LATTICE SEMICONDUCTOR CORP
Form 10-Q
May 08, 2018
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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q
(Mark One)
[X] QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

FOR THE QUARTERLY PERIOD ENDED MARCH 31, 2018
OR
[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE TRANSITION PERIOD FROM __________ TO __________
Commission file number 000-18032
LATTICE SEMICONDUCTOR CORPORATION
(Exact name of Registrant as specified in its charter)

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

(503) 268-8000
(Registrant's telephone number, including area code)
Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes [X] No [ ]
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period as the registrant was required to submit and post such files). Yes [X] No [ ]
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer [ ]	Accelerated filer [X]
Non-accelerated filer [ ] (Do not check if a smaller reporting company)	Smaller reporting company [ ]
	Emerging growth company [ ]

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

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

Number of shares of common stock outstanding as of May 4, 2018 124,768,669

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QUARTERLY REPORT ON FORM 10-Q
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Forward-Looking Statements

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

Examples of forward-looking statements include, but are not limited to, statements about: our transitions to newly adopted accounting standards; the effect of the implementation of new accounting standards on our consolidated financial statements and financial results; the effects of product, end market and customer mix on our gross margin in the future; our strategies and beliefs regarding the markets in which we compete or may compete; growth opportunities and growth in markets we may serve; our making significant future investments in research and development; our expectations regarding cash provided by or used in operating activities; our expectations regarding total restructuring charges under and timing of restructuring plans adopted by our Board; our expectation that we will not pay U.S. federal income taxes until we fully realize our tax net operating loss and credit carryforwards; the sufficiency of our financial resources to meet our operating and working capital needs through at least the next 12 months; the advantages our technology provides to our customers, including advanced features in an increasingly intense global technology market; our future product development and marketing plans; our intention to continually introduce new products and enhancements and reduce manufacturing costs; our expectation of emerging technology trends; the anticipation that we will become increasingly dependent on revenue from newer products; our expectation of production volumes and the associated revenue stream for certain mobile handset providers; market acceptance of and demand for our devices; our continued participation in or sources of revenue from standard setting initiatives or consortia that develop and promote the High-Definition Multimedia Interface ("HDMI"), Mobile High-Definition Link ("MHL") and WirelessHD specifications; the effect of termination of our agent functions regarding the HDMI consortium, related reduction in adopter fees, revenue recognition, impairment charges and any other changes in the agreements relating to various intellectual property or standards consortia and their sharing of past or present fees or royalties; our expectations regarding sharing of HDMI royalty revenues; our plans to continue to monetize our patent portfolio through sales of non-core patents; our ability to adequately remediate our material weakness; our expectation that we will continue to transition to increasingly smaller geometry process technologies and the difficulties in transitioning; our need and ability to maintain or develop successful foundry relationships to produce new products; the adequacy of assembly and test capacity commitments; our expectations regarding taxes and tax adjustments, particularly with respect to the 2017 Tax Act; our conclusion that we should maintain a valuation allowance against certain tax assets; our belief that we may recognize certain tax benefits or penalties during the next twelve months; our ability to forecast uncertain tax positions; our ability to forecast future sales and the relative product mix of those revenues; our mitigation of the concentration of credit risk; our expectation that we may consider acquisition opportunities to further extend our product or technology portfolios and further expand our product offerings; our beliefs regarding the adequacy of our liquidity, capital resources and facilities; and our expectations regarding our implementation of a company-wide enterprise resource planning system.

Forward-looking statements involve estimates, assumptions, risks, and uncertainties that could cause actual results to differ materially from those expressed in the forward-looking statements. The key factors, among others, that could cause our actual results to differ materially from the forward-looking statements included global economic conditions and uncertainty, the concentration of our sales in certain end markets, particularly as it relates to the concentration of our sales in the Asia Pacific region, market acceptance and demand for our existing and new products, our ability to license our intellectual property, any disruption of our distribution channels, the impact of competitive products and pricing, unexpected charges, delays or results relating to our restructuring plans, unexpected complications with our implementation of a company-wide enterprise resource planning system, the effect of the downturn in the economy on

capital markets and credit markets, unanticipated taxation requirements or positions of the U.S. Internal Revenue Service, unanticipated effects of tax reform, or unexpected impacts of recent accounting guidance. In addition, actual results are subject to other risks and uncertainties that relate more broadly to our overall business, including those more fully described herein and that are otherwise described from time to time in our filings with the Securities and Exchange Commission, including, but not limited to, the items discussed in “Risk Factors” in Item 1A of Part II of this Quarterly Report on Form 10-Q.

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

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PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(unaudited)

(In thousands, except per share data)	Three Months Ended March 31, 2018	April 1, 2017
Revenue:		
Product	$95,109	$92,669
Licensing and services	3,514	11,918
Total revenue	98,623	104,587
Costs and expenses:		
Cost of product revenue	42,102	41,614
Cost of licensing and services revenue	—	2,141
Research and development	22,941	27,389
Selling, general, and administrative	27,043	23,905
Amortization of acquired intangible assets	5,636	8,514
Restructuring charges	1,029	66
Acquisition related charges	667	1,660
Total costs and expenses	99,418	105,289
Loss from operations	(795)	(702)
Interest expense	(5,114)	(5,568)
Other income (expense), net	554	(487)
Loss before income taxes	(5,355)	(6,757)
Income tax expense	597	518
Net loss	$(5,952)	$(7,275)
Net loss per share, basic and diluted	$(0.05)	$(0.06)
Shares used in per share calculations, basic and diluted	124,076	121,800

See Accompanying Notes to Unaudited Consolidated Financial Statements.

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LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(unaudited)

(In thousands)	Three Months Ended March 31, 2018	Three Months Ended April 1, 2017
Net loss	$(5,952)	$(7,275)
Other comprehensive loss:		
Unrealized loss related to marketable securities, net of tax	(7)	(43)
Reclassification adjustment for (gains) losses related to marketable securities included in other income (expense), net of tax	(1)	170
Translation adjustment, net of tax	589	274
Comprehensive loss	$(5,371)	$(6,874)

See Accompanying Notes to Unaudited Consolidated Financial Statements.

