

LATTICE SEMICONDUCTOR CORP

Form 10-K

March 14, 2018

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UNITED STATES
SECURITIES AND
EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K
(Mark One)

ANNUAL
REPORT
PURSUANT
TO SECTION
13 OR 15(d)
OF THE
SECURITIES
EXCHANGE
ACT OF 1934
FOR THE
FISCAL
YEAR
ENDED
DECEMBER
30, 2017
or
TRANSITION
REPORT
PURSUANT
TO SECTION
13 OR 15(d)
OF THE
SECURITIES
EXCHANGE
ACT OF 1934
FOR THE
TRANSITION
PERIOD
FROM

TO

Commission file number: 000-18032

LATTICE SEMICONDUCTOR CORPORATION

(Exact name of registrant as specified in its charter)

Delaware

(State of Incorporation)

93-0835214

(I.R.S. Employer Identification Number)

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111 SW Fifth Ave, Ste 700, Portland, OR 97204
(Address of principal executive offices) (Zip Code)
Registrant's telephone number, including area code: (503) 268-8000

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

(Title of Class)	(Name of each exchange on which registered)
Common Stock, \$.01 par value	NASDAQ Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

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

Indicate by check mark whether the registrant has submitted electronically 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 that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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 Non-accelerated filer
Smaller reporting company Emerging growth company

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No
Aggregate market value of voting stock held by non-affiliates of the registrant as of July 1, 2017 \$613,585,307
Number of shares of common stock outstanding as of March 2, 2018 124,210,928

DOCUMENTS INCORPORATED BY REFERENCE

The information required by Part III of this Report, to the extent not set forth herein, is incorporated herein by reference from the registrant's definitive proxy statement relating to the 2018 Annual Meeting of Stockholders, which definitive proxy statement shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this Report relates.

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Forward-Looking Statements

This Annual Report on Form 10-K 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 adjustments and our revenue in future periods; the effects of product, end market and customer mix on our gross margin in the future; our strategies and beliefs regarding the markets we serve or may serve; 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 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 working capital needs through at least the next 12 months; our strategies and beliefs regarding the markets we serve or may serve; growth opportunities and growth in markets we may serve; 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; acceptance of our devices; our continued participation in consortia that develop and promote the High-Definition Multimedia Interface ("HDMI"), Mobile High-Definition Link ("MHL") and WirelessHD specifications, and our participation in other standard setting initiatives; 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 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; the impact of our global tax structure and expectations regarding taxes and tax adjustments; our conclusion that we should maintain a valuation allowance against certain tax assets; our belief that we may recognize certain tax benefits during the next twelve months; our ability to forecast uncertain tax positions; the effect of tax reform on our financial results; 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 and facilities, our ability to meet our operating and capital requirements and obligations; and our ability to implement 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 the Mobile and Consumer and Communications and Computing end markets, particularly as it relates to the concentration of our sales in the Asia Pacific region, market acceptance and demand for our 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 I of this Annual Report on Form 10-K.

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

Item 1. Business

Overview

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

We enable our customers to quickly and easily develop 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 historic focus was on programmable logic devices (“PLDs”). In 2011, we made the strategic decision to competitively differentiate from other established programmable logic companies with ultra-low power and ultra-small sized field programmable gate array (“FPGA”) solutions, a type of PLD. As a result, we acquired a leader in this technology, SiliconBlue Technologies, Inc. In 2015, we extended our capabilities beyond FPGAs with the acquisition of Silicon Image, Inc. (“Silicon Image”) and its portfolio of standards-driven video connectivity application specific standard products (“ASSPs”), 60 GHz mmWave devices, and associated intellectual property (“IP”). Together, the control and connect features of our FPGAs and these acquired technologies form a strong base business from which we are able to offer a variety of solutions to multiple established and emerging markets and customers.

We believe the emerging trend of computing in smart devices at the network edge is an opportunity for Lattice. These devices often act independently and need to make instantaneous, independent decisions. As such, they need their own computing and learning capabilities to perform functions like face detection, image recognition, and video analytics — capabilities that we have today through the acquisition of Silicon Image. To accomplish these functions, devices require high levels of processing power, speed, and memory, the need to operate with low power consumption, and the ability to integrate complex functionality into a highly compact footprint. These requirements align to the capabilities of our FPGA devices. Our low power, small form factor silicon, and the design flexibility of our FPGAs puts us in a unique position to meet the growing edge-computing needs.

Our traditional FPGA devices provide us with a strong, growing base of ‘control and connect’ technologies. We believe growth in the edge connectivity and edge computing arenas will allow us to increase our market share and capabilities.

Our Markets and Customers

We sell globally in three markets groups: Mobile and Consumer, Communications and Computing, and Industrial and Automotive.

In the Mobile and Consumer Market, you can find our solutions making consumer products smarter and thinner, including: smartphones, tablets and e-readers, wearables, accessories such as chargers and docks, smart home devices, Virtual Reality (“VR”) headsets, Ultra High-Definition (“UHD”) TVs, digital SLR cameras, drones, and other connected devices.

Our Mobile and Consumer customers are driven by the need to deliver richer and more responsive experiences. They typically require:

• More intelligence and computing power. Products need to be always-on and always-aware.

- Longer battery lives for handheld devices and reduced energy consumption for plugged-in devices.
- Real-time transmission of higher resolution video content on larger screen sizes.
- Fast design cycles. Products must be quickly and easily differentiated.
- Smaller form factors. Products need to lay flatter on the wall or fit more easily in people's pockets.
- Various levels of video processing and analytics.

Lattice solutions help solve these challenges with the following products and services:

FPGAs bring multiple benefits to our customers. An FPGA's parallel architecture enables faster processing than competing devices, such as processors, allowing for a user experience with shorter pauses and fewer delays. Our FPGAs are among the lowest power in the industry, enabling the application processor and other high power components to remain dormant longer, resulting in longer battery life. Finally, with some of the industry's smallest packages, we enable thinner end products.

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mmWave Devices such as our SiBEAM Snap and WirelessHD products simplify connectivity. SiBEAM Snap is a wireless connection technology that can transfer a high definition movie to a mobile device in seconds while eliminating the connector port. WirelessHD products enable laptops, projectors, accessories, and other consumer products to communicate wirelessly at very high speeds.

A full suite of standards-based HDMI and MHL Video Connectivity ASSPs enable the immersive audio-visual experience that consumers demand.

Intellectual Property Licensing enables customers who wish to develop a proprietary solution to use our proven technology.

Our proprietary solutions help our customers get their products to market faster than typical development cycles. With re-programmability and flexibility, our FPGAs inherently allow our customers to have quicker product development. Our deep engagement with industry standards bodies gives us an intimate knowledge of various video technologies and the ability to get our customers latest and greatest products to market faster. Our mmWave technology is at the forefront of high speed, high bandwidth wireless connectivity innovation. All of Lattice's solution time-to-market advantages are critical given shorter product life cycles and higher competition in our customers' end markets.

In the Communications and Computing Market, our solutions play key roles in data center systems such as servers, heterogeneous network ("HetNet") small cell base stations, network backhaul, wired access aggregation, and other related applications.

Our Communications and Computing customers need to "connect anything to everything," at ever-increasing data rates. As data center servers become smaller and power costs become more dominant, there is a growing requirement for smaller form factors with lower installed and operational costs. Lattice's low cost per look up table, and high I/O count enable customers to use fewer devices in much smaller spaces.

Additionally, they need simplified control logic, enhanced security, and rigorous power and thermal management. Networks typically require progressively higher bandwidth and increased reliability as more data is demanded by consumer and other connected devices. Bandwidth demands are also driven by the rapid transition to a cloud-based infrastructure.

As wireless cells become more compact without fans, there is a growing requirement for smaller form factors optimized for low power consumption.

To be able to connect high speed fiber to homes, campuses or city infrastructures, mmWave products enable the lowest cost, highest throughput solutions.

We help customers solve these problems with the following products:

FPGAs optimized for Input-Output (I/O) expansion, low cost look up tables, hardware acceleration, hardware management, and affordability. Our FPGAs consume very low power, which reduces operating costs. Their small form factor enables higher functional density in less space. Finally, our FPGAs are I/O rich, which allows for more connections with system application specific integrated circuits (ASICs) and ASSPs. Our programmable mixed signal devices make power and thermal management easy and reliable.

mmWave transceivers feature high-integration, low power design, and internal / external antenna options. Our beam-steering technology makes point-to-point links smaller, cheaper, more reliable, lower power and easier to install, enabling backhaul at "wireless fiber" data rates.

Examples of our products enabling intelligent automation in the Industrial and Automotive Market include machine vision, robotics, factory automation, industrial handhelds, surveillance cameras and DVRs, digital signage, driver assistance, automotive infotainment, servers, and data center networks.

Our Industrial and Automotive customers face numerous challenges:

-

As smart factories develop, sensors are proliferating and machine vision is becoming higher definition, in turn requiring increasing amounts of data to be gathered, connected, and processed.

