of tax	—	(17)	(53)	(18)
Translation adjustment, net of tax	(93)	(584)	(7)	(1,124)
Comprehensive income (loss)	<u>\$ 13,446</u>	<u>\$ 6,387</u>	<u>\$ 29,488</u>	<u>\$ (20,327)</u>

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION CONSOLIDATED BALANCE SHEETS

<i>(In thousands, except share and par value data)</i>	September 28, 2019 (unaudited)	December 29, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 97,413	\$ 119,051
Short-term marketable securities	—	9,624
Accounts receivable, net of allowance for doubtful accounts	47,433	60,890
Inventories	59,672	67,096
Prepaid expenses and other current assets	34,691	27,762
Total current assets	239,209	284,423
Property and equipment, less accumulated depreciation of \$138,343 at September 28, 2019 and \$141,367 at December 29, 2018	40,163	34,883
Operating lease right-of-use assets	24,563	—
Intangible assets, net	10,381	21,325
Goodwill	267,514	267,514
Deferred income taxes	226	215
Other long-term assets	11,349	15,327
Total assets	\$ 593,405	\$ 623,687
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses (includes restructuring)	\$ 48,181	\$ 51,763
Accrued payroll obligations	11,428	9,365
Current portion of long-term debt	17,196	8,290
Current portion of operating lease liabilities	4,623	—
Total current liabilities	81,428	69,418
Long-term debt, net of current portion	139,230	251,357
Long-term operating lease liabilities, net of current portion	22,484	—
Other long-term liabilities	40,618	44,455
Total liabilities	283,760	365,230
Contingencies (Note 11)	—	—
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; 133,502,000 shares issued and outstanding as of September 28, 2019 and 129,728,000 shares issued and outstanding as of December 29, 2018	1,335	1,297
Additional paid-in capital	757,936	736,274
Accumulated deficit	(447,277)	(476,783)
Accumulated other comprehensive loss	(2,349)	(2,331)
Total stockholders' equity	309,645	258,457
Total liabilities and stockholders' equity	\$ 593,405	\$ 623,687

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited)

(In thousands)	Nine Months Ended	
	September 28, 2019	September 29, 2018
Cash flows from operating activities:		
Net income (loss)	\$ 29,506	\$ (19,201)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation and amortization	24,682	30,740
Impairment of acquired intangible assets	—	12,486
Stock-based compensation expense	13,335	9,908
Amortization of operating lease right-of-use assets	4,372	—
Loss on re-financing of long-term debt	2,235	—
Amortization of debt issuance costs and discount	1,539	1,847
Impairment of operating lease right-of-use asset (recorded in Restructuring charges)	977	—
Other non-cash adjustments	(63)	8
Changes in assets and liabilities:		
Accounts receivable, net	13,457	(18,736)
Inventories	7,424	13,892
Prepaid expenses and other assets	(8,741)	(11,729)
Accounts payable and accrued expenses (includes restructuring)	(196)	1,661
Accrued payroll obligations	2,063	(557)
Operating lease liabilities, current and long-term portions	(5,571)	—
Income taxes payable	(202)	309
Deferred licensing and services revenue	—	(68)
Net cash provided by operating activities	84,817	20,560
Cash flows from investing activities:		
Proceeds from sales of and maturities of short-term marketable securities	9,655	5,000
Purchases of marketable securities	—	(9,603)
Capital expenditures	(11,729)	(6,178)
Cash paid for software licenses	(5,745)	(6,144)
Net cash used in investing activities	(7,819)	(16,925)
Cash flows from financing activities:		
Restricted stock unit tax withholdings	(7,813)	(1,600)
Proceeds from issuance of common stock	16,178	28,051
Proceeds from issuance of long-term debt	206,500	—
Original issue discount and debt issuance costs	(2,086)	—
Repayment of debt	(311,408)	(27,884)
Net cash used in financing activities	(98,629)	(1,433)
Effect of exchange rate change on cash	(7)	(1,124)
Net (decrease) increase in cash and cash equivalents	(21,638)	1,078
Beginning cash and cash equivalents	119,051	106,815
Ending cash and cash equivalents	\$ 97,413	\$ 107,893
Supplemental disclosure of cash flow information and non-cash investing and financing activities:		
Interest paid	\$ 9,932	\$ 13,976
Operating lease payments	\$ 6,540	\$ —
Income taxes paid, net of refunds	\$ 1,922	\$ 2,716
Accrued purchases of plant and equipment	\$ 1,841	\$ 332
Operating lease right-of-use assets obtained in exchange for lease obligations	\$ 404	\$ —
Change in unrealized gain related to marketable securities, net of tax, included in Accumulated other comprehensive loss	\$ 42	\$ 16

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(unaudited)

The following summarizes the changes in total equity for the nine month period ended September 28, 2019:

	Common Stock (\$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 nine months ended September 28, 2019	—	—	—	29,506	—	29,506
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	—	—	—	—	(7)	(7)
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of shares withheld for employee taxes	3,774	38	8,327	—	—	8,365
Stock-based compensation related to stock options, ESPP and RSUs	—	—	13,335	—	—	13,335
Balances, September 28, 2019	<u>133,502</u>	<u>\$ 1,335</u>	<u>\$ 757,936</u>	<u>\$ (447,277)</u>	<u>\$ (2,349)</u>	<u>\$ 309,645</u>

The following summarizes the changes in total equity for the nine month period ended September 29, 2018:

	Common Stock (\$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 nine months ended September 29, 2018	—	—	—	(19,201)	—	(19,201)
Unrealized loss related to marketable securities, net of tax	—	—	—	—	16	16
Recognized gain on redemption of marketable securities, previously unrealized	—	—	—	—	(18)	(18)
Translation adjustments, net of tax	—	—	—	—	(1,124)	(1,124)
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of shares withheld for employee taxes	5,380	54	26,397	—	—	26,451
Stock-based compensation related to stock options, ESPP and RSUs	—	—	9,908	—	—	9,908
Accounting method transition adjustment (1)	—	—	—	27,401	—	27,401
Balances, September 29, 2018	<u>129,275</u>	<u>\$ 1,293</u>	<u>\$ 732,073</u>	<u>\$ (469,662)</u>	<u>\$ (2,578)</u>	<u>\$ 261,126</u>

(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.