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LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED BALANCE SHEETS
(unaudited)

(In thousands, except share and par value data)	March 31, 2018	December 30, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$99,392	$ 106,815
Short-term marketable securities	12,078	4,982
Accounts receivable, net of allowance for doubtful accounts	65,779	55,104
Inventories	77,917	79,903
Prepaid expenses and other current assets	25,405	16,567
Total current assets	280,571	263,371
Property and equipment, less accumulated depreciation of $136,184 at March 31, 2018 and $131,260 at December 30, 2017	37,674	40,423
Intangible assets, net	45,595	51,308
Goodwill	267,514	267,514
Deferred income taxes	200	198
Other long-term assets	13,279	13,147
Total assets	$644,833	$ 635,961
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses (includes restructuring)	$55,274	$ 54,405
Accrued payroll obligations	8,975	10,416
Current portion of long-term debt	1,813	1,508
Deferred income and allowances on sales to distributors	—	17,250
Deferred licensing and services revenue	—	68
Total current liabilities	66,062	83,647
Long-term debt	298,995	299,667
Other long-term liabilities	34,104	34,954
Total liabilities	399,161	418,268
Contingencies (Note 15)	—	—
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; 124,311,000 shares issued and outstanding as of March 31, 2018 and 123,895,000 shares issued and outstanding as of December 30, 2017	1,243	1,239
Additional paid-in capital	701,713	695,768
Accumulated deficit	(456,413)	(477,862)
Accumulated other comprehensive loss	(871)	(1,452)
Total stockholders' equity	245,672	217,693
Total liabilities and stockholders' equity	$644,833	$ 635,961

See Accompanying Notes to Unaudited Consolidated Financial Statements.

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LATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited)

(In thousands)	Three Months Ended March 31, 2018	April 1, 2017
Cash flows from operating activities:		
Net loss	$(5,952)	$(7,275)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Depreciation and amortization	12,356	15,296
Amortization of debt issuance costs and discount	507	933
(Gain) loss on sale or maturity of marketable securities	(1)	170
Loss (gain) on forward contracts	99	(78)
Stock-based compensation expense	4,800	3,843
Gain on disposal of fixed assets	(58)	—
Impairment of cost-method investment	—	339
Changes in assets and liabilities:		
Accounts receivable, net	(8,867)	33,563
Inventories	2,356	1,393
Prepaid expenses and other assets	(3,253)	1,137
Accounts payable and accrued expenses (includes restructuring)	1,567	(35,029)
Accrued payroll obligations	(1,441)	(1,706)
Income taxes payable	413	(1,765)
Deferred income and allowances on sales to distributors	—	(2,720)
Deferred licensing and services revenue	(68)	(436)
Net cash provided by operating activities	2,458	7,665
Cash flows from investing activities:		
Proceeds from sales of and maturities of short-term marketable securities	2,500	5,700
Purchases of marketable securities	(9,603)	(7,420)
Capital expenditures	(1,804)	(3,374)
Cash paid for software licenses	(1,837)	(1,617)
Net cash used in investing activities	(10,744)	(6,711)
Cash flows from financing activities:		
Restricted stock unit withholdings	(459)	(693)
Proceeds from issuance of common stock	1,608	1,144
Repayment of debt	(875)	(10,780)
Net cash provided by (used in) financing activities	274	(10,329)
Effect of exchange rate change on cash	589	274
Net decrease in cash and cash equivalents	(7,423)	(9,101)
Beginning cash and cash equivalents	106,815	106,552
Ending cash and cash equivalents	$99,392	$97,451
Supplemental cash flow information:		
Change in unrealized loss related to marketable securities, net of tax, included in Accumulated other comprehensive loss	$7	$43
Income taxes paid, net of refunds	$40	$222
Interest paid	$4,420	$5,025

Accrued purchases of plant and equipment	$232	$1,297

See Accompanying Notes to Unaudited Consolidated Financial Statements.

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LATTICE SEMICONDUCTOR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

Note 1 - Basis of Presentation and Significant Accounting Policies

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

Fiscal Reporting Period

We report based on a 52 or 53-week fiscal year ending on the Saturday closest to December 31. Our first quarter of fiscal 2018 and first quarter of fiscal 2017 ended on March 31, 2018 and April 1, 2017, respectively. All references to quarterly or three months ended financial results are references to the results for the relevant 13-week fiscal period.

Principles of Consolidation and Presentation

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

Reclassifications

Certain amounts in the prior fiscal year in the accompanying consolidated financial statements and notes thereto have been reclassified to conform to the presentation adopted in the current fiscal year. These reclassifications had no material effect on the results of operations or financial position for any period presented. We had previously treated an investment as an equity-method investment and reported equity in net loss of an unconsolidated affiliate separately, amounting to approximately $0.3 million for the three months ended April 1, 2017. We have reclassified the prior year loss to Other income (expense), net on our Consolidated Statements of Operations to be consistent with the current year treatment of the investment as a cost-method investment.

Use of Estimates

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

Cash Equivalents and Marketable Securities

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

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Fair Value of Financial Instruments

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

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

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

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

Foreign Exchange and Translation of Foreign Currencies

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

We translate accounts denominated in foreign currencies in accordance with ASC 830, "Foreign Currency Matters," using the current rate method under which asset and liability accounts are translated at the current rate, while stockholders' equity accounts are translated at the appropriate historical rates, and revenue and expense accounts are translated at average monthly exchange rates. Translation adjustments related to the consolidation of foreign subsidiary financial statements are reflected in Accumulated other comprehensive loss in Stockholders' equity (see "Note 10 - Changes in Stockholders' Equity and Accumulated Other Comprehensive Loss").

Derivative Financial Instruments

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

	March 31, 2018	December 30, 2017

Total cost of contracts for Japanese yen (in thousands)	$ 3,194	$ 2,204
Number of contracts	3	2
Settlement month	June 2018	June 2018

Although these hedges mitigate our foreign currency exchange rate exposure from an economic perspective, they were not designated as "effective" hedges for accounting purposes and as such are adjusted to fair value through Other income (expense), net, with a loss of approximately $0.1 million for the fiscal quarter ended March 31, 2018 and a gain of approximately $0.1 million for the fiscal quarter ended December 30, 2017. We do not hold or issue derivative financial instruments for trading or speculative purposes.