Cars, trucks, and trains are also becoming smarter and more connected. Drivers and passengers are demanding better in-cabin experiences including entertainment, diagnostics, and enhanced safety — often involving multiple displays, cameras, and sensors.

In addition, as factories and automotive continue their evolution of computerization, lower power, faster time to design in and market, along with lower costs are becoming more of the normal.

Our product portfolio helps solve these challenges with the following products and services:

Our small-sized, low-power FPGAs not only provide the I/O expansion, bridging, connectivity, and processing inherent in FPGAs to the full Industrial Market, but they also form the backbone of several integrated solutions, including complete HD camera and DVR solutions on a single FPGA device and Human-Machine Interfaces (HMI) on a chip.

Performance-tested and regulatory-approved mmWave modules greatly reduce latency response and the complexity of adding high-performance wireless video capabilities to displays, without the wires that clutter a factory floor or medical suite.

Automotive qualified MHL / HDMI Video Connectivity ASSPs allow consumers to stream UHD video from their mobile phones to their in-car entertainment system, delivering the ultimate connected car experience.

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Our Products, Services, and Competition

We deliver three types of semiconductor devices to help solve our customers' problems: PLDs, Video Connectivity ASSPs, and mmWave devices. We also serve our customers with IP licensing and various other services.

Field Programmable Gate Arrays (“FPGAs”)

FPGAs are regular arrays of logic that can be custom-configured by the user through software. This programmability allows our customers flexibility and reduced time to market while allowing us to offer the chips to many different customers in many different markets. Five product family lines anchor our FPGA offerings:

The ECP families are our “Connectivity & Acceleration FPGAs.” They offer customers the lowest cost per gate, Digital Signal Processing (DSP) capability, and Serialize-Deserialize (SerDes) connectivity. ECP devices are optimized for the Communications and Computing market but also find significant use in the Industrial and Automotive market.

The MachXO families are known as “Bridging and Expansion FPGAs.” They are control oriented and offer the lowest cost per I/O, along with the lowest cost per look up table. MachXO families are widely used across our three primary target markets: Communications and Computing, Industrial and Automotive, and Mobile and Consumer.

iCE40 families are known as the “World’s Smallest FPGAs.” Their small size and ultra-low power make them the optimal products for customizing Consumer mobile and Industrial handheld products. The iCE40 UltraLite was named “Digital Semiconductor Product of the Year” by the 2015 Elektra European Electronics Industry Awards. In 2016, we released the latest member of the family, iCE40 UltraPlus, focused on smart phone and IoT edge devices.

CrossLink was introduced in 2016 as the world’s first video “pASSP” (programmable Application Specific Standard Part). CrossLink combines the power and speed benefits of hardened video camera and display bridging cores with the flexibility of FPGA fabric. CrossLink was the 2016 recipient of the “Editor’s Choice Award” by EEPW magazine.

Programmable Mixed Signal devices, such as our Platform Manger 2 and L-ASC10 combine programmable digital logic with analog functionality to help customers manage power, thermal, and control planes in real time.

To enable our customers to get to market faster we support the FPGAs with intellectual property cores, reference designs, development kits, and design software.

Competition for our FPGAs is fragmented.

While ASICs, ASSPs, and microcontrollers have historically dominated high-volume market segments through low cost and reduced power consumption, our FPGAs have become small enough with sufficiently low power consumption that we are now considered by customers in cases where they need the architectural benefits of FPGAs, namely programmability with its accelerated time-to-market and the speed that comes from parallelism. Not only can customers use FPGAs to add new features and support new standards, but if a customer’s design is not working as intended, the customer can quickly change it using the programmability of our FPGAs through software. In contrast, ASICs and ASSPs require time consuming and expensive redesign and fabrication. Against microcontrollers, we differentiate our products with smaller sized packages and higher performance.

Our main FPGA competitors are Xilinx and Intel. Both make FPGAs but are generally focused on the high-density end of the market, making devices that are up to a full order of magnitude larger than ours with the associated increases in power and size. We differentiate from them with ultra-low power and very small sized packages.

Video Connectivity ASSPs

In the Mobile and Consumer market, consumers need to connect many different types of audio-video devices and expect them to work seamlessly together. We refer to these connections as “Video Connectivity.” Industry standards, such as HDMI, MHL, and USB Type-C, ensure that consumers are able to successfully make those connections.

These industry standards support resolutions up to 8K, High Dynamic Range, Deep Color, and HDCP 2.2 content protection. Our Video Connectivity ASSPs implement these standards along with value-added features and allow consumer original equipment manufacturers (OEMs) manufacturers to quickly get feature rich and interoperable products to market.

Our Video Connectivity ASSPs perform many functions, including ensuring interoperability, enhancing picture quality, converting between resolutions, and transmitting / receiving content without the need for additional components. Specific device types include port processors, port controllers, video processors, transmitters, receivers, bridges, and converters. These devices are used in products such as mobile phones, UHD TVs, home theater systems, HDMI cable extenders, automotive infotainment, PCs, accessories, projectors, and monitors.

In general, our Video Connectivity competition includes:

- HDMI or MHL functionality offered in either discrete devices or integrated into system-on-a-chip products. These are offered by a small number of companies.

- In-house semiconductor solutions designed by large consumer electronics OEMs.

- Alternative HD connectivity technologies such as DisplayPort and MiraCast, which are offered by select companies.

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While our competition mainly tries to win with price, we believe that we have an advantage because of our deep engagement with industry standards bodies. This involvement enables us to bring our “standards plus” products and IP to market more quickly and gives our customers confidence that we have the expertise needed to successfully execute.

mmWave Devices

Our mmWave devices and modules allow customers to transfer data and UHD video content wirelessly at gigabit speeds. Built using our proprietary 60 GHz SiBEAM technology, our mmWave transceivers, processors, and antenna arrays are divided into three groups, differentiated by their transmission range:

Gigabit Connector devices or wireless USB “eliminate the connectors on your mobile products.” Built with SiBEAM Snap technology, these devices connect consumer products to deliver up to 12 Gb/s of bi-directional bandwidth for ultra-fast data transfers and are effective across centimeter distances.

Our Gigabit Indoor devices and modules utilizing WiGig “cut the wires in home, office, and factory.” Geared around the Consumer and Industrial Markets these devices deliver “Blu-ray” quality video at 1080p and 4k20 resolutions with 5ms average latency and reach distances measured in meters.

Gigabit Outdoor products provide “wireless fiber for network backhaul.” Gigabit-speed 60 GHz modules and devices address the need for high capacity wireless links in wireless broadband networks, urban LTE small cells and metro Wi-Fi hot spots, and other link applications. Achieving a range of 100’s of meters these devices provide the Communications market with ultra-high speed links for point-to-point connectivity.

Our competition includes a small number of established semiconductor companies that work to create an advantage by bundling mmWave technology into their reference designs and processors. We believe that the depth of our 60 GHz experience enables us to get products to market faster and when combined with advanced features, such as our advanced beam-forming technology, gives us an edge over our competition.

Intellectual Property (IP) Licensing

Lattice has a broad set of technological capabilities and many U.S. and international patents. We generate revenue from our technology portfolio via upfront fees and on-going royalty payments with three sets of activities:

Standard IP Licensing - these activities include our participation in two consortia for the licensing of HDMI and 1. MHL technologies to customers who adopt the technology into their products and voluntarily report their usage and royalties. The royalties are split between consortia members, including us.

IP Core Licensing - some customers need Lattice’s technology for specific functions or features, but for various 2. reasons are not able to use our silicon solutions. In those cases, we may sell them IP cores, which they can integrate into their own ASICs. In contrast to the use of consortia, these licensing activities are generally performed internally.

Patent Monetization - we sell certain patents from our portfolio generally for technology that we are no longer 3. actively developing. The revenue from these sales generally consists of upfront payments and potential future royalties.

Simply Labs

Simply Labs develops performance standards, testing services, development tools, and technologies for Mobile and Consumer product manufacturers. We sold certain of our assets comprising Simply Labs to Invecas, Inc. on September 30, 2017 while maintaining a contractual relationship that includes hosting the personnel engaged in the provision of testing services and related assets in various geographies for a term. By partnering with Simply Labs, manufacturers can reduce the time and cost to market, providing products that are distinguished by reliability and ease of operation while delivering the high-performance HD their customers demand. The products that Simply Labs tests include televisions, A/V receivers, sound bars, set-top boxes, gaming consoles, and media hubs. Simply Labs has

service centers operating in the United States, South Korea, China, and Taiwan. Simplay's service centers provide compliance, interoperability and performance testing.

Research and Development

We place a substantial emphasis on new product development, where return on investment is the key driver, and believe that continued investment in research and development is required to maintain and improve our competitive position. Our product development activities emphasize new proprietary products, advanced packaging, enhancement of existing products and process technologies, improvement of software development tools, development of innovative technology standards, and enhanced services. Research and development activities occur primarily in Hillsboro, Oregon; San Jose, California; Shanghai, China; and Muntinlupa City, Philippines.