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (continued)
(unaudited)

The following summarizes the changes in total equity for the three month period ended September 28, 2019:

	Common Stock (\$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, June 29, 2019	132,536	\$ 1,325	\$ 756,924	\$ (460,816)	\$ (2,256)	\$ 295,177
Net income for the three months ended September 28, 2019	—	—	—	13,539	—	13,539
Translation adjustments, net of tax	—	—	—	—	(93)	(93)
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of shares withheld for employee taxes	966	10	(4,668)	—	—	(4,658)
Stock-based compensation related to stock options, ESPP and RSUs	—	—	5,680	—	—	5,680
Balances, September 28, 2019	<u>133,502</u>	<u>\$ 1,335</u>	<u>\$ 757,936</u>	<u>\$ (447,277)</u>	<u>\$ (2,349)</u>	<u>\$ 309,645</u>

The following summarizes the changes in total equity for the three month period ended September 29, 2018:

	Common Stock (\$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, June 30, 2018	125,613	\$ 1,256	\$ 707,991	\$ (476,636)	\$ (1,991)	\$ 230,620
Net income for the three months ended September 29, 2018	—	—	—	6,974	—	6,974
Unrealized loss related to marketable securities, net of tax	—	—	—	—	14	14
Recognized gain on redemption of marketable securities, previously unrealized	—	—	—	—	(17)	(17)
Translation adjustments, net of tax	—	—	—	—	(584)	(584)
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of shares withheld for employee taxes	3,662	37	21,374	—	—	21,411
Stock-based compensation related to stock options, ESPP and RSUs	—	—	2,708	—	—	2,708
Balances, September 29, 2018	<u>129,275</u>	<u>\$ 1,293</u>	<u>\$ 732,073</u>	<u>\$ (469,662)</u>	<u>\$ (2,578)</u>	<u>\$ 261,126</u>

See Accompanying Notes to Unaudited Consolidated Financial Statements.

LATTICE SEMICONDUCTOR CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(unaudited)

Note 1 - Basis of Presentation, and Updates to Accounting Policies

Lattice Semiconductor Corporation, a Delaware corporation, and its subsidiaries ("Lattice," the "Company," "we," "us," or "our") develop semiconductor technologies that we monetize through products, solutions, services, and licenses. Lattice was founded in 1983 and is headquartered in Hillsboro, Oregon.

Basis of Presentation and Use of Estimates

The accompanying Consolidated Financial Statements are unaudited and have been prepared in accordance with U.S. Generally Accepted Accounting Principles ("U.S. GAAP") and pursuant to the rules and regulations of the SEC. In our opinion, they 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. GAAP have been condensed or omitted as permitted by the SEC's rules and regulations for interim reporting. 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 year ended December 29, 2018 ("2018 10-K").

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and judgments affecting the amounts reported in our consolidated condensed financial statements and the accompanying notes. The actual results that we experience may differ materially from our estimates.

We describe our accounting methods and practices in more detail in our 2018 10-K. Except for the impact of the adoption of the new lease accounting standard, discussed below, there have been no other changes to the significant accounting policies, procedures, or general information described in our 2018 10-K that have had a material impact on our consolidated financial statements and related notes.

Updates to Accounting Policies

On December 30, 2018, the first day of our 2019 fiscal year, we adopted Accounting Standards Update ("ASU") No. 2016-02, *Leases* (Topic 842). See "[Note 7 - Leases](#)" for further information on our leases and our application of Topic 842.

Fiscal Reporting Period

We report based on a 52 or 53 week fiscal year ending on the Saturday closest to December 31. Our third quarter of fiscal 2019 and third quarter of fiscal 2018 ended on September 28, 2019 and September 29, 2018, respectively. All references to quarterly or nine months ended financial results are references to the results for the relevant 13-week or 39-week fiscal period.

Concentrations of Risk

Distributors have historically accounted for a significant portion of our total revenue. Revenue attributable to distributors as a percentage of total revenue was 81% and 82% for the third quarter of fiscal 2019 and 2018, respectively, and 82% and 85% for the nine months ended September 28, 2019 and September 29, 2018, respectively. In the periods covered by this report, no end customer accounted for more than 10% of total revenue.

Distributors also account for a substantial portion of our net accounts receivable. At September 28, 2019 and December 29, 2018, our largest distributor accounted for 43% and 41%, respectively, and our second largest accounted for 28% and 23%, respectively, of net accounts receivable. A third distributor accounted for 11% of net accounts receivable at September 28, 2019, but accounted for less than 10% of net accounts receivable at December 29, 2018. No other distributor or end customer accounted for more than 10% of net accounts receivable at these dates.

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.

Note 2 - Net Income (Loss) per Share

Our calculation of the diluted share count includes the number of shares from our equity awards with market conditions or performance conditions that would be issuable under the terms of such awards at the end of the reporting period. For equity awards with a market condition, the maximum number of shares issuable are included in the diluted share count as of September 28, 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. For equity awards with a performance condition, no shares are included in the diluted share count as of September 28, 2019, as vesting of these awards is contingent upon evaluation of the performance condition over two consecutive trailing four-quarter periods starting as of the date the awards were issued, which have not yet elapsed. See "[Note 9 - 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		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
<i>(in thousands, except per share data)</i>				
Net income (loss)	\$ 13,539	\$ 6,974	\$ 29,506	\$ (19,201)
Shares used in basic Net income (loss) per share	132,997	127,816	132,065	125,578
Dilutive effect of stock options, RSUs, ESPP shares, and equity awards with a market condition or performance condition	5,897	1,658	5,614	—
Shares used in diluted Net income (loss) per share	138,894	129,474	137,679	125,578
Basic Net income (loss) per share	\$ 0.10	\$ 0.05	\$ 0.22	\$ (0.15)
Diluted Net income (loss) per share	\$ 0.10	\$ 0.05	\$ 0.21	\$ (0.15)

The computation of diluted Net income (loss) per share excludes the effects of stock options, restricted stock units ("RSUs"), Employee Stock Purchase Plan ("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		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 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	909	2,299	328	8,284

Stock options, RSUs, and ESPP shares that are antidilutive at September 28, 2019 could become dilutive in the future.