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Concentration Risk

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

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

	Three Months Ended	
	March 31, 2018	April 1, 2017
Revenue attributable to top five end customers	16 %	37 %
Revenue attributable to largest end customer	4 %	12 %

No other end customer accounted for more than 10% of total revenue during these periods. We did not have enough information to assign end customers to approximately $8.3 million of revenue recognized for the three months ended March 31, 2018 on shipments to distributors that have not sold through to end customers.

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

	Three Months Ended	
	March 31, 2018	April 1, 2017
Revenue attributable to distributors*	87 %	71 %

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

Our two largest distributor groups, Arrow Electronics, Inc. ("Arrow") and the Weikeng Group ("Weikeng"), also account for a substantial portion of our trade receivables. At March 31, 2018 and December 30, 2017, Arrow accounted for 52% and 54%, respectively, and Weikeng accounted for 15% and 2%, respectively, of gross trade receivables. No other distributor group or end customer accounted for more than 10% of gross trade receivables at these dates.

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

Accounts receivable do not bear interest and are shown net of allowances for doubtful accounts of $9.4 million at both March 31, 2018 and December 30, 2017.The allowance for doubtful accounts reflects our best estimate of probable losses inherent in the accounts receivable balance. We determine the allowance based on assessment of known troubled accounts, analysis of the aging of our accounts receivable, historical experience, management judgment, and other currently available evidence. We write off accounts receivable against the allowance when we determine a balance is uncollectible and no longer actively pursue collection of the receivable. The amounts of accounts receivable written off were insignificant for all periods presented. Bad debt expense was negligible for both the first quarter of fiscal 2018 and the first quarter of fiscal 2017.

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

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

Revenue Recognition

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2014-09, Revenue from Contracts with Customers (Topic 606). We adopted ASU 2014-09 and its related amendments, collectively known as Accounting Standards Codification 606 (ASC 606), effective December 31, 2017 using the modified retrospective method. Please see "Note 2 - Revenue from Contracts with Customers" for disclosures related to the impact of this standard and discussion of our updated policies related to revenue recognition and accounting for costs to obtain and fulfill customer contracts.

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Property and Equipment

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

Variable Interest Entities and Equity Investments in Privately Held Companies

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

Equity investments in privately held companies that we are not required to consolidate are accounted for under the cost method, as assessed under ASC 325-20, "Cost Method Investments." These investments are reviewed on a quarterly basis to determine if their values have been impaired and adjustments are recorded as necessary. We assess the potential impairment of these investments by applying a fair value analysis using a revenue multiple approach. Declines in value that are judged to be other-than-temporary are reported in Other income (expense), net in the accompanying Consolidated Statements of Operations with a commensurate decrease in the carrying value of the investment (see "Note 8 - Cost Method Investment and Collaborative Arrangement"). Upon disposition of these investments, the specific identification method is used to determine the cost basis in computing realized gains or losses.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of the underlying net tangible and intangible assets. Goodwill is not amortized, but instead is tested for impairment annually or more frequently if certain indicators of impairment are present. We do not expect goodwill impairment to be tax deductible for income tax purposes. No impairment charges relating to goodwill were recorded for the first three months of fiscal 2018 or fiscal 2017 as no indicators of impairment were present.

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

New Accounting Pronouncements

Recently Issued Accounting Standards

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842), which requires the recognition of assets and liabilities arising from lease transactions on the balance sheet and will also require significant additional disclosures about the amount, timing, and uncertainty of cash flows from leases. Substantially all leases, including current operating leases, will be recognized by lessees on their balance sheet as a lease asset for its right to use the underlying asset and a lease liability for the corresponding lease obligation. The transition approaches available under the new guidance are pending finalization. For public business entities, the standard is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Early application is permitted for all entities. We have commenced our implementation efforts, which have focused on considerations for external consultation and development of a project plan. We are currently evaluating the impact of ASU 2016-02 on our consolidated financial statements and related disclosures, including the increase in the assets and liabilities on our balance sheet, and the impact on our current lease portfolio from both a lessor and lessee perspective. To facilitate this, we are utilizing a comprehensive approach to review our lease portfolio, as well as assessing system requirements and control implications. We believe that we have sufficient time and resources to complete our implementation efforts no later than the first quarter of fiscal 2019.

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

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

Note 2 - Revenue from Contracts with Customers

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

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

Product Revenue

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

Identify the performance obligations in the contract - For each contract, we consider the promise to transfer products, each of which is distinct, to be the identified performance obligations.

Determine the transaction price - In determining the transaction price, we evaluate whether the price is subject to refund or adjustment to determine the net consideration to which we expect to be entitled. As our standard payment

terms are less than one year, we have elected to apply the practical expedient under ASC 606-10-32-18 to not assess whether a contract has a significant financing component.

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

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

Allocate the transaction price to each performance obligation in the contract - Because our product revenue contracts generally include the delivery of a certain quantity of semiconductors as the single performance obligation, there is no allocation of revenue required across distinct performance obligations. However, we frequently receive orders for products to be delivered over multiple dates that may extend across several reporting periods. We invoice for each delivery upon shipment and recognize revenues for each distinct product delivered, assuming transfer of control has occurred. Payment term for invoices are generally 30 to 60 days.

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

Licensing and Services Revenue

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

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

Determine the transaction price - Our HDMI and MHL standards revenue, as well as certain IP licenses, include variable consideration in the form of usage-based royalties. We apply the provisions of ASC 606-10-55-65 in accounting for these types of arrangements, whereby we do not include estimated royalties in the transaction price at the origination of the contract but rather recognize royalty revenue as usage occurs.