Research and development expenses were \$103.4 million in 2017, \$117.5 million in 2016, and \$136.9 million in 2015. The decreases in research and development expense is due mainly to the cost reductions realized from the restructuring actions and integration of operations undertaken since the acquisition of Silicon Image, including headcount reductions, site consolidations, and the sales of assets and business units. We believe that a continued commitment to research and development is essential to maintaining product leadership and providing innovative new product offerings and, therefore, we expect to continue to make significant future investments in research and development.

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Operations

We do not manufacture our own silicon products. We maintain strategic relationships with large, established semiconductor foundries to source our finished silicon wafers. This strategy allows us to focus our internal resources on product and market development, and eliminates the fixed cost of owning and operating semiconductor manufacturing facilities. We are able to take advantage of the ongoing advanced process technology development efforts of semiconductor foundries, and to choose to apply those technologies when they become most economically beneficial to us and to our customers.

Seiko Epson ("Epson") manufactures our 500nm, 350nm, 250nm and 180nm products. Lattice and Fujitsu Limited ("Fujitsu") have entered into agreements pursuant to which Fujitsu manufactures our next generation products on its 130nm, 90nm and 65nm CMOS process technologies, as well as embedded flash memory in these technical nodes. United Microelectronics Corporation ("UMC") manufactures certain of our next generation 40nm products. Taiwan Semiconductor Manufacturing Company Ltd. ("TSMC") manufactures our acquired Silicon Blue and Silicon Image products.

All of our assembly and volume test operations are performed by outside suppliers.

We rely on third party vendors to provide cost-effective and efficient supply chain services. Among other activities, these outsourced services relate to direct sales logistics, including order fulfillment, inventory management and warehousing, and shipment of inventory to third party distributors.

We perform certain test operations as well as reliability and quality assurance processes internally. We have achieved and maintained ISO9001:2015 Quality Management Systems Certification and released a line of products qualified to the AEC-Q100 Reliability Standard.

Wafer Fabrication

We source silicon wafers from our foundry partners, Fujitsu and Epson in Japan, and TSMC and UMC in Taiwan, pursuant to agreements with each company and their respective affiliates. We negotiate wafer volumes, prices and other terms with our foundry partners and their respective affiliates on a periodic basis.

Assembly

After wafer fabrication and initial testing, we ship wafers to independent subcontractors for assembly. During assembly, wafers are separated into individual die and encapsulated in plastic packages. We have qualified two major assembly partners, ASE and Amkor and are second sourced where volume and customer requirements are necessary. All ASE and Amkor manufacturing is in Asia. We negotiate assembly prices, volumes and other terms with our assembly partners and their respective affiliates on a periodic basis.

We currently offer an extensive list of standard products in lead (Pb) free packaging. Our lead-free products meet the European Parliament Directive entitled "Restrictions on the use of Hazardous Substances" ("ROHS"). A select and growing subset of our ROHS compliant products are also offered with a "Halogen Free" material set.

Testing (Sort and Final Test)

We electrically sort test the die on most wafers prior to shipment for assembly. Wafer sort testing is performed mostly by Amkor Japan and we have a second source in KYEC Taiwan. Some legacy products are tested at Unisem, Indonesia.

Following assembly, but prior to customer shipment, each product undergoes final testing and quality assurance procedures. Final testing is performed by ASE and Amkor, our assembly partners in Asia.

Sales and Revenue

We generate revenue by monetizing our technology and patents using two go-to-market strategies.

- Product and Technology Sales involve direct and channel sales of silicon based products with their associated solutions and services.

- Intellectual Property Licensing involves either the license or sale of intellectual property that we have developed, some of which we use in our products.

Seasonality

While we periodically may experience some seasonal trends in the sale of our products, general economic conditions and the cyclical nature of the end markets we serve generally have a greater impact on our business and financial results than seasonal trends.

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Backlog

Our backlog consists of orders from distributors and certain OEMs that require delivery within the next year. Historically, our backlog has not been a predictor of future sales or customer demand for the following reasons:

- Purchase orders, consistent with common industry practices, can generally be revised or canceled up to 30 days before the scheduled delivery date without significant penalty.
- Our backlog for sell-through distributors is valued at list price, which in most cases is substantially higher than the prices ultimately recognized as revenue.
- A sizable portion of our revenue comes from our "turns business," where the product is ordered and delivered within the same quarter.

A portion of our revenue arises from vendor managed inventory arrangements where the timing and volume of customer utilization is difficult to predict.

Sales and Customers

We primarily sell our products to end customers from Lattice Semiconductor Corporation or our wholly-owned subsidiary, Lattice SG Pte. Ltd. We sell both directly and through a network of independent manufacturers' representatives. Additionally, we sell indirectly through independent sell-in (primarily Japan) and sell-through distributors. We also employ a direct sales management and field applications engineering organization to support our end customers and indirect sales resources. Our end customers are primarily original equipment manufacturers ("OEMs") in the Communications and Computing, Mobile and Consumer, and Industrial and Automotive end markets.

We have agreements with 20 manufacturers' representatives in North America. We have established sales channels in over 44 foreign countries and maintain a network of 10 international sales representatives. A substantial portion of our sales are made through distributors.

We provide global technical support to our end customers with engineering staff based at our headquarters, product development centers and selected field sales offices. We maintain numerous domestic and international field sales offices in major metropolitan areas.

Resale of product by sell-through distributors accounted for approximately 66% of our net revenue in fiscal 2017, approximately 61% of our net revenue in fiscal 2016, and approximately 45% of our net revenue in fiscal 2015, and we expect our distributors to generate a significant portion of our revenue in the future. We depend on our distributors to sell our products to end customers, complete order fulfillment, and maintain sufficient inventory of our products. Our distributors also provide technical support and other value-added services to our end customers. We have two global sell-through distributors. We also have regional distribution in Asia, Japan, Israel, and North America, and we sell through three major on-line distributors.

In fiscal years 2017, 2016, and 2015, our revenue was broadly distributed across end markets and end customers, with no individual end customer accounting for more than 10% of the total revenue.

Revenue from foreign sales as a percentage of total revenue was 87%, 88%, and 92%, for fiscal 2017, 2016, and 2015, respectively. We assign revenue to geographies based on customer ship-to address at the point where revenue is recognized. Revenue attributed to China for fiscal 2017 was approximately 50% of total revenue, compared to 44% and 41% in fiscal 2016 and fiscal 2015, respectively (see "Geographic Information" in Note 22 - Segment and Geographic Information to our Consolidated Financial Statements in Part II, Item 8). In the case of sell-in distributors and OEMs, revenue is typically recognized, and geography is assigned, when products are shipped. In the case of

sell-through distributors, revenue is recognized when resale to the end customer occurs and geography is assigned based on the end customer location on the resale reports provided by the distributor. Both foreign and domestic sales are denominated in U.S. dollars.

The composition of our revenue by geography, based on ship-to location, is as follows:

(In thousands)	Year Ended						% Change in	
	December 30, 2017	December 31, 2016	December 30, 2017	December 31, 2016	January 2, 2016	2017	2016	
Asia	\$277,638	72 %	\$305,093	71 %	\$308,534	76 %	(9)	(1)
Europe	44,547	12	59,835	14	55,596	14	(26)	8
Americas	63,776	16	62,126	15	41,836	10	3	48
Total revenue	\$385,961	100%	\$427,054	100%	\$405,966	100%	(10)	5

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Intellectual Property, Patents, and Licensing

Intellectual Property

We seek to protect our products and technologies primarily through patents, trade secrecy measures, copyrights, mask work protection, trademark registrations, licensing restrictions, confidentiality agreements and other approaches designed to protect proprietary information. There can be no assurance that others may not independently develop competitive technology not covered by our intellectual property rights or that measures we take to protect our technology will be effective.

Patents

We hold numerous United States and international patents and have patent applications pending in the United States and internationally. Our current patents will expire at various times between 2018 and 2036, subject to our payment of periodic maintenance fees. There can be no assurance that pending or future patent applications will result in issued patents, or that any issued patents will survive challenges to their validity. Although we believe that our patents have value, there can be no assurance that our patents, or any additional patents that may be issued in the future, will provide meaningful protection from competition. We believe that our success will depend primarily upon the technical expertise, experience, and creativity, and the sales and marketing abilities of our personnel.

Patent and other proprietary rights infringement claims are common in our industry. There can be no assurance that, with respect to any claim made against us, we would be able to successfully defend against the claim or that we could obtain a license that would allow us to use the proprietary rights on terms or under conditions that would not harm our business.

Licenses

We have acquired various licenses from third parties to certain technologies that are implemented in IP cores or embedded in our products. Those licenses support our continuing ability to make and sell these products to our customers. While our various licenses are important to our success, we believe our business as a whole is not materially dependent on any particular license, or group of licenses.

Our Team

As of December 30, 2017, we had 834 full-time employees worldwide. We believe that our future success will depend, in part, on our ability to continue to attract and retain highly skilled technical, sales, and management personnel. None of our employees are represented by a collective bargaining agreement. We have never experienced any work stoppages and consider our employee relations to be good.