Note 3 - Revenue from Contracts with Customers

Disaggregation of revenue

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

Major Class of Revenue

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
<i>(In thousands)</i>				
Product revenue - Distributors	\$ 84,135	\$ 82,969	\$ 248,234	\$ 257,716
Product revenue - Direct	13,342	14,963	38,951	33,619
Licensing and services revenue	5,992	3,552	16,671	11,487
Total revenue	\$ 103,469	\$ 101,484	\$ 303,856	\$ 302,822

Revenue by Geographical Market

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
<i>(In thousands)</i>				
Asia	\$ 79,644	\$ 76,927	\$ 225,500	\$ 226,747
Europe	11,691	11,873	36,486	36,177
Americas	12,134	12,684	41,870	39,898
Total revenue	\$ 103,469	\$ 101,484	\$ 303,856	\$ 302,822

Contract balances

Our contract assets result from the amount of estimated revenue related to HDMI that we have recognized to date, and which we expect to receive when a new royalty sharing agreement is adopted. Contract assets are included in Prepaid expenses and other current assets on our Consolidated Balance Sheets. The following table summarizes activity during the first nine months of fiscal 2019:

(In thousands)

Contract assets as of December 29, 2018	\$	9,143
Revenues recorded during the period		8,871
Transferred to Accounts receivable or collected		(2,570)
Contract assets as of September 28, 2019	\$	15,444

Contract liabilities are included in Accounts payable and accrued expenses on our Consolidated Balance Sheets. The following table summarizes activity during the first nine months of fiscal 2019:

(In thousands)

Contract liabilities as of December 29, 2018	\$	1,614
Accruals for estimated future stock rotation and scrap returns		4,397
Less: Release of accruals for recognized stock rotation and scrap returns		(2,461)
Prepayment for products to be manufactured and delivered to the customer within six months		751
Contract liabilities as of September 28, 2019	\$	4,301

The impact to revenue from the release of accruals for recognized stock rotation and scrap returns was offset by the processing of return merchandise authorizations totaling \$2.8 million, yielding a net revenue reduction of \$0.3 million for the first nine months of 2019. We will recognize the revenue related to the prepayment contract liability when control of the product is transferred to the end customer and the performance obligation has been satisfied.

Note 4 - Balance Sheet Components

Short-Term Marketable Securities

Our Short-term marketable securities consisted of U.S. government agency obligations with maturities up to two years, which we carried at their fair value as Level 1 instruments in accordance with ASC 820, "Fair Value Measurements." We liquidated these investments in the first quarter of fiscal 2019. The following table summarizes the maturities of our formerly-held Short-term marketable securities at fair value.

(In thousands)

	September 28, 2019	December 29, 2018
Short-term marketable securities:		
Maturing within one year	\$ —	\$ 7,454
Maturing between one and two years	—	2,170
Total marketable securities	<u>\$ —</u>	<u>\$ 9,624</u>

Accounts Receivable

(In thousands)

	September 28, 2019	December 29, 2018
Accounts receivable	\$ 47,544	\$ 61,087
Less: Allowance for doubtful accounts	(111)	(197)
Accounts receivable, net of allowance for doubtful accounts	<u>\$ 47,433</u>	<u>\$ 60,890</u>

Inventories

(In thousands)

	September 28, 2019	December 29, 2018
Work in progress	\$ 43,867	\$ 47,224
Finished goods	15,805	19,872
Total inventories	<u>\$ 59,672</u>	<u>\$ 67,096</u>

Property and Equipment – Geographic Information

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

<i>(In thousands)</i>	September 28, 2019	December 29, 2018
United States	\$ 33,303	\$ 27,353
China	1,698	2,360
Philippines	3,298	3,319
Taiwan	1,268	949
Japan	202	324
Other	394	578
Total foreign property and equipment, net	6,860	7,530
Total property and equipment, net	\$ 40,163	\$ 34,883

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>	September 28, 2019	December 29, 2018
Trade accounts payable	\$ 29,644	\$ 31,880
Liability for non-cancelable contracts	6,686	6,078
Contract liabilities under ASC 606	4,301	1,614
Restructuring	4,129	4,220
Other accrued expenses	3,421	7,971
Total accounts payable and accrued expenses	\$ 48,181	\$ 51,763

Note 5 - Long-Term Debt

On May 17, 2019, we entered into a new credit agreement (the "Current Credit Agreement") with Wells Fargo Bank, National Association, as administrative agent, and other lenders. The Current Credit Agreement provides for a five-year secured term loan facility in an aggregate principal amount of \$175.0 million and a five-year secured revolving loan facility in an aggregate principal amount of up to \$75.0 million, along with other components and options, such as a letter of credit, swing line, or expansion of the revolver, currently not in use, which are more fully described in the Current Credit Agreement.

We used the \$175.0 million term loan proceeds and an initial \$31.5 million revolving loan draw at closing to (i) repay the \$204.4 million obligation outstanding under our previous credit agreement (the "Previous Credit Agreement") with Jefferies Finance LLC, as administrative agent, and (ii) pay fees and expenses totaling \$2.1 million incurred in connection with the Current Credit Agreement. The revolving loan may be used for working capital and general corporate purposes. With the repayment of our obligations under the Previous Credit Agreement, we wrote off the remaining unamortized balance of the related original issue discount and debt costs, which we recorded as a \$2.2 million loss on refinancing in Other expense, net on our Consolidated Statements of Operations in the second quarter of fiscal 2019.

At our option, the term loan and the revolving loan (collectively, "long-term debt") accrue interest at a per annum rate based on either (i) the base rate plus a margin ranging from 0.25% to 1.00%, determined based on our total leverage ratio or (ii) the London Interbank Offered Rate ("LIBOR") for interest periods of 1, 2, 3 or 6 months plus a margin ranging from 1.25% to 2.00%, determined based on our total leverage ratio. The base rate is defined as the highest of (i) the federal funds rate, plus 0.50%, (ii) Wells Fargo Bank, National Association's prime rate or (iii) the LIBOR rate for a 1-month interest period plus 1.00%. As of September 28, 2019, the effective interest rate on the term loan was 4.38%, and the revolving loan did not have an outstanding balance. We pay a commitment fee of 0.20% on the unused portion of the revolving loan.

The term loan is payable through a combination of (i) required quarterly installments of approximately \$4.4 million, and (ii) any payments due upon certain issuances of additional indebtedness and certain asset dispositions, with any remaining outstanding principal amount due and payable on the maturity date of the term loan. The revolving loan is payable at our discretion, with any remaining outstanding principal amount due and payable on the maturity date of the revolving loan.

The Current Credit Agreement contains customary affirmative and negative covenants, including covenants limiting the ability of the Company to, among other things, incur debt, grant liens, undergo certain fundamental changes, make investments, make certain restricted payments, dispose of assets, enter into transactions with affiliates, and enter into burdensome agreements, in each case, subject to limitations and exceptions set forth in the Current Credit Agreement. We are also required to maintain compliance with a total leverage ratio and an interest coverage ratio, in each case, determined in accordance with the terms of the Current Credit Agreement.

We account for the original issue discount and the debt issuance costs as a reduction to the carrying value of our long-term debt on our Consolidated Balance Sheets. We amortize the discount and costs to Interest expense in our Consolidated Statements of Operations over the contractual term using the effective interest method. We determine the Current portion of long-term debt as the sum of the required quarterly installments to be made over the next twelve months, reduced by the original issue discount and the debt issuance costs to be amortized over the next twelve months.