HDMI royalty revenue is determined by a contractual allocation formula agreed to by the Founders of the HDMI consortium. The contractual allocation formula is subject to periodic adjustment, generally every three years. The most recent agreement expired on December 31, 2016 and a new agreement has not yet been entered into covering the period beginning January 1, 2017. While a new royalty sharing agreement is being negotiated with the other Founders of the HDMI consortium, the HDMI agent is unable to distribute the majority of the royalties collected to the Founders. We are recording revenue based on our estimated share of the royalties. This estimate will be adjusted once the Founders finalize the agreement.

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

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

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Impact on Financial Statements

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

Consolidated Statement of Operations	Three months ended March 31, 2018		
(In thousands, except per share data)	As reported under new standard	Adjustments	Pro forma as if previous standard was in effect
Product revenue	95,109	(8,265)	86,844
Licensing and services revenue	3,514	(1,212)	2,302
Cost of product revenue	42,102	(3,819)	38,283
Net loss	(5,952)	(5,658)	(11,610)
Net loss per share, basic and diluted	(0.05)	(0.04)	(0.09)

Consolidated Balance Sheets	As of March 31, 2018		
(In thousands)	As reported under new standard	Adjustments	Pro forma as if previous standard was in effect
Accounts receivable, net of allowance for doubtful accounts	65,779	15,567	81,346
Inventories	77,917	(808)	77,109
Prepaid expenses and other current assets	25,405	(9,102)	16,303
Total assets	644,833	5,657	650,490
Accounts payable and accrued expenses (includes restructuring)	55,274	43	55,317
Deferred income and allowances on sales to distributors	—	38,673	38,673
Accumulated deficit	(456,413)	(33,059)	(489,472)
Total liabilities and stockholders' equity	644,833	5,657	650,490

Consolidated Statement of Cash Flows	Three months ended March 31, 2018		
(In thousands)	As reported under new	Adjustments	Pro forma as if previous

	standard		standard was in effect
Cash flows from operating activities:			
Net loss	(5,952)	(5,658)	(11,610)
Accounts receivable, net	(8,867)	(17,375)	(26,242)
Inventories	2,356	438	2,794
Prepaid expenses and other assets	(3,253)	1,587	(1,666)
Accounts payable and accrued expenses (includes restructuring)	1,567	(415)	1,152
Deferred income and allowances on sales to distributors	—	21,423	21,423

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

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Other matters

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

Under the practical expedient provided by ASC 340-40-25-4, we generally expense sales commissions when incurred because the amortization period would have been less than one year. We record these costs within selling, general and administrative expenses.

Substantially all of our performance obligations are satisfied within twelve months. Accordingly, under the optional exemption provided by ASC 606-10-50-14, we do not disclose revenues allocated to future performance obligations of partially completed contracts.

We do not have any material contract liabilities recorded as of March 31, 2018. Contracts assets of $9.1 million relate to our rights to consideration for licenses and royalties due to us as a member of the HDMI consortium, with collection dependent on events other than the passage of time, such as collection of licenses and royalties from customers by the HDMI licensing agent and the finalization of a new royalty sharing agreement. The contract assets are classified as Prepaid expenses and other current assets, and they are transferred to receivables when the rights become unconditional. During the quarter ended March 31, 2018, we recorded an additional $1.6 million of contract asset.

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	
(In thousands)	March 31, 2018	April 1, 2017 *
Product revenue - Distributors	85,957	74,080
Product revenue - Direct	9,152	18,589
Licensing and services revenue	3,514	11,918
Total revenue	98,623	104,587

Revenue by Geographical Market	Three Months Ended	
(In thousands)	March 31, 2018	April 1, 2017 *
Asia	71,921	73,458
Europe	12,142	11,080
Americas	14,560	20,049
Total revenue	98,623	104,587

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

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Note 3 - Net Loss per Share

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

A summary of basic and diluted net loss per share is presented in the following table:

(in thousands, except per share data)	Three Months Ended March 31, 2018	April 1, 2017
Basic and diluted net loss	$(5,952)	$(7,275)
Shares used in basic and diluted net loss per share	124,076	121,800
Basic and diluted net loss per share	$(0.05)	$(0.06)

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

(in thousands)	Three Months Ended March 31, 2018	April 1, 2017
Stock options, RSUs, and ESPP shares excluded as they are antidilutive	9,424	5,582

Stock options, RSUs, and ESPP shares are considered antidilutive when the aggregate of exercise price and unrecognized stock-based compensation expense are greater than the average market price for our common stock during the period or when the Company is in a net loss position, as the effects would reduce the loss per share. Stock options, RSUs, and ESPP shares that are antidilutive at March 31, 2018 could become dilutive in the future.

Note 4 - Marketable Securities

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

(In thousands)	March 31, 2018	December 30, 2017
Short-term marketable securities:		
Maturing within one year	$ 4,982	$ 4,982
Maturing between one and two years	7,096	—
Total marketable securities	$ 12,078	$ 4,982

Note 5 - Fair Value of Financial Instruments

	Fair value measurements as of	Fair value measurements as of

(In thousands)	March 31, 2018				December 30, 2017			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Short-term marketable securities	$12,078	$12,078	$—	$ —	$4,982	$4,982	$ —	$ —
Foreign currency forward exchange contracts, net	(99)	—	(99)	—	77	—	77	—
Total fair value of financial instruments	$11,979	$12,078	$(99)	$ —	$5,059	$4,982	$ 77	$ —

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

In accordance with ASC 320, "Investments-Debt and Equity Securities," we recorded an unrealized loss of less than $0.1 million during each of the three months ended March 31, 2018 and April 1, 2017 on certain Short-term marketable securities (Level 1 instruments), which have been recorded in Accumulated other comprehensive loss. Future fluctuations in fair value related to these instruments that we deem to be temporary, including any recoveries of previous write-downs, would be recorded to Accumulated other comprehensive loss. If we were to determine in the future that any further decline in fair value is other-than-temporary, we would record an impairment charge, which could have a material adverse effect on our operating results. If we were to liquidate our position in these securities, it is likely that the amount of any future realized gain or loss would be different from the unrealized gain or loss reported in Accumulated other comprehensive loss.