Corporate Background

Lattice was incorporated in Oregon in 1983 and reincorporated in Delaware in 1985. Our headquarters is located at 111 SW Fifth Avenue, Suite 700, Portland, Oregon 97204, and our website is www.latticesemi.com. Information contained or referenced on our website is not incorporated by reference into, and does not form a part of, this Annual Report on Form 10-K. Our common stock trades on the NASDAQ Global Select Market under the symbol LSCC.

Reporting Calendar

We report based on a 52 or 53-week fiscal year ending on the Saturday closest to December 31. Our fiscal 2017, 2016, and 2015 were 52-week years that ended December 30, 2017, December 31, 2016, and January 2, 2016, respectively. Our fiscal 2018 will be a 52-week year and will end on December 29, 2018. All references to quarterly or yearly financial results are references to the results for the relevant fiscal period.

Our results for the year ended January 2, 2016 (fiscal 2015) include the results associated with the acquisition of Silicon Image for the approximately 10-month period from March 11, 2015 through January 2, 2016. Results presented for periods prior to fiscal 2015 are those historically reported for Lattice only.

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Available Information

We make available, free of charge through the Investor Relations section of our website at www.latticesemi.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and amendments to those reports and statements as soon as reasonably practicable after such materials are electronically filed with, or furnished to, the SEC. You may also obtain free copies of these materials by contacting our Investor Relations Department at 111 SW Fifth Ave, Ste. 700, Portland, Oregon 97204, telephone (503) 268-8000. Our SEC filings are also available at the SEC's website at www.sec.gov, and they may be read and copied at the SEC's public reference room at 100 F Street NE, Washington, DC 20549. Information on the operation of the Public Reference Room can be obtained by calling the SEC at 1-800-SEC-0330. The content on any website referred to in this filing is not incorporated by reference into this filing unless expressly noted otherwise.

ITEM 1A. Risk Factors

The following risk factors and other information included in this Annual Report should be carefully considered before making an investment decision relating to our common stock. If any of the risks described below occur, our business, financial condition, operating results and cash flows could be materially adversely affected. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations and financial results.

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

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

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

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

Establishing, maintaining and managing multiple foundry relationships requires the investment of management resources as well as additional costs. If we fail to maintain our foundry relationships, or elect or are required to change foundries, we will incur significant costs and manufacturing delays. The success of certain of our next generation

products is dependent upon our ability to successfully partner with Fujitsu, Taiwan Semiconductor, Seiko Epson, and other foundry partners. If for any reason one or more of our foundry partners does not provide its facilities and support for our development efforts, we may be unable to effectively develop new products in a timely manner.

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

We depend on distributors to generate a significant portion of our revenue and complete order fulfillment and any adverse change in our relationship or our distributors' financial health, reduction of selling efforts, or inaccuracy in resale reports could harm our sales or result in misreporting our results.

We depend on our distributors to sell our products to end customers, complete order fulfillment, and maintain sufficient inventory of our products. Our distributors also provide technical support and other value-added services to our end customers. Resales through sell-through distributors accounted for 66% of our total revenue in fiscal 2017, with two distributors accounting for 51% of our total revenue in fiscal 2017.

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

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

Since we have limited ability to forecast inventory levels of our end customers, it is possible that there may be significant build-up of inventories in the distributor channel, with the OEM or the OEM's contract manufacturer. Such a buildup could result in a slowdown in orders, requests for returns from customers, or requests to move out planned shipments. This could adversely affect our revenues and profits. Any failure to manage these challenges could disrupt or reduce sales of our products and unfavorably impact our financial results.

Based on our assessment of the implementation of Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606), we believe the most significant impact of the new standard will be to accelerate the timing of revenue recognition on product shipments to our sell-through distributors. Assuming all other revenue recognition criteria have been met, the new guidance would require 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 is our current practice. The impact of this change will depend primarily on the level of inventory held by sell-through 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 current standard.

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

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

A significant portion of our revenue depends on sales to a limited number of customers. In fiscal 2017, our largest end customer accounted for approximately 7% of our total revenue, and our top five end customers accounted for approximately 26% of our total revenue. If any of these relationships were to diminish, if these customers were to develop their own solutions or adopt alternative solutions or competitors' solutions, or if our relationship with any future customer which accounts for a significant portion of our revenue were to diminish due to these factors, our results could be adversely affected.

While we strive to maintain strong relationships with our customers, their continued use of our products is frequently reevaluated, as certain of our customers' product life cycles are relatively short and they continually develop new products. The selection process for our products to be included in our customers' new products is highly competitive. There are no guarantees that our products will be included in the next generation of products introduced by these customers. For example, one of our largest customers from the second half of 2016 through the first half of 2017 was a major mobile handset provider. The production volume for this mobile handset peaked in the fourth quarter of fiscal 2016, and the associated revenue stream has declined in subsequent quarters as the end product completes its lifecycle.

At this time, there is no guarantee that our products will be included in this provider's next generation handset, nor in any of its other devices. Any significant loss of, or a significant reduction in purchases by, one or more of these customers or their failure to meet their commitments to us, could have an adverse effect on our financial condition and results of operations. If any one or more of our concentrated groups of customers were to experience significantly adverse financial conditions, our financial condition and business could be adversely affected as well.

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

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

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

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

- timely completion and introduction of new product designs;
- ability to generate new design opportunities and design wins, including those which result in sales of significant volume;
- availability of specialized field application engineering resources supporting demand creation and customer adoption of new products;
- ability to utilize advanced manufacturing process technologies;
- achieving acceptable yields and obtaining adequate production capacity from our wafer foundries and assembly and test subcontractors;
- ability to obtain advanced packaging;
- availability of supporting software design tools;
- utilization of predefined IP logic;
- market acceptance of our MHL-enabled and wireless mobile products, and our 60 GHz wireless products;
- customer acceptance of advanced features in our new products;
- availability of competing alternative technologies; and
- market acceptance of our customers' products.

Our product innovation and development efforts may not be successful; our new products, MHL-enabled products, and 60GHz wireless products may not achieve market or customer acceptance; and we may not achieve the necessary volume of production to achieve acceptable cost. Revenue relating to our mature products is expected to decline in the future, which is normal for our product life cycles. As a result, we may be increasingly dependent on revenue derived from our newer products as well as anticipated cost reductions in the manufacture of our current products. We rely on obtaining yield improvements and corresponding cost reductions in the manufacture of existing products and on introducing new products that incorporate advanced features and other price/performance factors that enable us to increase revenues while maintaining acceptable margins. To the extent such cost reductions and new product introductions do not occur in a timely manner, or that our products do not achieve market acceptance or market acceptance at acceptable pricing, our forecasts of future revenue, financial condition, and operating results could be materially adversely affected.

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

In connection with our acquisition of Silicon Image, we entered into a secured Credit Agreement providing for a \$350 million term loan that matures on March 10, 2021. Our obligations under the Credit Agreement are guaranteed by our U.S. subsidiaries. Our obligations include a requirement to pay up to 75% of our excess cash flow toward repayment of the facility. The Credit Agreement also contains certain restrictive covenants, including limitations on liens, mergers and consolidations, sales of assets, payment of dividends, and additional indebtedness. The amount and terms of our indebtedness, as well as our credit rating, could have important consequences, including the following:

we may be more vulnerable to economic downturns, less able to withstand competitive pressures, and less flexible in responding to changing business and economic conditions;

our cash flow from operations may be allocated to the payment of outstanding indebtedness, and not to research and development, operations or business growth;

- we might not generate sufficient cash flow from operations or other sources to enable us to meet our payment obligations under the facility and to fund other liquidity needs;

our ability to make distributions to our stockholders in a sale or liquidation may be limited until any balance on the facility is repaid in full; and

our ability to incur additional debt, including for working capital, acquisitions, or other needs, is more limited.

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

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

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

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

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

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

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

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

our operating results.

General economic conditions and deterioration in the global business environment could have a material adverse effect on our business, operating results, and financial condition.

Adverse economic conditions or our customers' perceptions of the economic environment may negatively affect customer demand for our products and services and result in delayed or decreased spending. Weak global economic conditions in the past have resulted in weak demand for our products in certain geographies and had an adverse impact on our results of operations. If global economic conditions weaken, our business could be harmed due to customers or potential customers reducing or delaying orders. In addition, the inability of customers to obtain credit, the insolvency of one or more customers, or the insolvency of key suppliers could result in sales or production delays. Any of these effects could impact our ability to effectively manage inventory levels and collect receivables, require additional restructuring actions, and decrease our revenue and profitability. Uncertainty about future economic conditions makes it difficult for us to forecast operating results and to make decisions about future investments. Any or all of these factors could adversely affect our financial condition and results of operations in the future.

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

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

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

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

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

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

Any of these factors could adversely affect our financial condition and results of operations in the future.

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

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

provider for inventory management, order fulfillment, and direct sales logistics.