The fair value of our long-term debt approximates the carrying value, which is reflected in our Consolidated Balance Sheets as follows:

<i>(In thousands)</i>	September 28, 2019	December 29, 2018
Principal amount	\$ 158,125	\$ 263,033
Unamortized original issue discount and debt costs	(1,699)	(3,386)
Less: Current portion of long-term debt	(17,196)	(8,290)
Long-term debt, net of current portion and unamortized debt issue costs	<u>\$ 139,230</u>	<u>\$ 251,357</u>

Interest expense related to our long-term debt was included in Interest expense on our Consolidated Statements of Operations as follows:

<i>(In thousands)</i>	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Contractual interest	\$ 1,686	\$ 4,711	\$ 8,991	\$ 14,001
Amortization of debt issuance costs and discount	324	789	1,539	1,847
Total interest expense related to long-term debt	<u>\$ 2,010</u>	<u>\$ 5,500</u>	<u>\$ 10,530</u>	<u>\$ 15,848</u>

Expected future principal payments are based on the schedule of required quarterly installments, adjusted for known voluntary payments. As of September 28, 2019, expected future principal payments on our long-term debt was as follows:

Fiscal year	<i>(in thousands)</i>
2019 (remaining 3 months)	\$ 4,375
2020	17,500
2021	17,500
2022	17,500
2023	17,500
2024	83,750
	<u>\$ 158,125</u>

Note 6 - Restructuring

In April 2019, our management approved and executed an internal restructuring plan (the "Q2 2019 Sales Plan") which focused on a restructuring of the global sales organization through cancellation of certain contracts and a workforce reduction. Under this plan, we have incurred \$2.3 million of restructuring expense during the first nine months of fiscal 2019. All actions planned under the Q2 2019 Sales Plan have been implemented.

In June 2018, our Board of Directors approved an internal restructuring plan (the "June 2018 Plan"), which included the discontinuation of our millimeter wave business and the use of certain assets related to our Wireless products, and a workforce reduction. Under this plan, we incurred approximately \$4.1 million of restructuring expense during the first nine months of fiscal 2018. This plan is substantially complete.

In June 2017, our Board of Directors approved an internal restructuring plan (the "June 2017 Plan"), which included the sale of 100% of the equity of our Hyderabad, India subsidiary and 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. In the third quarter of fiscal 2019, we incurred approximately \$0.3 million of incremental restructuring costs related to this vacated facility due to the timing of sublease transactions and to buyout the lease on the portion of the space that was not sublet. Under the June 2017 Plan, we incurred approximately \$0.4 million and \$0.1 million of expense during the third quarter of fiscal 2019 and fiscal 2018, respectively, and approximately \$2.4 million and \$1.4 million of expense during the nine months ended September 28, 2019 and September 29, 2018, respectively. We have incurred approximately \$18.7 million of total expense through September 28, 2019 under the June 2017 Plan, and all planned actions have been implemented. We expect the total cost of the June 2017 Plan to be approximately \$20.0 million to \$21.5 million as expenses related to our partially vacated facility in San Jose, California will be incurred over the remaining lease term.

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 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 (3)	Total
Accrued Restructuring at December 29, 2018	\$ 1,814	\$ 8,630	\$ 218	\$ 18	\$ 10,680
Restructuring charges	625	2,482	—	1,612	4,719
Costs paid or otherwise settled	(2,279)	(3,714)	(218)	(96)	(6,307)
Accrued Restructuring at September 28, 2019	<u>\$ 160</u>	<u>\$ 7,398</u>	<u>\$ —</u>	<u>\$ 1,534</u>	<u>\$ 9,092</u>
Accrued Restructuring at December 30, 2017	\$ 1,192	\$ 870	\$ 360	\$ 25	\$ 2,447
Restructuring charges	4,034	437	913	111	5,495
Costs paid or otherwise settled	(4,662)	(667)	(1,055)	(113)	(6,497)
Accrued Restructuring at September 29, 2018	<u>\$ 564</u>	<u>\$ 640</u>	<u>\$ 218</u>	<u>\$ 23</u>	<u>\$ 1,445</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

(3) Beginning in the second quarter of fiscal 2019, "Other" included termination fees on the cancellation of certain contracts under the Q2 2019 Sales Plan

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. 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. Concurrent with our adoption of Topic 842, we have early adopted ASU 2019-01, *Leases (Topic 842): Codification Improvements*, which grants disclosure relief for interim periods during the year in which a company adopted Topic 842.

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. We have 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 to 8 years, some of which include options to extend for up to 5 years, and some of which include options to terminate 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. For our operating leases, the weighted-average remaining lease term was 5.9 years and the weighted-average discount rate is 7.0% as of September 28, 2019.

Our adoption of Topic 842 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. We recorded fixed operating lease expenses of \$1.9 million and \$5.8 million for the third quarter and first nine months of fiscal 2019, respectively.

The following table presents the lease balance classifications within the Consolidated Balance Sheets and summarizes their activity during the first nine 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		404
Amortization of right-of-use asset during the period		(4,372)
Impairment of right-of-use asset on Portland, Oregon office (recorded in Restructuring charges)		(977)
Adjustments for present value and foreign currency effects		(385)
Balance as of September 28, 2019	\$	<u>24,563</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		404
Accretion of lease liabilities		1,467
Operating cash used by payments on lease liabilities		(6,540)
Adjustments for present value, foreign currency, and restructuring liability effects		(497)
Balance as of September 28, 2019		27,107
Less: Current portion of operating lease liabilities		(4,623)
Long-term operating lease liabilities, net of current portion	\$	<u>22,484</u>

Maturities of operating lease liabilities as of September 28, 2019 are as follows:

Fiscal year	<i>(in thousands)</i>	
2019 (remaining 3 months)	\$	1,051
2020		7,039
2021		5,294
2022		4,446
2023		4,574
Thereafter		11,388
Total lease payments		33,792
Less: amount representing interest		(6,553)
Less: amount representing restructuring liability adjustments		(132)
Total lease liabilities	\$	<u>27,107</u>

Prior to 2019, the reporting of future minimum lease commitments included the lease obligations associated with previously restructured facilities. Lease obligations for facilities restructured prior to the adoption of Topic 842 totaled approximately \$7.4 million at September 28, 2019 and continued to be recorded in Other long-term liabilities on our Consolidated Balance Sheets.