Note 6 - Inventories

(In thousands)	March 31, 2018	December 30, 2017
Work in progress	$ 50,522	$ 49,642
Finished goods	27,395	30,261
Total inventories	$ 77,917	$ 79,903

Note 7 - Intangible Assets

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

We monitor the carrying value of our intangible assets for potential impairment and test the recoverability of such assets annually during the fourth quarter and whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. When we are required to determine the fair value of intangible assets other than goodwill, we use the income approach. We start with a forecast of all expected net cash flows associated with the asset and then apply a discount rate to arrive at fair value. No impairment charges related to intangible assets were recorded for the first three months of either fiscal 2018 or fiscal 2017 as no indicators of impairment were present.

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

On our Consolidated Balance Sheets at March 31, 2018 and December 30, 2017, Intangible assets, net are shown net of accumulated amortization of $106.1 million and $100.3 million, respectively.

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

(In thousands)	Three Months Ended March 31, 2018	April 1, 2017
Research and development	$127	$173
Amortization of acquired intangible assets	5,636	8,514
	$5,763	$8,687

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Note 8 - Cost Method Investment and Collaborative Arrangement

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

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

Through March 31, 2018, we have reduced the value of our investment by approximately $3.7 million. The net balance of our investment included in Other long-term assets in the Consolidated Balance Sheets is approximately $2.3 million.

At March 31, 2018, our maximum exposure to loss as a result of involvement with this VIE totals $3.8 million, which is comprised of the $2.3 million carrying value of our investment plus $1.5 million of prepaid royalties further described in the section below on the related collaborative arrangement.

We assessed this investment for impairment as of March 31, 2018 by applying a fair value analysis using a revenue multiple approach and concluded that no impairment adjustment was necessary during the first quarter of fiscal 2018. Approximately $0.3 million of impairment of a cost method investment is included in Other income (expense), net on our Consolidated Statements of Operations for the three months ended April 1, 2017.

Collaborative Arrangement

Concurrent with the initiation of the investment discussed above, we entered into a collaborative arrangement with the investee during fiscal 2015. Under this arrangement, the parties undertook the development of certain fast, multi-touch sensing devices for touch screen controller applications. The new development and licensing agreements we entered into in 2017 specified the transfer of certain Intellectual Property ("IP") from the investee to us, payment of royalties from us to the investee and from investee to us for future sales of co-developed products, as well as an agreement to perform certain services for each other at no charge. We will also make quarterly payments to the investee. These will be automatically credited against any future revenue share amount owed to investee and will be accounted for as prepaid royalties under ASC 340-10-05-05. In the first quarter of fiscal 2018, we made a quarterly payment of $0.9 million. As of March 31, 2018, expected future royalty prepayments are as follows:

Fiscal year	(in thousands)
2018 (remaining 9 months)	$ 2,625
2019	$ 5,000

At March 31, 2018, royalties prepaid to the investee total $1.5 million. Of this amount, approximately $0.2 million are included in Prepaid expenses and other current assets, and approximately $1.3 million are included in Other long-term assets in our Consolidated Balance Sheets. There is no liability related to the future payments, as the agreement is cancelable.

Note 9 - Accounts Payable and Accrued Expenses

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

(In thousands)	March 31, 2018	December 30, 2017
Trade accounts payable	$ 35,477	$ 35,350
Deferred rent	3,835	3,834
Liability for non-cancelable contracts	3,596	4,531
Other accrued expenses	12,366	10,690
Total accounts payable and accrued expenses	$ 55,274	$ 54,405

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Note 10 - Changes in Stockholders' Equity and Accumulated Other Comprehensive Loss

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

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

Note 11 - Income Taxes

For the three months ended March 31, 2018 and April 1, 2017, we recorded an income tax provision of approximately $0.6 million and $0.5 million, respectively. The income tax provisions for the three months ended March 31, 2018 and April 1, 2017 represent tax at the federal, state, and foreign statutory tax rates adjusted for withholding taxes, changes in uncertain tax positions, changes in the U.S. valuation allowance, as well as other non-deductible items in the United States and foreign jurisdictions. The difference between the U.S. federal statutory tax rate of 21% and our effective tax rate for the three months ended March 31, 2018 results from an increase in the valuation allowance that offsets expected tax benefit in the United States, foreign rate differential and withholding taxes, zero tax rate in Bermuda which results in no tax benefit for the pretax loss in Bermuda, and discrete benefit from the release of uncertain tax positions.

Through March 31, 2018, we continued to evaluate the valuation allowance position in the United States and concluded we should maintain a valuation allowance against the net federal and state deferred tax assets. We will continue to evaluate both positive and negative evidence in future periods to determine if more deferred tax assets should be recognized. We don't have a valuation allowance in any foreign jurisdictions as it has been concluded it is more likely than not that we will realize the net deferred tax assets in future periods.

We are subject to federal and state income tax as well as income tax in the various foreign jurisdictions in which we operate. Additionally, the years that remain subject to examination are 2014 for federal income taxes, 2013 for state income taxes, and 2011 for foreign income taxes, including years ending thereafter. However, to the extent allowed by law, the tax authorities may have the right to examine prior periods where net operating losses or tax credits were generated and carried forward, and make adjustments up to the amount of the net operating losses or credit carryforward amount.

Our income tax returns are currently under examination in China for 2014 through 2016, in the Philippines for 2016, and in the Philippines for a Philippines-based branch of our Singapore subsidiary for 2013 through 2017. We are not under examination in any other jurisdiction.

We believe that it is reasonably possible that $1.8 million of unrecognized tax benefits and $0.1 million of associated interest and penalties could be recognized during the next twelve months. The $1.9 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.

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

Our liability for uncertain tax positions (including penalties and interest) was $26.9 million at both March 31, 2018 and December 30, 2017 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 $24.6 million is netted against deferred tax assets.

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

U.S. tax reform required a deemed repatriation of deferred foreign earnings as of December 30, 2017 and no future U.S. taxes should be due on these earnings because of enactment of a 100% dividends received deduction. At December 30, 2017, we had no impact from this transition tax due to negative post-1986 earnings and profits. Foreign earnings may be subject to withholding taxes if they are distributed and repatriated to Lattice in the United States.