These and other integral business activities outside of the United States are subject to the risks and uncertainties associated with conducting business in foreign economic and regulatory environments including trade barriers; economic sanctions; environmental regulations; import and export regulations; duties and tariffs and other trade restrictions; changes in trade policies; anti-corruption laws; domestic and foreign governmental regulations; potential vulnerability of and reduced protection for intellectual property; disruptions or delays in production or shipments; and instability or fluctuations in currency exchange rates, any of which could have a material adverse effect on our business, financial condition, and operating results. In addition, with the acquisition of Silicon Image, we have increased the operational challenges of conducting our business in and across multiple geographic regions around the world, especially in the face of different business practices, social norms, and legal standards.

Moreover, our financial condition and results of operations could be affected in the event of political instability, including as a result of the United Kingdom referendum on June 23, 2016, in which voters approved an exit from the European Union (commonly referred to as "Brexit"), terrorist activity, U.S. or other military actions, or economic crises in countries where our main wafer suppliers, end customers, contract manufacturers, and logistics providers are located.

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

With the acquisition of Silicon Image, the Mobile and Consumer end market has increased in importance to us. Revenue from the Mobile and Consumer end market accounted for 28% of our revenue in fiscal 2017. Revenue from the Mobile and Consumer end market consists primarily of revenue from our products designed and used in a broad range of consumer electronics products including smartphones, tablets and e-readers, wearables, accessories such as chargers and docks, Ultra High-Definition (UHD) TVs, Digital SLR cameras, drones, and other connected devices. This market is characterized by rapidly changing requirements and product features and volatility in consumer demand. Our success in this market will depend principally on our ability to:

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

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

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

Revenue from the Communications and Computing end market accounted for 29% of our revenue in fiscal 2017. Three of our top five programmable logic customers participate primarily in the Communications and Computing end market. In the past, cyclical weakening in demand for programmable logic products from customers in the Communications and Computing end market has adversely affected our revenue and operating results. In addition, telecommunication equipment providers are building network infrastructure for which we compete for product sales. Any deterioration in the Communications and Computing end market, our end customers' reduction in spending, or a reduction in spending by their customers to support this end market or use of our competitors' products could lead to a reduction in demand for our products which could adversely affect our revenue and results of operations. This type of decline impacted our results in the past and could do so again in the future.

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

The products we develop are complex and require significant planning and resources. In the Mobile and Consumer end market, new products are typically introduced early in the year, often in association with key trade shows. In order to meet these deadlines, our customers must complete their product development by year-end, which usually means we must ship sample parts in early spring. If we cannot ship sample parts in early spring, customers may be forced to

remove the feature provided by our product, use a competitor's product, or use an alternate technology in order to meet their timelines. We plan our product development with these market windows in mind, but if we receive requests from a large customer to deploy resources to meet their requirements or work on a specific solution, our normal development path could be delayed, causing us to miss sample deadlines and therefore future revenues.

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

We rely in part on various information technology ("IT") systems to manage our operations, including financial reporting, and we regularly make changes to improve them as necessary by periodically implementing new, or upgrading or enhancing existing, operational and IT systems, procedures, and controls. We have undergone a significant integration and systems implementation following the acquisition of Silicon Image.

We have recently implemented a new enterprise resource planning ("ERP") system to standardize our processes worldwide and adopt best-in-class capabilities. We converted to the new ERP system at the beginning of the second quarter of fiscal 2017. We have committed significant resources to this new ERP system, which replaces multiple legacy systems, and realizing the full functionality of this conversion is extremely complex, in part, because of the wide range of processes and the multiple legacy systems that must be integrated.

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

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

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

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

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

The occurrence of any of these risks could have a material adverse effect on our business, results of operations, financial condition, or cash flows, particularly in the case of a larger acquisition or several concurrent acquisitions or

strategic investments. In addition, we may enter into strategic partnerships with third parties with the goal of gaining access to new and innovative products and technologies. Strategic partnerships pose many of the same risks as acquisitions or investments.

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

We are required under U.S. GAAP to test goodwill for possible impairment on an annual basis and to test goodwill and long-lived assets, including amortizable intangible assets, for impairment at any other time that circumstances arise indicating the carrying value may not be recoverable. For purposes of testing goodwill for impairment, the Company currently operates as one reporting unit: the core Lattice ("Core") business, which includes intellectual property and semiconductor devices. No impairment charges related to goodwill were recorded in either fiscal year 2017 or 2016, and no impairment charges related to goodwill were recorded for the Core segment in fiscal 2015. Impairment charges related to amortizable intangible assets from the Silicon Image acquisition totaled approximately \$32.4 million and \$7.9 million in fiscal years 2017 and 2016, respectively. There is no assurance that future impairment tests will indicate that goodwill or amortizable intangible assets will be deemed recoverable. As we continue to review our business operations and test for impairment or in connection with possible sales of assets, we may have impairment charges in the future, which may be material.

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A number of factors, including our inventory strategy, can impact our gross margins.

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

Our customers typically test and evaluate our products prior to deciding to design our product into their own products, and then require additional time to begin volume production of those products. This lengthy sales cycle may cause us to experience significant delays and to incur additional inventory costs until we generate revenue from our products. It is possible that we may never generate any revenue from products after incurring significant expenditures.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

will be entitled to receive, and these estimates could differ materially from actual royalty sharing amounts.

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

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

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

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

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

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

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

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

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

result from how our industry or we might modify behaviors in a response to the new tax law structure. We also provide no assurance that estimates we provide to quantify the effect of the changes may be accurate.

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

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

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We may have difficulty implementing the new revenue recognition requirements.

Although we have spent considerable time preparing to implement new Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606), we do not have extensive experience with the new requirements in practice. The SEC requires us to publish our financial results in short time frames, which could result in our having difficulty actually implementing the new requirements as intended within the proscribed financial reporting periods. We provide no assurance that our current estimates of the effects of ASU No. 2014-09 contained elsewhere in this Annual Report are accurate.

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

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

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

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

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

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

adversely affect our financial condition and results of operations.

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

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

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

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

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

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

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

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

We now have 60GHz wireless technology that we hope will be made widely available and adopted by the marketplace through the efforts of the WirelessHD consortium and incorporated into certain of our future products. As with our HDMI and MHL products and intellectual property, our success with this technology will depend on our ability to introduce first-to-market WirelessHD-enabled semiconductor and intellectual property solutions to our customers and to continue to innovate within the WirelessHD standard. WiGig is an example of a competing 60GHz standard that has been created as an alternative high-bandwidth wireless connectivity solution for the personal computing industry. While the WiGig standard has not been in the market as long as the WirelessHD standard, it does represent a viable alternative to WirelessHD for 60GHz connectivity. If WiGig should gain broader adoption before WirelessHD is adopted, it could negatively impact the adoption of WirelessHD.

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

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

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

From time to time we are subject to various legal proceedings and claims that arise out of the ordinary conduct of our business. Certain claims are not yet resolved, including those that are discussed under Note 15 contained in the Notes to Consolidated Financial Statements, and additional claims may arise in the future. Results of legal proceedings cannot be predicted with certainty. Regardless of merit, litigation may be both time-consuming and disruptive to our operations and cause significant expense and diversion of management attention and we may enter into material settlements to avoid these risks. Should we fail to prevail in certain matters, we may be faced with significant monetary damages or injunctive relief against us that could materially and adversely affect our financial condition and operating results and certain portions of our business.

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

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

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

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

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

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

highly-competitive and innovative environment.

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Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters and executive office are in a 23,680 square foot of space leased in Portland, Oregon through March 2025. We also leased a 47,800 square foot of space in Hillsboro, Oregon as a research and development facility through November 2022. We also currently lease a 98,874 square foot research and development facility in San Jose, California through September 2026.

In Muntinlupa City, Philippines, we lease a total of 48,565 square feet through May 2025 and 1,938 square feet through June 2025 for research and development and operations facilities. In this location, we also lease another 2,856 square feet through April 2018.

The March 2015 acquisition of Silicon Image added 128,154, 66,385 and 22,507 square feet of leased spaces in Sunnyvale, California, Shanghai, China and Hyderabad, India through June 2018, May 2018 and December 2017, respectively. We terminated the Sunnyvale lease in February 2017 and the Hyderabad lease in September 2017.

In Shanghai, China, we leased space for 3,212 square feet, prior to the acquisition of Silicon Image, which we terminated in November 2015. We also owned an 18,869 square foot research and development facility in Shanghai, China, which we sold in August 2017. In this location, we also lease another 66,361 square feet through May 2018.

We also lease office facilities in multiple other metropolitan locations for our domestic and international sales staff. We believe that our existing facilities are suitable and adequate for our current and foreseeable future needs.

Item 3. Legal Proceedings

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

Item 4. Mine Safety Disclosures

Not applicable.

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PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities

Market Information

Our common stock is traded on the NASDAQ Global Select Market under the symbol "LSCC". The following table sets forth the low and high intraday sale prices for our common stock for the last two fiscal years, as reported by NASDAQ.