Note 8 - Intangible Assets

On our Consolidated Balance Sheets at September 28, 2019 and December 29, 2018, Intangible assets, net are shown net of accumulated amortization of \$124.0 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:

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
<i>(In thousands)</i>				
Research and development	\$ 14	\$ 14	\$ 41	\$ 264
Amortization of acquired intangible assets	3,389	3,823	10,168	13,982
	<u>\$ 3,403</u>	<u>\$ 3,837</u>	<u>\$ 10,209</u>	<u>\$ 14,246</u>

During the third quarter of fiscal 2018, we concluded that a certain product line had limited future revenue potential due to a decline in customer demand for that product, and we recorded an impairment charge of \$0.6 million to the intangible asset associated with that product. During the second quarter of fiscal 2018, in addition to recurring amortization expense, we recorded an impairment charge relating to intangible assets of \$11.9 million in the Consolidated Statements of Operations as a result of the strategic decision to discontinue our millimeter wave business.

Note 9 - Stock-Based Compensation

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

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
<i>(In thousands)</i>				
Cost of products sold	\$ 453	\$ 219	\$ 982	\$ 652
Research and development	1,658	926	4,029	2,970
Selling, general, and administrative	3,569	1,563	8,324	6,286
Total stock-based compensation	<u>\$ 5,680</u>	<u>\$ 2,708</u>	<u>\$ 13,335</u>	<u>\$ 9,908</u>

Market-Based and Performance-Based Stock Compensation

In fiscal years 2019 and 2018, we granted various awards of RSUs with either a market condition or a performance condition to certain executives. During the third quarter of fiscal 2019, we granted approximately 0.3 million additional awards of RSUs with a market condition to certain executives. Under the terms of these grants, vesting of the market condition RSUs will not occur unless the Company achieves total shareholder return at least equivalent to the 25th percentile of semiconductors on the Philadelphia Stock Exchange, which condition is tested for one-third of the grants on the first, second and third anniversary of grants. If the 75th percentile of the market condition is achieved the awards may vest at 250% or 200% for the executives. Also during the third quarter of fiscal 2019, the market condition for awards granted in the previous year achieved the 75th percentile of the condition, and the first tranche of these awards vested at 250% or 200% of the RSUs, as applicable for the respective executive. For these awards, we incurred stock compensation expense of approximately \$0.9 million and \$0.1 million in the third quarter of fiscal 2019 and fiscal 2018, respectively, and approximately \$2.9 million and \$0.6 million in the first nine months of fiscal 2019 and fiscal 2018, respectively, which is recorded as a component of total stock-based compensation expense.

The following table summarizes the activity for our awards with a market or performance condition during the first nine months of fiscal 2019:

	Total
<i>(Shares in thousands)</i>	
Balance, December 29, 2018	909
Granted	584
Effect of vesting multiplier	187
Vested	(338)
Canceled	(106)
Balance, September 28, 2019	<u>1,236</u>

Note 10 - Income Taxes

We are subject to federal and state income tax as well as income tax in the foreign jurisdictions in which we operate. For the third quarter of fiscal 2019 and fiscal 2018, we recorded income tax expense of approximately \$1.1 million and \$0.1 million, respectively, and for the first nine months of fiscal 2019 and fiscal 2018, we recorded income tax expense of approximately \$1.5 million and \$2.0 million, respectively. Income taxes for the three and nine month periods ended September 28, 2019 and September 29, 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 and nine months ended September 28, 2019 resulted primarily from a decrease in the valuation allowance that offset expected tax expense in the United States, foreign withholding tax expense, discrete impact from uncertain tax positions, and foreign rate differential primarily due to zero tax rate in Bermuda. For the three and nine months ended September 29, 2018, the difference resulted from an increase in the valuation allowance that offset expected tax benefit in the United States, foreign rate differential and withholding taxes, zero tax rate in Bermuda which resulted in no tax benefit for the pretax loss in Bermuda, and a benefit from the release of uncertain tax positions.

Through September 28, 2019, we continued to evaluate the valuation allowance position in the United States and concluded that we should maintain a full 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 taxable profits sufficient to offset expenditures in future periods within the U.S. It is reasonably possible that during the next nine to twelve months, we will establish a sustained level of profitability in the U.S. As a result, we may reverse a significant portion of the valuation allowance recorded against our U.S. deferred tax assets. The reversal would result in an income tax benefit for the quarterly and annual fiscal period in which we release the valuation allowance. 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 we will realize the net deferred tax assets in future periods.

At September 28, 2019, it is reasonably possible that \$1.3 million of unrecognized tax benefits and \$0.2 million of associated interest and penalties could be recognized during the next twelve months. The \$1.5 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.

Our liability for uncertain tax positions (including penalties and interest) was \$25.9 million and \$26.3 million at September 28, 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 \$24.5 million is netted against deferred tax assets.

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 ("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 11 - 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 we 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, we removed the action to the United States District Court for the District of Oregon. At this stage of the proceedings, we do not have an estimate of the likelihood or the amount of any potential exposure to the Company; however, we believe that these claims are without merit and intend 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.

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

The following discussion should be read along with the unaudited consolidated financial statements and notes thereto included in Item 1 of this Quarterly Report on Form 10-Q, as well as the audited consolidated financial statements and notes thereto and Management's Discussion and Analysis of Financial Condition and Results of Operations in our 2018 10-K.

Overview

Lattice Semiconductor Corporation and its subsidiaries ("Lattice," the "Company," "we," "us," or "our") develop semiconductor technologies that we monetize through products, solutions, design services, and licenses.

Lattice is the low power programmable leader. We solve customer problems across the network, from the Edge to the Cloud, in the growing communications, computing, industrial, automotive, and consumer markets. Our technology, long-standing relationships, and commitment to world-class support enable our customers to create a smart, secure, and connected world.

Lattice has focused its strategy on programmable logic and is building differentiated products based on low power, small size, and ease of use. Our R&D team is optimizing to deliver products at a faster cadence, particularly system solutions for high-growth applications such as Edge Artificial Intelligence, 5G infrastructure, platform security, and factory automation. Our sales team is using our position in top Original Equipment Manufacturers to drive multi-generation design wins and leveraging distribution to grow our broad customer base.

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 (more fully described in "[Note 7 - Leases](#)" 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 2018 10-K.

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and judgments affecting the amounts reported in our consolidated condensed financial statements and the accompanying notes. The actual results that we experience may differ materially from our estimates.