In March 2018, the FASB issued ASU 2018-05, Income Taxes (Topic 740): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118 ("SAB 118"). The SEC issued SAB 118 on December 22, 2017 to address the situation where an SEC reporting company did not have all the necessary information available or analyzed to complete their accounting for the income tax effects of the 2017 Tax Act in the period of enactment. Due to the lack of authoritative guidance issued, complexity, and enactment timing of the 2017 Tax Act, we made a reasonable estimate of the income tax effect of the deemed repatriation of deferred foreign earnings. We may refine this as additional guidance, clarification, and analysis is available. Any changes to our estimate will be reflected in continuing operations in the period the amounts are determined and within the “measurement period” allowed under SAB 118. As of March 31, 2018, we have not completed our accounting for the tax effect of the 2017 Tax Act, and we have made no change to the provisional amounts recorded at December 30, 2017.

We are not currently paying U.S. federal income taxes and do not expect to pay such taxes until we fully utilize our tax NOL and credit carryforwards. We expect to pay a nominal amount of state income tax. We are paying foreign income and withholding taxes, which are reflected in income tax expense 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 12 - Restructuring

In March 2015, our Board of Directors approved an internal restructuring plan (the "March 2015 Plan"), in connection with our acquisition of Silicon Image. The March 2015 Plan was designed to realize synergies from the acquisition by eliminating redundancies created as a result of combining the two companies. This included reductions in our worldwide workforce, consolidation of facilities, and cancellation of software contracts and engineering tools. The March 2015 Plan is substantially complete subject to certain remaining expected costs that we do not expect to be material and any changes in sublease assumptions should they occur, which we will expense as incurred. Under this plan, no expense and approximately $0.3 million of expense was incurred during the three months ended March 31, 2018 and April 1, 2017, respectively. Approximately $20.5 million of total expense has been incurred through March 31, 2018 under the March 2015 Plan, and we believe this amount approximates the total costs under the plan.

In September 2015, we implemented a further reduction of our worldwide workforce (the "September 2015 Reduction") separate from the March 2015 Plan. The September 2015 Reduction was designed to resize the company in line with the market environment and to better balance our workforce with the long-term strategic needs of our business. The September 2015 Reduction is substantially complete subject to certain remaining expected costs that we do not expect to be material, which we will expense as incurred. Under this reduction, no expense and approximately $0.2 million of credit was incurred during the three months ended March 31, 2018 and April 1, 2017, respectively. Approximately $7.2 million of total expense has been incurred through March 31, 2018 under the September 2015 Reduction, and we believe this amount approximates the total costs under the plan.

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In June 2017, our Board of Directors approved an additional internal restructuring plan (the "June 2017 Plan"), which included the sale of 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business, a worldwide workforce reduction, and an initiative to reduce our infrastructure costs. These actions are part of an overall plan to achieve financial targets and to enhance our financial and competitive position by better aligning our revenue and operating expenses. Under this plan, approximately $1.0 million of expense was incurred during the three months ended March 31, 2018. Approximately $9.0 million of total expense has been incurred through March 31, 2018 under the June 2017 Plan, and we expect the total cost to be approximately $8.0 million to $12.0 million and to be substantially completed by the end of the fourth quarter of fiscal 2018.

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

(In thousands)	Severance & related *	Lease Termination	Software Contracts & Engineering Tools **	Other	Total
Balance at December 31, 2016	$ 801	$ 1,036	$ 25	$ 12	$ 1,874
Restructuring charges	(248)	63	—	251	66
Costs paid or otherwise settled	(52)	(1,049)	(25)	(234)	(1,360)
Balance at April 1, 2017	$ 501	$ 50	$ —	$ 29	$ 580
Balance at December 30, 2017	$ 1,192	$ 870	$ 360	$ 25	$ 2,447
Restructuring charges	241	13	738	37	1,029
Costs paid or otherwise settled	(908)	(85)	(700)	(31)	(1,724)
Balance at March 31, 2018	$ 525	$ 798	$ 398	$ 31	$ 1,752

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

Note 13 - Long-Term Debt

On March 10, 2015, we entered into a secured credit agreement (the "Credit Agreement") with Jefferies Finance, LLC and certain other lenders for purposes of funding, in part, our acquisition of Silicon Image. The Credit Agreement provided for a $350 million term loan (the "Term Loan") maturing on March 10, 2021 (the "Term Loan Maturity Date"). We received $346.5 million net of an original issue discount of $3.5 million and we paid debt issuance costs of $8.3 million. The Term Loan bears variable interest equal to the one-month LIBOR, subject to a 1.00% floor, plus a spread of 4.25%. The current effective interest rate on the Term Loan is 6.59%.

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

In the first quarter of fiscal 2018, we made a required quarterly installment payment of $0.9 million. Over the next twelve months, our principal payments will be comprised mainly of regular quarterly installments and a required

annual excess cash flow payment.

While the Credit Agreement does not contain financial covenants, it does contain informational covenants and certain restrictive covenants, including limitations on liens, mergers and consolidations, sales of assets, payment of dividends, and indebtedness. We were in compliance with all such covenants in all material respects at March 31, 2018.

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

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

(In thousands)	March 31, 2018	December 30, 2017
Principal amount	$305,917	$ 306,791
Unamortized original issue discount and debt costs	(5,109)	(5,616)
Less: Current portion of long-term debt	(1,813)	(1,508)
Long-term debt	$298,995	$ 299,667

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

(In thousands)	Three Months Ended	
	March 31, 2018	April 1, 2017
Contractual interest	$4,528	$4,543
Amortization of debt issuance costs and discount	507	933
Total Interest expense related to the Term Loan	$5,035	$5,476

As of March 31, 2018, expected future principal payments on the Term Loan were as follows:

Fiscal year	(in thousands)
2018 (remaining 9 months)	$ 2,884
2019	31,580
2020	54,115
2021	217,338
	$ 305,917

Note 14 - Stock-Based Compensation

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

(In thousands)	Three Months Ended	
	March 31, 2018	April 1, 2017
Cost of products sold	$237	$228
Research and development	1,207	1,850
Selling, general, and administrative	3,356	1,765
Total stock-based compensation	$4,800	$3,843

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

In fiscal years 2015 through 2017, we granted stock options and RSUs with a market condition to certain executives. The options have a two year vesting period and can vest between 0% and 200% of the target amount, based on the

Company's relative Total Shareholder Return ("TSR") when compared to the TSR of a component of companies in the PHLX Semiconductor Sector Index over a two year period. TSR is a measure of stock price appreciation plus dividends paid, if any, in the performance period. The fair values of the options and RSUs were determined and fixed on the date of grant using a lattice-based option-pricing valuation model incorporating a Monte-Carlo simulation and a consideration of the likelihood that we would achieve the market condition.