	Low	High
2017:		
First Quarter	\$6.76	\$7.55
Second Quarter	6.51	7.10
Third Quarter	5.05	7.03
Fourth Quarter	5.14	6.60
2016:		
First Quarter	\$4.02	\$6.67
Second Quarter	4.89	6.47
Third Quarter	5.21	6.69
Fourth Quarter	5.91	7.99

Holders

As of March 2, 2018, we had approximately 240 stockholders of record.

Dividends

The payment of dividends on our common stock is within the discretion of our Board of Directors. We intend to retain earnings to finance our business. We have never paid cash dividends.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

None.

Comparison of Total Cumulative Stockholder Return

The following graph shows the five-year comparison of cumulative stockholder return on our common stock, the Standard and Poor's ("S&P") 500 Index and the Philadelphia Semiconductor Index ("PHLX") from December 2012 through December 2017. Cumulative stockholder return assumes \$100 invested at the beginning of the period in our common stock, the S&P and PHLX. Historical stock price performance is not necessarily indicative of future stock price performance.

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Lattice Cumulative Stockholder Return

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Item 6. Selected Financial Data

STATEMENT OF OPERATIONS: (In thousands, except per share data)	Year Ended *				
	December 31, 2017	December 31, 2016	January 2, 2016 **	January 3, 2015	December 28, 2013
Revenue:					
Product	\$356,502	\$390,704	\$369,200	\$366,127	\$332,525
Licensing and services	29,459	36,350	36,766	—	—
Total Revenue	385,961	427,054	405,966	366,127	332,525
Costs and expenses:					
Cost of product revenue	164,657	179,983	184,914	159,940	154,281
Cost of licensing and services revenue	4,725	637	1,143	—	—
Research and development	103,357	117,518	136,868	88,079	80,966
Selling, general, and administrative	90,718	98,602	97,349	73,527	67,144
Amortization of acquired intangible assets	31,340	33,575	29,580	2,948	2,960
Restructuring charges	7,196	9,267	19,239	17	388
Acquisition related charges	3,781	6,305	22,450	—	—
Impairment of goodwill and acquired intangible assets	32,431	7,866	21,655	—	—
Gain on sale of building	(4,624)	—	—	—	—
Total costs and expenses	433,581	453,753	513,198	324,511	305,739
(Loss) Income from operations	(47,620)	(26,699)	(107,232)	41,616	26,786
Interest expense	(18,807)	(20,327)	(18,389)	(172)	(152)
Other (expense) income, net ***	(3,286)	2,844	(1,072)	1,497	(148)
(Loss) income before income taxes	(69,713)	(44,182)	(126,693)	42,941	26,486
Income tax expense (benefit)	849	9,917	32,540	(5,639)	4,165
Net (loss) income	\$(70,562)	\$(54,099)	\$(159,233)	\$48,580	\$22,321
Net (loss) income per share:					
Basic	\$(0.58)	\$(0.45)	\$(1.36)	\$0.41	\$0.19
Diluted	\$(0.58)	\$(0.45)	\$(1.36)	\$0.40	\$0.19
Shares used in per share calculations:					
Basic	122,677	119,994	117,387	117,708	115,701
Diluted	122,677	119,994	117,387	120,245	117,081
BALANCE SHEET: (In thousands)					
Cash, cash equivalents, and short-term marketable securities	\$111,797	\$116,860	\$102,574	\$254,844	\$215,815
Total assets	\$635,961	\$766,883	\$785,920	\$510,530	\$447,876
Long term liabilities	\$334,621	\$338,903	\$369,223	\$8,809	\$3,588
Total liabilities	\$418,268	\$496,453	\$480,400	\$69,555	\$62,196
Total stockholders' equity	\$217,693	\$270,430	\$305,520	\$440,975	\$385,680

* The year ended January 3, 2015 was a 53-week year as compared to the other years presented, which were based on our standard 52-week year.

** Our results for the year ended January 2, 2016 include the results associated with the acquisition of Silicon Image for the approximately 10-month period from

March 11, 2015 through January 2, 2016. Results presented for periods prior to fiscal 2015 are those historically reported for Lattice only.

*** Equity in net loss of an unconsolidated affiliate previously presented separately is now included in Other (expense) income, net for all periods presented.

(see "Reclassifications" in Note 1 - Nature of Operations and Significant Accounting Policies to our Consolidated Financial Statements in Part II, Item 8).

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ITEM 7. 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. We acquired Silicon Image, Inc. ("Silicon Image") in March 2015. Silicon Image was engaged in setting industry standards including the HDMI®, DVI®, MHL® and WirelessHD® standards.

Plan of Merger and Reorganization Terminated

On November 3, 2016, we entered into an Agreement and Plan of Merger (the "Merger Agreement") with Canyon Bridge Acquisition Company, Inc., a Delaware corporation ("Parent"), and Canyon Bridge Merger Sub, Inc., a Delaware corporation and wholly owned subsidiary of Parent ("Merger Sub"), providing for the merger of Merger Sub with and into the Company (the "Merger"), with the Company surviving the Merger as a wholly owned subsidiary of Parent.

The closing of the Merger was subject to certain closing conditions. These closing conditions included clearance by the Committee on Foreign Investment in the United States ("CFIUS") under the Defense Production Act of 1950, as amended. On September 13, 2017, the President of the United States issued an order (the "Order") prohibiting the Merger. As a result of the issuance of the Order, clearance by CFIUS was not obtained, the Merger cannot be consummated, and we have terminated the Merger Agreement in accordance with its terms. Neither the Company nor Parent will incur any termination fees in connection with the termination of the Merger Agreement.

Critical Accounting Policies and Use of Estimates

Critical accounting policies are those that are both most important to the portrayal of a company's financial condition and results, and that require management's most difficult, subjective, and complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. We base our estimates and judgments on historical experience, knowledge of current conditions, and our beliefs of what could occur in the future considering available information. While we believe that our estimates, assumptions, and judgments are reasonable, they are based on information available when made, and actual results may differ from these estimates under different assumptions or conditions. We evaluate our estimates and judgments on an ongoing basis. We believe the following accounting policies and the related estimates are critical in the portrayal of our financial condition and results of operations, and require management's most difficult, subjective, or complex judgments. See "Note 1 - Nature of Operations and Significant Accounting Policies" under Part II, Item 8 of this report for further information on the significant accounting policies and methods used in the preparation of the consolidated financial statements.

Revenue Recognition and Deferred Income

Product Revenue

We sell our products through several channels: directly to end customers, through a network of independent manufacturers' representatives, and indirectly through a network of independent sell-in and sell-through distributors. Distributors provide periodic data regarding the product, price, quantity, and end customer when products are resold, as well as the quantities of our products they still have in stock.

Revenue from sales to original equipment manufacturers ("OEMs") and sell-in distributors is generally recognized upon shipment. Reserves for sell-in stock rotations, where applicable, are estimated based primarily on historical experience and provided for at the time of shipment. Revenue from sales by our sell-through distributors is recognized at the time of reported resale. Under both types of revenue recognition, persuasive evidence of an arrangement exists, the price is fixed or determinable, title has transferred, collection of resulting receivables is reasonably assured, and there are no remaining customer acceptance requirements and no remaining significant performance obligations.

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Orders from our sell-through distributors are initially recorded at published list prices; however, for a majority of our sales, the final selling price is determined at the time of resale and in accordance with a distributor price agreement. For this reason, we do not recognize revenue until products are resold by sell-through distributors to an end customer. In certain circumstances, we allow sell-through distributors to return unsold products. At times, we protect our sell-through distributors against reductions in published list prices.

At the time of shipment to sell-through distributors, we (a) record accounts receivable at published list price since there is a legally enforceable obligation from the distributor to pay us currently for product delivered, (b) relieve inventory for the carrying value of goods shipped since legal title has passed to the distributor, and (c) record deferred revenue and deferred cost of sales in Deferred income and allowances on sales to sell-through distributors in the liability section of our Consolidated Balance Sheets. Revenue and cost of sales to sell-through distributors are deferred until either the product is resold by the distributor or, in certain cases, return privileges terminate, at which time Revenue and Cost of product revenue are reflected in Net loss in our Consolidated Statements of Operations, and Accounts receivable, net is adjusted to reflect the final selling price.

Licensing and Services Revenue

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 market adoption curves associated with our technology and standards.

From time to time we enter into patent sale and licensing agreements to monetize and license a broad portfolio of our patented inventions. Such licensing agreements may include upfront license fees and ongoing royalties. The contractual terms of the agreements generally provide for payments of upfront license fees and/or royalties over an extended period of time. Revenue from such license fees is recognized when payments become due and payable as long as all other revenue recognition criteria are met, while revenue from royalties is recognized when reported to us by customers.

We enter into IP licensing agreements that generally provide licensees the right to incorporate our IP components into their products pursuant to terms and conditions that vary by licensee. Revenue earned under these agreements is classified as Licensing and services revenue. Our IP licensing agreements generally include multiple elements, which may include one or more off-the-shelf or customized IP licenses bundled with support services covering a fixed period of time, generally one year. If the different elements of a multiple-element arrangement qualify as separate units of accounting, we allocate the total arrangement consideration to each element based on relative selling price.