Results of Operations

Key elements of our Consolidated Statements of Operations, including as a percentage of revenue, are presented in the following table:

(In thousands)	Three Months Ended				Nine Months Ended			
	September 28, 2019		September 29, 2018		September 28, 2019		September 29, 2018	
Revenue	\$ 103,469	100.0%	\$ 101,484	100.0%	\$ 303,856	100.0%	\$ 302,822	100.0%
Gross margin	61,439	59.4	58,364	57.5	179,129	59.0	165,133	54.5
Research and development	20,032	19.4	19,131	18.9	59,074	19.4	63,153	20.9
Selling, general and, administrative	21,078	20.4	21,775	21.5	61,618	20.3	69,886	23.1
Amortization of acquired intangible assets	3,389	3.3	3,823	3.8	10,168	3.3	13,982	4.6
Restructuring charges	252	0.2	90	0.1	4,719	1.6	5,495	1.8
Impairment of intangible assets	—	—	586	0.6	—	—	12,486	4.1
Acquisition related charges	—	—	—	—	—	—	1,531	0.5
Income (loss) from operations	<u>\$ 16,688</u>	<u>16.1%</u>	<u>\$ 12,959</u>	<u>12.8%</u>	<u>\$ 43,550</u>	<u>14.3%</u>	<u>\$ (1,400)</u>	<u>(0.5)%</u>

Revenue by End Market

We sell our products globally in three primary groups of end markets: Communications and Computing, Industrial and Automotive, and Consumer. We also provide Intellectual Property licensing and services to these end markets.

We anticipate future revenue growth due to multiple market segment drivers, including:

- Communications and computing: 5G infrastructure deployments, cloud and enterprise servers, and client computing platforms,
- Industrial and automotive: industrial Internet of Things ("IoT"), factory automation, and automotive electronics,
- Consumer: smart home and prosumer.

Our Licensing and Services end market includes revenue from the licensing of our Intellectual Property ("IP"), the collection of certain royalties, patent sales, the revenue related to our participation in consortia and standard-setting activities, and services. While Licensing may be associated with multiple markets, Licensing and services revenue is reported as a separate end market as it has characteristics that differ from other categories, most notably a higher gross margin.

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 also 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 to the end markets by product family based upon historical usage for each family if we cannot identify a specific end market.

The following are examples of end market applications for the periods presented:

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

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

(In thousands)	Three Months Ended				Nine Months Ended			
	September 28, 2019		September 29, 2018		September 28, 2019		September 29, 2018	
Communications and Computing	\$ 41,891	40%	\$ 32,883	32%	\$ 117,320	39%	\$ 90,536	30%
Industrial and Automotive	37,102	36	38,075	37	112,276	37	122,819	40
Consumer	18,484	18	26,974	27	57,589	19	77,980	26
Licensing and Services	5,992	6	3,552	4	16,671	5	11,487	4
Total revenue	\$ 103,469	100%	\$ 101,484	100%	\$ 303,856	100%	\$ 302,822	100%

Revenue from the Communications and Computing end market increased by 27% for the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018 and increased by 30% for the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018 primarily due to demand increases for server and client computing products, as well as for products used in 5G wireless infrastructure.

Revenue from the Industrial and Automotive end market decreased by 3% for the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018 and decreased by 9% for the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018 due to broad market decreases, primarily in Asia and Europe.

Revenue from the Consumer end market decreased by 31% for the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018 and decreased by 26% for the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018 primarily due to decreased demand for mobile phone related products, and broad market weakness.

Revenue from the Licensing and Services end market is subject to variability between periods in the amount of royalties that we are entitled to receive. Licensing and services revenue increased by 69% for the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018 and increased by 45% for the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018 due primarily to variability in HDMI royalty revenue and certain one-time patent and asset sales recognized 2019.

We share HDMI royalties with the other HDMI Founders based on an allocation formula, which is reviewed periodically, generally every three years. 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 for fiscal years 2019 and 2018, 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:

(In thousands)	Three Months Ended				Nine Months Ended			
	September 28, 2019		September 29, 2018		September 28, 2019		September 29, 2018	
Asia	\$ 79,644	77%	\$ 76,927	76%	\$ 225,500	74%	\$ 226,747	75%
Europe	11,691	11	11,873	12	36,486	12	36,177	12
Americas	12,134	12	12,684	12	41,870	14	39,898	13
Total revenue	\$ 103,469	100%	\$ 101,484	100%	\$ 303,856	100%	\$ 302,822	100%

Revenue from End Customers

In the periods covered by this report, no end customer accounted for more than 10% of total revenue, and we expect to continue to sell our products to a broad base of end customers.

Revenue from Distributors

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

	% of Total Revenue Three Months Ended		% of Total Revenue Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Arrow Electronics Inc.	24%	24%	25%	30%
Weikeng Group	31	27	30	26
All others	26	31	27	29
All distributors	81%	82%	82%	85%

Revenue attributable to distributors was essentially flat for the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018, while revenue attributable to distributors decreased in the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018 as the increased revenue recognized in fiscal 2018 on inventory held by distributors from the adoption of ASC 606, *Revenue from Contracts with Customers*, did not recur in fiscal 2019.

Gross Margin

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

(In thousands)	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Gross margin	\$ 61,439	\$ 58,364	\$ 179,129	\$ 165,133
Percentage of net revenue	59.4%	57.5%	59.0%	54.5%
Product gross margin %	56.9%	56.0%	56.6%	52.8%
Licensing and services gross margin %	100.0%	100.0%	100.0%	97.7%

For the third quarter and first nine months of fiscal 2019 compared to the third quarter and first nine months of fiscal 2018, Gross margin as a percentage of net revenue increased by 190 and 450 basis points, respectively.

Gross margin increased in the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018 due to product cost reductions, benefits from pricing optimization, as well as overall mix. For the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018, the increase in gross margin was also attributable to the non-recurrence in 2019 of the \$8.3 million in specific inventory reserves taken in the second quarter of fiscal 2018 as a result of the discontinuation of our millimeter wave business.

Additionally, Gross margin was favorably impacted by the relative mix between product revenue and licensing and services revenue. Licensing and services accounted for 5.8% and 5.5% of total revenue in the third quarter and first nine months of fiscal 2019, respectively, compared to 3.5% and 3.8% of total revenue in the third quarter and first nine months of fiscal 2018, respectively. Because of its higher margin, the licensing and services portion of our overall revenue can have a disproportionate impact on 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:

(In thousands)	Three Months Ended			Nine Months Ended		
	September 28, 2019	September 29, 2018	% change	September 28, 2019	September 29, 2018	% change
Research and development	\$ 20,032	\$ 19,131	5	\$ 59,074	\$ 63,153	(6)
Percentage of revenue	19.4%	18.9%		19.4%	20.9%	

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 started to capitalize mask costs that we expect will 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.

The increase in Research and development expense for the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018 was due mainly to increased stock compensation expense, partially offset by cost reductions realized from the discontinuation of our millimeter wave business and other restructuring actions including the consolidation of leased facilities. The decrease in Research and development expense for the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018 was due mainly to the cost reductions realized from the discontinuation of our millimeter wave business and other restructuring actions including the consolidation of leased facilities. These savings were predominantly from headcount related expenses and from reductions in both depreciation and rent expense, partially offset by increased stock compensation expense. Research and development expense also decreased for the comparative nine-month periods as a result of our capitalization of mask costs in the current year.