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The following table summarizes the activity for our stock options with a market condition during the first quarter of fiscal 2018:

(Shares in thousands)	Unvested	Vested	Total
Balance, December 30, 2017	707	83	790
Vested	(31)	31	—
Canceled	31	(10)	21
Balance, March 31, 2018	707	104	811

We incurred stock compensation expense related to these market condition awards of approximately $0.3 million and $0.2 million in the first quarter of fiscal 2018 and the first quarter of fiscal 2017, respectively, which is recorded as a component of total stock-based compensation expense.

Note 15 - Contingencies

Legal Matters

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

Other Matters

We maintain certain Value-Added Tax ("VAT") benefits derived from our research and development operations that require filing tax exempt status documentation with local taxing authorities. In relation to one of our Chinese legal entities, we are undergoing an audit of this documentation as of March 31, 2018. This audit may or may not result in favorable or unfavorable findings. Due to the uncertainty in both the outcome and the estimated range of any findings, no liability has been accrued as of March 31, 2018. We believe the findings would not have a material impact on our Consolidated Financial Statements and could be in a range from $0 to less than $2 million.

Note 16 - Segment and Geographic Information

Segment Information

As of March 31, 2018, Lattice had one operating segment: the core Lattice business, which includes semiconductor devices, evaluation boards, development hardware, and related intellectual property licensing and sales.

Geographic Information

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

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

(In thousands)	March 31, 2018	December 30, 2017
United States	$ 28,921	$ 30,338

China	3,446	4,632
Philippines	3,237	3,883
Taiwan	1,014	958
Japan	353	313
Other	703	299
Total foreign property and equipment, net	8,753	10,085
Total property and equipment, net	$ 37,674	$ 40,423

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

Overview

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

Critical Accounting Policies and Use of Estimates

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

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

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

Results of Operations

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

	Three Months Ended			
(In thousands)	March 31, 2018		April 1, 2017	
Revenue	$98,623	100.0 %	$104,587	100.0 %
Gross margin	56,521	57.3	60,832	58.2
Research and development	22,941	23.3	27,389	26.2
Selling, general and administrative	27,043	27.4	23,905	22.9
Amortization of acquired intangible assets	5,636	5.7	8,514	8.1

Restructuring charges	1,029	1.0	66	0.1
Acquisition related charges	667	0.7	1,660	1.6
Loss from operations	$(795)	(0.8)%	$(702)	(0.7)%

We adopted ASC 606, Revenue from Contracts with Customers, on December 31, 2017 using the modified retrospective method. We have not restated any prior financial statements presented. The significant impacts of the new standard were to accelerate the recognition of revenues and related costs on both sales to certain distributors and certain licensing activities. See "Note 2 - Revenue from Contracts with Customers" for further discussion of the impact of the adoption of ASC 606.

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Revenue by End Market

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

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

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

The following are examples of end market applications:

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

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

	Three Months Ended			
(In thousands)	March 31, 2018		April 1, 2017	
Communications and Computing	$28,139	28 %	$30,010	29 %
Mobile and Consumer	26,706	27	31,799	30
Industrial and Automotive	40,264	41	30,860	30
Licensing and Services	3,514	4	11,918	11
Total revenue	$98,623	100%	$104,587	100%

Revenue from the Communications and Computing end market decreased by 6% for the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017, as additional purchases by a certain large customer in Asia in the prior year period did not recur in the current period. This was substantially offset by the ramp up of server platform revenues.

Revenue from the Mobile and Consumer end market decreased 16% for the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017. The decrease was predominately due to a significant decrease in volume for a major mobile handset provider. Sales of the end product have declined steadily from the first quarter of fiscal 2017 through the first quarter of fiscal 2018. This decrease was coupled with declines in revenue from HDMI devices used in Digital Television ("DTV") and Home Theater related products. These declines were partially offset by a resurgence of MHL-related products used in mobile handsets, and by an increase in smart speaker demand volume.

Revenue from the Industrial and Automotive end market increased approximately 30% for the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017 due to strong growth in demand for both robotics and video wall content, and to increases from a broad range of customers in this market.

Revenue from the Licensing and Services end market decreased 71% for the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017. This decrease was predominantly due to revenue from a patent sale in the first quarter of fiscal 2017 that did not recur in the current period, and by the absence of revenue from Simplay Labs testing activities after the sale of that business unit at the end of the third quarter of fiscal 2017. These decreases are partially offset by HDMI royalties that we recognized as revenue in the first quarter of fiscal 2018 under ASC 606 but were not able to recognize in the first quarter of fiscal 2017 under the previous guidance.

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HDMI royalties are considered variable consideration under the new revenue standard and recognized as royalty revenue as usage occurs. While a new royalty sharing agreement is being negotiated with the other Founders of the HDMI consortium, we are estimating our share of royalty revenues under an anticipated new agreement. Before the HDMI royalty sharing agreement is signed, we estimate that we will recognize $1 million to $2 million of additional licensing and services revenue every quarter under ASC 606 that we would not have recognized under previous guidance. Once the HDMI royalty sharing agreement is signed, ongoing fiscal 2018 HDMI royalty revenue recognition under both ASC 606 and previous guidance will be in sync. Under ASC 606, we have already recognized an estimated $6.6 million of previously unrecognized HDMI royalty revenues for fiscal 2017 as a cumulative effect adjustment through a reduction to Accumulated deficit on December 31, 2017 and will not recognize these as fiscal 2018 revenues upon agreement signing as we would have under previous guidance. Even though our fiscal 2018 revenues will not increase with the signing of the agreement, we expect to receive additional cash in 2018 related to these 2017 revenues.