Amounts allocated to off-the-shelf IP licenses are recognized at the time of sale provided the other conditions for revenue recognition have been met. Amounts allocated to the support services are deferred and recognized on a straight-line basis over the support period, generally one year. Certain licensing agreements provide for royalty payments based on agreed-upon royalty rates, which may be fixed or variable depending on the terms of the agreement. The amount of revenue we recognize is based on a specified time period or on the agreed-upon royalty rate multiplied by the reported number of units shipped by the customer.

From time to time, we enter into IP licensing agreements that involve significant modification, customization or engineering services. Revenues derived from these contracts are accounted for using the percentage-of-completion method or completed contract method. The completed contract method is used for contracts where there is a risk associated with final acceptance by the customer or for short-term contracts.

Inventories and Cost of Product Revenue

Inventories are recorded at the lower of average cost determined on a first-in-first-out basis or market. We establish provisions for inventory if it is obsolete or we hold quantities which are in excess of projected customer demand. The creation of such provisions results in a write-down of inventory to net realizable value and a charge to Cost of product revenue.

Restructuring Charges

Expenses associated with exit or disposal activities are recognized when incurred under ASC 420, "Exit or Disposal Cost Obligations," for everything but severance. Because the Company has a history of paying severance benefits, the cost of severance benefits associated with a restructuring plan is recorded when such costs are probable and the amount can be reasonably estimated in accordance with ASC 712, "Compensation - Nonretirement Postemployment Benefits." When leased facilities are vacated, an amount equal to the total future lease obligations from the date of vacating the premises through the expiration of the lease, net of any future sublease income, is recorded as a part of restructuring charges.

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Impairment of Long-Lived Assets

Long-lived assets, including amortizable intangible assets, are carried on our financial statements based on their cost less accumulated depreciation or amortization. We monitor the carrying value of our long-lived 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. These events or changes in circumstances, including management decisions pertaining to such assets, are referred to as impairment indicators. If an impairment indicator occurs, we perform a test of recoverability by comparing the carrying value of the asset group to its undiscounted expected future cash flows. If the carrying values are in excess of undiscounted expected future cash flows, we measure any impairment by comparing the fair value of the asset group to its carrying value. Fair value is generally determined by considering (i) internally developed discounted projected cash flow analysis of the asset group; (ii) actual third-party valuations; and/or (iii) information available regarding the current market for similar asset groups. If the fair value of the asset group is determined to be less than the carrying amount of the asset group, an impairment in the amount of the difference is recorded in the period that the impairment indicator occurs and is included in our Consolidated Statements of Operations. Estimating future cash flows requires significant judgment and projections may vary from the cash flows eventually realized, which could impact our ability to accurately assess whether an asset has been impaired.

Valuation of Goodwill

Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. We review goodwill for impairment annually during the fourth quarter and whenever events or changes in circumstances indicate the carrying value of goodwill may not be recoverable. When evaluating whether goodwill is impaired, we make a qualitative assessment to determine if it is more likely than not that the reporting unit's fair value is less than the carrying amount. If the qualitative assessment determines that it is more likely than not that the fair value is less than the carrying amount, the fair value of the reporting unit is compared with its carrying value (including goodwill). If the fair value of the reporting unit is less than its carrying value, an indication of goodwill impairment exists for the reporting unit and we must measure the impairment loss. The impairment loss, if any, is recognized for any excess of the carrying amount of the reporting unit's goodwill over the implied fair value of the goodwill. The implied fair value of goodwill is determined by allocating the fair value of the reporting unit in a manner similar to purchase price allocation and the residual fair value after this allocation is the implied fair value of the reporting unit goodwill. Fair value of the reporting unit is determined using a discounted cash flow analysis. If the fair value of the reporting unit exceeds its carrying value, no further impairment analysis is needed.

Accounting for Income Taxes

Our provision for income tax is comprised of our current tax liability and changes in deferred tax assets and liabilities. Deferred tax assets and liabilities are recognized for the expected tax consequences of temporary differences between the tax bases of assets and liabilities and their reported amounts in the financial statements using enacted tax rates and laws that will be in effect when the difference is expected to reverse. Valuation allowances are provided to reduce deferred tax assets to an amount that in management's judgment is more-likely-than-not to be recoverable against future taxable income. U.S. tax reform required a deemed repatriation of foreign earnings as of December 30, 2017 and no future U.S. taxes will be due on these earnings because of enactment of a 100% dividends received deduction. Foreign earnings may be subject to withholding taxes if they are distributed and repatriated to Lattice in the United States.

Our income tax calculations are based on application of the respective U.S. federal, state or foreign tax law. Our tax filings, however, are subject to audit by the relevant tax authorities. Accordingly, we recognize tax liabilities based

upon our estimate of whether, and the extent to which, additional taxes will be due when such estimates are more-likely-than-not to be sustained. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. To the extent the final tax liabilities are different than the amounts originally accrued, the increases or decreases as well as any interest or penalties are recorded as income tax expense or benefit in the Consolidated Statements of Operations.

In assessing the ability to realize deferred tax assets, we evaluate both positive and negative evidence that may exist and consider whether it is more-likely-than-not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible.

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Results of Operations

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

(In thousands)	Year Ended					
	December 30, 2017		December 31, 2016		January 2, 2016 *	
Revenue	\$385,961	100.0 %	\$427,054	100.0 %	\$405,966	100.0 %
Gross margin	216,579	56.1	246,434	57.7	219,909	54.2
Research and development	103,357	26.8	117,518	27.5	136,868	33.7
Selling, general, and administrative	90,718	23.5	98,602	23.1	97,349	24.0
Amortization of acquired intangible assets	31,340	8.1	33,575	7.9	29,580	7.3
Restructuring charges	7,196	1.9	9,267	2.2	19,239	4.7
Acquisition related charges	3,781	1.0	6,305	1.5	22,450	5.5
Impairment of goodwill and acquired intangible assets	32,431	8.4	7,866	1.8	21,655	5.3
Gain on sale of building	(4,624)	(1.2)	—	—	—	—
Loss from operations	\$(47,620)	(12.3)%	\$(26,699)	(6.3)%	\$(107,232)	(26.4)%

* Lattice acquired Silicon Image on March 10, 2015. Results of Operations for the year ended January 2, 2016 (fiscal 2015) include the financial results of the Silicon Image business for the approximately 10-month period from March 11, 2015 through January 2, 2016.

Revenue

(In thousands)	Year Ended			% Change in
	December 30, 2017	December 31, 2016	January 2, 2016	
Revenue	\$385,961	\$427,054	\$405,966	(10) 5

Revenue decreased \$41.1 million, or 10%, in fiscal 2017 compared to fiscal 2016, primarily driven by lower revenue from consumer mobile handsets and reductions from Digital Television ("DTV") and Home Theater related devices. This was coupled with a decline from the line item reduction caused by the obsoleting of tin leaded assembly material in one of the complex programmable logic devices ("CPLD") in the industrial and communications markets, for which shipments predominately occurred in fiscal 2016 but did not recur in fiscal 2017. These decreases were partially offset by a broad market increase in programmable logic device revenue in the Industrial and Automotive end market, and the production ramp of a server reference design being widely adopted in the computing market. Additionally, we saw growth in our XO2/XO3 and EC5 product families, revenue from a patent sale transaction, and modest growth in the 60GHz wireless silicon products.

Revenue increased \$21.1 million, or 5%, in fiscal 2016 compared to fiscal 2015, primarily driven by approximately \$40.6 million of growth in the Industrial and Automotive end market for programmable logic devices, along with a significant increase in new programmable production volume for a major mobile handset provider, and the inclusion of additional revenue in connection with our acquisition of Silicon Image for the full year of fiscal 2016 relative to only an approximately 10-month period in fiscal 2015, partially offset by approximately \$20.4 million of decline in the Communications and Computing end market for programmable logic devices.

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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. 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 separately 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:

(In thousands)	Year Ended *						% Change in	
	December 30, 2017	December 31, 2016	January 2, 2016		2017	2016		
Communications and Computing	\$113,019	\$123,021	\$143,424		8	(14)		
Mobile and Consumer	108,844	127,405	126,130		(15)	1		
Industrial and Automotive	134,639	140,278	99,646		(4)	41		
Licensing and Services	29,459	36,350	36,766		(19)	(1)		
Total revenue	\$385,961	\$427,054	\$405,966		(10)	5		

* During the first quarter of fiscal 2016, we realigned our end market categories to group Computing with Communications rather than with

Industrial, as had been the previous grouping. Prior periods have been reclassified to match current period presentation.

Our revenue in the Communications and Computing end market is largely dependent on a small number of large telecommunications equipment providers. For fiscal 2017, Communications and Computing end market revenue declined 8% primarily in the communications market, which saw a significant decrease in revenue from a major telecommunications customer whose business was affected by Commerce department actions, and by conversion of materials from 200mm to 300mm wafers. This was partially offset by growth in the Communications and Computing end market due to the initial production ramp of the server platform reference design being widely adopted in that sector. For fiscal 2016, Communications and Computing end market revenue declined 14% primarily in programmable products, and was across a broad base of communications customers and modestly in our largest computing customer.