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. We anticipate that these expenses will be relatively flat as a percentage of revenue, but will increase in absolute dollars as revenue rises. Additionally, we expect to continue improving our Research and development expense efficiency through continued portfolio optimization and expanded investment in software and solutions.

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:

(In thousands)	Three Months Ended			Nine Months Ended		
	September 28, 2019	September 29, 2018	% change	September 28, 2019	September 29, 2018	% change
Selling, general, and administrative	\$ 21,078	\$ 21,775	(3)	\$ 61,618	\$ 69,886	(12)
Percentage of revenue	20.4%	21.5%		20.3%	23.1%	

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

The decrease in Selling, general, and administrative expense for the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018 is driven by savings in the current year period resulting from previous restructuring actions, partially offset by increased stock compensation expense. The decrease in Selling, general, and administrative expense for the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018 is due mainly to the non-recurrence of certain one-time costs related to our CEO 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.

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:

(In thousands)	Three Months Ended			Nine Months Ended		
	September 28, 2019	September 29, 2018	% change	September 28, 2019	September 29, 2018	% change
Amortization of acquired intangible assets	\$ 3,389	\$ 3,823	(11)	\$ 10,168	\$ 13,982	(27)
Percentage of revenue	3.3%	3.8%		3.3%	4.6%	

The decrease in Amortization of acquired intangible assets for the third quarter and first nine months of fiscal 2019 compared to the third quarter and first nine months 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. We expect our quarterly Amortization of acquired intangible assets to remain at approximately the current amount through the first quarter of fiscal 2020, when the amortization period for most intangibles will end, reducing the quarterly expense by approximately 80%.

Restructuring Charges

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

(In thousands)	Three Months Ended			Nine Months Ended		
	September 28, 2019	September 29, 2018	% change	September 28, 2019	September 29, 2018	% change
Restructuring charges	\$ 252	\$ 90	180	\$ 4,719	\$ 5,495	(14)
Percentage of revenue	0.2%	0.1%		1.6%	1.8%	

Restructuring charges are comprised of 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. Details of our restructuring plans and expenses incurred under them are more fully discussed in "[Note 6 - Restructuring](#)" of this report.

The increase in restructuring expense in the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018 was driven primarily by higher lease termination charges in the current year period. The decrease in restructuring expense in the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018 was driven primarily by the higher headcount-related restructuring charges in the prior year periods, as compared to lower charges in the current period from ceasing use of certain leased facilities and from termination fees on the cancellation of certain contracts.

Impairment of Acquired Intangible Assets

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

(In thousands)	Three Months Ended			Nine Months Ended		
	September 28, 2019	September 29, 2018	% change	September 28, 2019	September 29, 2018	% change
Impairment of acquired intangible assets	\$ —	\$ 586	(100)	\$ —	\$ 12,486	(100)
Percentage of revenue	—%	0.6%		—%	4.1%	

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

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

Acquisition Related Charges

Acquisition related charges include legal and professional fees directly related to acquisitions. We incurred no Acquisition related charges in either the third quarter or first nine months of fiscal 2019, nor in the third quarter of fiscal 2018. The Acquisition related charges incurred in the first nine months of fiscal 2018 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 continued to incur certain residual legal fees directly related to this transaction.

Interest expense

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

(In thousands)	Three Months Ended			Nine Months Ended		
	September 28, 2019	September 29, 2018	% change	September 28, 2019	September 29, 2018	% change
Interest expense	\$ (2,022)	\$ (5,500)	(63)	\$ (10,547)	\$ (15,582)	(32)
Percentage of revenue	(2.0)%	(5.4)%		(3.5)%	(5.1)%	

Interest expense is primarily related to our long-term debt, 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 third quarter and first nine months of fiscal 2019 compared to the third quarter and first nine months 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, coupled with the significant reduction in the effective interest rate on our long-term debt under the terms of the new Credit Agreement.

Other expense, net

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

(In thousands)	Three Months Ended			Nine Months Ended		
	September 28, 2019	September 29, 2018	% change	September 28, 2019	September 29, 2018	% change
Other expense, net	\$ (61)	\$ (452)	(87)	\$ (2,017)	\$ (246)	+100
Percentage of revenue	(0.1)%	(0.4)%		(0.7)%	(0.1)%	

For the third quarter of fiscal 2019 compared to the third quarter of fiscal 2018, Other expense, net decreased due to reductions in foreign currency exchange losses and from reduced miscellaneous expenses. For the first nine months of fiscal 2019 compared to the first nine months of fiscal 2018, Other expense, net increased primarily due to the \$2.2 million loss on re-financing charge taken in the second quarter of fiscal 2019 to write off the remaining unamortized balance of debt costs and original issue discount related to our refinanced long-term debt, partially offset by reduced miscellaneous expenses during the period.

Income Taxes

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

(In thousands)	Three Months Ended			Nine Months Ended		
	September 28, 2019	September 29, 2018	% change	September 28, 2019	September 29, 2018	% change
Income tax expense	\$ 1,066	\$ 33	+100	\$ 1,480	\$ 1,973	(25)

Our Income tax expense for the third quarters and first nine months 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 increase in expense in the third quarter of fiscal 2019 as compared to the third quarter of fiscal 2018 is primarily due to increased foreign income and withholding taxes, as well as the effect of uncertain tax positions. The decrease in expense in the first nine months of fiscal 2019 as compared to the first nine months of fiscal 2018 is primarily due to decreased foreign withholding taxes related to HDMI royalty distributions received in the current year period.

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. It is reasonably possible that during the next nine to twelve months, we will establish a sustained level of profitability in the U.S. As a result, we may reverse a significant portion of the valuation allowance recorded against our U.S. deferred tax assets. The reversal would result in an income tax benefit for the quarterly and annual fiscal period in which we release the valuation allowance. 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. Bermuda enacted the Economic Substance Act of 2018, effective January 2019, with a six-month transition period. We are currently analyzing this legislation in concert with the 2017 US tax reform in order to align our global tax structure more efficiently in the future.

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. Global Intangible Low-Taxed Income ("GILTI") results 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. Base Erosion Anti-Abuse Tax ("BEAT") effectively requires U.S. companies with related non-U.S. persons to pay a minimum amount of U.S. tax and does not currently apply to us 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.