Adoption of ASC 606 increased our revenues for the three months ended March 31, 2018 by $9.5 million. Of this amount, $8.3 million was due to the acceleration of revenue recognition on sales to certain distributors, with $1.5 million attributed to Communications and Computing, $4.8 million attributed to Mobile and Consumer, and $2.0 million attributed to Industrial and Automotive. An additional $1.2 million was due to the acceleration of revenue recognition on certain licensing activities and is attributed to Licensing and Services.

Revenue by Geography

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

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

	Three Months Ended			
(In thousands)	March 31, 2018		April 1, 2017	
Asia	$71,921	73 %	$73,458	70 %
Europe	12,142	12	11,080	11
Americas	14,560	15	20,049	19
Total revenue	$98,623	100%	$104,587	100%

Revenue in Asia decreased 2% for the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017. Asia revenue is heavily affected by revenue from both the Mobile and Consumer and the Communications and Computing end markets. The decrease was predominately due to a significant decrease in volume for a major mobile handset provider. Sales of the end product have declined steadily from the first quarter of fiscal 2017 through the first quarter of fiscal 2018. For the first quarter of fiscal 2018 relative to the first quarter of fiscal 2017, the Mobile and Consumer end market also saw decreased revenue from DTV, Home Theater, and related devices throughout Asia and by handset content revenues in China and Taiwan. In the Communications and Computing end market, Asia revenue decreased due to reductions from our largest telecommunications customer in the region.

Effective April 17, 2018, we are restricted from selling to ZTE Kangzun Telecom Co. Ltd. (“ZTE”) due to sanctions imposed by the United States Department of Commerce. In the past we sold products to ZTE and had anticipated doing so throughout fiscal 2018. We believe that this will not have a material effect on either our total revenue or our revenue in Asia, as revenue from ZTE accounted for less than 3% of our total revenue in the first quarter of fiscal 2018.

Revenue in Europe increased 10% for the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017 as the region is showing renewed growth in the broad market, especially in the Industrial end market.

Revenue from the Americas decreased 27% for the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017 due to a patent sale that occurred in the first quarter of fiscal 2017 but did not recur in the first quarter of fiscal 2018. This was partially offset by other royalty revenue and broad market growth in the region.

Adoption of ASC 606 increased our revenues for the three months ended March 31, 2018 by $9.5 million. Of this amount, $8.3 million was due to the acceleration of revenue recognition on sales to certain distributors with $7.7 million attributed to Asia, a $0.4 million decrease attributed to Europe, and $1.0 million attributed to the Americas. An additional $1.2 million was due to the acceleration of revenue recognition on certain licensing activities and is attributed to the Americas.

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Revenue from End Customers

Our top five end customers constituted approximately 16% of our revenue for the first quarter of fiscal 2018, compared to approximately 37% for the first quarter of fiscal 2017.

Our largest end customer accounted for approximately 4% of total revenue in the first quarter of fiscal 2018. Our largest end customer accounted for approximately 12% of total revenue in the first quarter of fiscal 2017. No other customers accounted for more than 10% of total revenue during these periods.

Under ASC 606, we did not have enough information to assign end customers to approximately $8.3 million of revenue recognized for the three months ended March 31, 2018 on shipments to distributors that have not sold through to end customers.

Revenue from Distributors

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

	% of Total Revenue		
	Three Months Ended		
	March 31, 2018	April 1, 2017	
Arrow Electronics Inc.	30%	21	%
Weikeng Group	26	27	
All others	31	23	
All distributors *	87%	71	%

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

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

The most significant impact of the adoption of ASC 606 was to accelerate the timing of revenue recognition on product shipments to most of our distributors, resulting in an additional $8.3 million of revenue in the three months ended March 31, 2018. Assuming all other revenue recognition criteria have been met, the new guidance requires us to recognize revenue and costs relating to such sales upon shipment to the distributor - subject to reductions for estimated reserves for price adjustments and returns - rather than upon the ultimate sale by the distributor to its end customer, as was our previous practice. The impact of this change will depend primarily on the level of inventory held by distributors at the beginning and end of each period. To the extent these inventory levels fluctuate significantly, revenue under the new standard could be materially different than that under the previous standard. We anticipate the adoption of the new standard to increase revenue recognized from distributors in the $5 million to $10 million range in 2018 compared to revenue recognized from distributors under the previous standard in 2017.

Gross Margin

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

Three Months Ended

(In thousands)	March 31, 2018		April 1, 2017	
Gross margin	$56,521		$60,832	
Percentage of net revenue	57.3	%	58.2	%
Product gross margin %	55.7	%	55.1	%
Licensing and services gross margin %	100.0	%	82.0	%

For the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017, gross margin decreased by 0.9 percentage points. This decline was primarily due to lower high-margin IP and License revenue in the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017. Licensing and services accounted for approximately 4% of total revenue in the first quarter of fiscal 2018 compared to approximately 11% in the first quarter of fiscal 2017.

The primary contributor to the 0.6 percentage point increase in product gross margin in the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017 was a change in overall sales mix, with decreased revenue from the lower margin consumer end market. The adoption of ASC 606 did not significantly change the product gross margin percentage.

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The primary contributor to the 18.0 percentage point increase in licensing and services gross margin in the first quarter of fiscal 2018 compared to the first quarter of fiscal 2017 was the $10.0 million recognized as revenue in the first quarter of fiscal 2017 on receipt of the first installment from a patent sale in that period. The costs associated with the patent sale, primarily the net book value of the patents acquired in our acquisition of Silicon Image, were greater than usual for this category and had a substantial impact on licensing and services gross margin. The adoption of ASC 606 is not expected to have any impact on the cost and gross margin percentage of licensing and services.

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

Operating Expenses

Research and Development Expense

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

(In thousands)	Three Months Ended March 31, 2018	Three Months Ended April 1, 2017	% change
Research and development	$22,941	$27,389	(16)
Percentage of revenue	23.3 %	26.2 %	
Mask costs included in Research and development	$486	$163	+100