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

We believe that our financial resources will be sufficient to meet our working capital needs through at least the next 12 months. As of September 28, 2019, we did not have significant long-term commitments for capital expenditures. In the future, 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, acquisitions, securing additional wafer supply, increasing our working capital, or other operations, we may seek to obtain equity or additional debt financing, or advance purchase payments or similar arrangements with wafer manufacturers. We may also seek 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. On May 17, 2019, we entered into our Current Credit Agreement that is more fully discussed under the "Credit Arrangements" heading, below.

Cash, cash equivalents, and short-term marketable securities

<i>(In thousands)</i>	September 28, 2019	December 29, 2018	\$ Change
Cash and cash equivalents	\$ 97,413	\$ 119,051	\$ (21,638)
Short-term marketable securities	—	9,624	(9,624)
Total Cash and cash equivalents and Short-term marketable securities	<u>\$ 97,413</u>	<u>\$ 128,675</u>	<u>\$ (31,262)</u>

As of September 28, 2019, we had total Cash, cash equivalents, and short-term marketable securities of \$97.4 million, of which approximately \$63.6 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, among other things, (i) available funds among our 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 dividends. This should not result in our recording significant additional tax expense as we have accrued expense based on current withholding rates. As of September 28, 2019, we could access all cash held by our foreign subsidiaries without incurring significant additional expense.

The net decrease in Cash, cash equivalents, and short-term marketable securities of \$31.3 million between December 29, 2018 and September 28, 2019 was primarily driven by cash flows from the following activities:

Operating activities — Cash provided by operating activities results from net income adjusted for certain non-cash items and changes in assets and liabilities. Cash provided by operating activities for the first nine months of fiscal 2019 was \$84.8 million, an increase of \$64.2 million from the \$20.6 million of cash provided by operating activities for the first nine months of fiscal 2018. This increase was driven by both improved operating performance, which contributed \$40.7 million to the increase, and by changes in working capital, which contributed \$23.5 million to the increase, primarily due to increased cash receipts associated with the timing of payments from customers. We are using this increased cash provided by operating activities to invest in our operations and to reduce our long-term debt.

Investing activities — Cash used by investing activities results from transactions related to short-term marketable securities, capital expenditures and payments for software licenses. The \$7.8 million of cash used by investing activities in the first nine months of fiscal 2019 was \$9.1 million less than the \$16.9 million used by investing activities in the first nine months of fiscal 2018 primarily due to \$14.3 million less cash used by short-term marketable securities offset by \$5.2 million more cash used for capital expenditures and software licenses. In the first nine months of fiscal 2018, we made \$4.6 million in net purchases of short-term marketable securities, whereas we liquidated these investments in 2019 for \$9.7 million. The total \$17.5 million of cash used in the first nine months of fiscal 2019 for capital expenditures and payments for software licenses was \$5.2 million greater than the \$12.3 million used in the first nine months of fiscal 2018 due primarily to increased investments in test equipment and software enhancements.

Financing activities — Financing cash flows consist primarily of payments on and refinancing of our long-term debt, proceeds from the exercise of options to acquire common stock, and tax payments related to the net share settlement of restricted stock units. In May 2019, we entered into our Current Credit Agreement and received \$206.5 million, which we used to pay off the \$204.4 million outstanding balance on our previous loan. In connection with the Current Credit Agreement, we paid \$2.1 million in debt issuance costs. During the first nine months of fiscal 2019, we made a total of \$107.0 million in voluntary and required principal payments on our long-term debt. Employee exercises of stock options partially offset by tax withholdings on vesting of RSUs provided net cash flows of \$8.4 million in the first nine months of fiscal 2019, which is a decrease of approximately \$18.1 million from the \$26.5 million provided in the first nine months of fiscal 2018.

Accounts receivable, net

<i>(In thousands)</i>	September 28, 2019	December 29, 2018	Change
Accounts receivable, net	\$ 47,433	\$ 60,890	\$ (13,457)
Days sales outstanding - Overall	42	58	(16)

Accounts receivable, net as of September 28, 2019 decreased by approximately \$13.5 million, or 22%, compared to December 29, 2018. This decrease resulted primarily from improved timing of collections from major distributors, which also decreased the overall Days sales outstanding to 42 days at September 28, 2019 from 58 days at December 29, 2018.

Inventories

<i>(In thousands)</i>	September 28, 2019	December 29, 2018	Change
Inventories	\$ 59,672	\$ 67,096	\$ (7,424)
Days of inventory on hand	130	147	(17)

Inventories as of September 28, 2019 decreased \$7.4 million, or approximately 11%, compared to December 29, 2018 primarily due to a decline related to the ramp down of mature and aging products.

The Days of inventory on hand ratio compares the inventory balance at the end of a quarter to the cost of sales in that quarter. Our Days of inventory on hand decreased to 130 days at September 28, 2019 from 147 days at December 29, 2018. This decrease resulted from improved inventory management.

Credit Arrangements

On May 17, 2019, we entered into our new Credit Agreement with Wells Fargo Bank, National Association, as administrative agent, and other lenders. The details of this new arrangement are more fully described in "[Note 5 - Long-Term Debt](#)" in the accompanying Notes to Consolidated Financial Statements.

As of September 28, 2019, we had no significant long-term purchase commitments for capital expenditures or existing used or unused credit arrangements beyond the secured revolving loan facility described above.

Contractual Cash Obligations

There have been no material changes to our contractual cash obligations outside of the ordinary course of business in the first nine 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 September 28, 2019, we did not have any off-balance sheet arrangements of the type described by Item 303(a)(4) of SEC Regulation S-K.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of fluctuations in foreign currency exchange rates and interest rates. We assess these risks on a regular basis and have established policies that are designed to protect against the adverse effects of these and other potential exposures.

Foreign Currency Exchange Rate Risk

There have been no material changes to the foreign currency exchange rate risk previously disclosed in Part II, Item 7A, "Quantitative and Qualitative Disclosures About Market Risk," of our Annual Report on Form 10-K for the fiscal year ended December 29, 2018.

Interest Rate Risk

We are exposed to interest rate risk related to our indebtedness. At September 28, 2019, we had \$158.1 million outstanding under our Credit Agreement. A hypothetical increase in the one-month LIBOR by 1% (100 basis points) would increase our future interest expense by approximately \$0.4 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. 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

There were no changes in our internal controls over financial reporting (as defined in Rules 13a - 15(f) and 15(d) - 15(f) under the Exchange Act) that occurred during the third quarter of fiscal 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

We do not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

The information set forth above under "Note 11 - 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. 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. 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 the Securities Exchange Act of 1934 Rule 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to the Securities Exchange Act of 1934 Rule 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
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: October 31, 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: October 31, 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: October 31, 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 September 28, 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: October 31, 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 September 28, 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: October 31, 2019