Mobile and Consumer end market revenue decreased 15% in fiscal 2017, after increasing 1% in fiscal 2016. Mobile and Consumer end market revenue decreased in fiscal 2017 primarily due to a significant decrease in volume for a major mobile handset provider. The production volume for this mobile handset peaked in the fourth quarter of fiscal 2016, and the associated revenue stream has declined in subsequent quarters as the end product completes its lifecycle.

These decreases were coupled with declines in revenue from HDMI devices used in DTV and Home Theater related products and from MHL devices used in mobile handsets. Mobile and Consumer end market revenue increased in fiscal 2016 primarily due to a significant increase in new programmable production volume for a major mobile handset provider offset by a nearly equal decline in ASSP shipments related to high-definition television ("HDTV") and mobile handsets.

For fiscal 2017, Industrial and Automotive end market revenue decreased 4% when compared to fiscal 2016. This is primarily due to a decline from the line item reduction caused by the obsoleting of tin leaded assembly material in one of the CPLD devices for which shipments predominately occurred in fiscal 2016 but did not recur in fiscal 2017. This decrease was substantially offset by broad market growth in this end market, especially from our XO2/XO3 FPGA product families. For fiscal 2016, Industrial and Automotive end market revenue increased 41% when compared to fiscal 2015. This is primarily due to strength in programmable products revenue resulting from line item reduction caused by the obsoleting of tin leaded assembly material in one of the CPLD devices affecting both the Americas and Europe.

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Licensing and Services revenue decreased by 19% in fiscal 2017 primarily due to lower revenue from HDMI licensing and adopter fees as a new royalty sharing agreement had not been finalized, and by the termination of our role as agent for the HDMI consortium. As a result of the amended model for sharing revenue and the appointment of a new independent agent for the HDMI consortium, we will be entitled to a reduced share of adopter fees paid by parties adopting the HDMI standard in 2017 and future years. The termination of our role as agent for the HDMI consortium resulted in a decrease of approximately \$11 million for fiscal 2017 compared to fiscal 2016. While a new royalty sharing agreement is being negotiated, the HDMI agent is collecting royalties but is unable to distribute a majority of the royalties to the Founders. Given that a new royalty sharing agreement was not fully executed under current revenue guidance, the fixed and determinable revenue recognition criteria was not met, and we were unable to recognize all of the HDMI royalty revenue in fiscal 2017. Revenue attributable to HDMI royalties is down approximately \$9 million for fiscal 2017 compared to fiscal 2016 mainly as a result of the royalty sharing formula not being finalized. The decrease related to HDMI was partially offset by a patent sale transaction of \$18 million in fiscal 2017.

Licensing and Services revenue decreased by 1% in fiscal 2016 primarily due to slightly reduced license and adopter fees at licensed end customers. Licensing and Services revenue was first recognized in fiscal 2015 following the acquisition of Silicon Image in March 2015. Previously, we did not have Licensing and Services revenue. Revenue from this end market is expected to fluctuate, sometimes significantly, from period to period as a result of the timing of completion of IP license arrangements, IP sales, patent sales, and settlement of royalty audits.

Based on our assessment of the implementation of Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606), we anticipate that, until an HDMI royalty sharing agreement is reached, the new standard will allow us to recognize certain licensing revenues which are not recognizable under current GAAP due to the fixed and determinable revenue recognition criteria not being met. Once an HDMI royalty sharing agreement is reached, we will not be able to recognize HDMI royalty revenues related to prior periods under the new standard that we would have been able to recognize under current GAAP. We estimate that the effect on 2018 licensing revenues under the new standard will be an increase of \$5 million to \$10 million if a royalty sharing agreement is not reached in 2018, and a decrease of \$5 million to \$10 million if a royalty sharing agreement is reached in 2018.

Revenue by Geography

We assign revenue to geographies based on customer ship-to address at the point where revenue is recognized. In the case of sell-in distributors and OEM customers, revenue is typically recognized, and geography is assigned, when products are shipped to our distributor or OEM customer. In the case of sell-through distributors, revenue is recognized when resale to the end customer occurs and geography is assigned based on the end customer location on the resale reports provided by the distributor. Both foreign and domestic sales are denominated in U.S. dollars.

The composition of our revenue by geography, based on ship-to location, is presented in the following table:

(In thousands)	Year Ended						%		Change in	
	December 30, 2017	December 31, 2016	December 31, 2016	January 2, 2016	2017	2016	2017	2016	2017	2016
Asia	\$277,638	72 %	\$305,093	71 %	\$308,534	76 %	(9)	(1)		
Europe	44,547	12	59,835	14	55,596	14	(26)	8		
Americas	63,776	16	62,126	15	41,836	10	3	48		
Total revenue	\$385,961	100%	\$427,054	100%	\$405,966	100%	(10)	5		

Revenue in Asia decreased 9% in fiscal 2017 and decreased 1% in fiscal 2016. In fiscal 2017, revenue decreased in Asia primarily due to a significant decrease in Communications and Computing end market revenue from a major telecommunications customer whose business was affected by government regulations, and by conversion of materials from 200mm to 300mm wafers. Additionally, the Mobile and Consumer end market saw a significant decrease in volume for a major North American mobile handset provider. The production volume for this mobile handset peaked in the fourth quarter of fiscal 2016, and the associated revenue stream has declined in subsequent quarters as the end product completes its lifecycle. This was coupled with decreased revenue from DTV and Home Theater related devices. In fiscal 2016, revenue decreased in Asia primarily due to declines in HDTV and ASSP revenue, although these were substantially offset by increases in revenue from field programmable gate array logic products in the Mobile and Consumer end market. We believe the Asia Pacific region will remain the primary source of our revenue due to relatively more favorable business conditions in Asia and a continuing trend towards the migration of manufacturing by North American and European customers to the Asia Pacific region.

Revenue in Europe decreased 26% in fiscal 2017 primarily due to a decline in the line item reduction caused by the obsolescing of tin leaded assembly material in one of the CPLD devices, for which shipments predominately occurred in fiscal 2016 but did not recur in fiscal 2017. Revenue in Europe increased 8% in fiscal 2016 primarily due to line item reduction and CPLD conversions.

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Revenue from the Americas increased 3% in fiscal 2017 primarily due to a patent sale transaction for \$18.0 million recognized in fiscal 2017, substantially offset by a decline in the line item reduction and CPLD conversion program, for which shipments predominately occurred in fiscal 2016 but did not recur in fiscal 2017. Revenue from the Americas increased 48% in fiscal 2016 primarily due to line item reduction and CPLD conversions.

Revenue from foreign sales as a percentage of total revenue was 87%, 88%, and 92% for fiscal 2017, 2016 and 2015, respectively.

Revenue from End Customers

Our top five end customers constituted approximately 26% in fiscal 2017, compared to approximately 27% and 32% in fiscal years 2016 and 2015, respectively, primarily due to a more diverse customer base.

During fiscal years 2017, 2016 and 2015, no end customer accounted for more than 10% of total revenue. Our largest end customer in fiscal 2017 accounted for approximately 7.3% of total revenue. Our largest end customer in fiscal 2016 accounted for approximately 9.9% of total revenue, while our largest end customer in fiscal 2015 accounted for approximately 9.3% of total revenue.

Revenue from Sell-Through Distributors

Sales through distributors have historically accounted for a significant portion of our total revenue. Revenue attributable to resale of products by sell-through distributors as a percentage of total revenue is presented in the following table:

	Year Ended		December 31, January 2,	
	2017	2016	2016	2016
Arrow Electronics Inc.	24%	24	%	20
Weikeng Group	27	22		12
All others	15	15		13
All sell-through distributors	66%	61	%	45

Revenue attributable to revenue streams other than sell-through distributors decreased in fiscal 2017 compared to fiscal 2016, resulting in increases in sell-through distribution revenue as a percentage of total revenue. Revenue from sell-through distributors as a percent of total revenue increased in fiscal 2016 primarily due to an increase in new programmable production volume in consumer mobile devices shipped through a sell-through distributor in 2016, as well as declines in channels other than sell-through distributors from 2015 levels, mainly due to declines in DTV and Home Theater related devices and handset content revenues.

Based on our assessment of the implementation of Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606), we believe the most significant impact of the new standard will be to accelerate the timing of revenue recognition on product shipments to our sell-through distributors. Assuming all other revenue recognition criteria have been met, the new guidance would require 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 is our current practice. The impact of this change will depend primarily on the level of inventory held by sell-through 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 current standard. We anticipate the adoption of the new standard to increase revenue from sell-through distributors for fiscal 2018 in the \$5 million to \$10 million range.

Gross margin

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

(In thousands)	Year Ended			
	December 30, 2017	December 31, 2016	January 2, 2016	
Gross margin	\$216,579	\$ 246,434	\$219,909	
Percentage of revenue	56.1	% 57.7	% 54.2	%
Product gross margin %	53.8	% 53.9	% 49.9	%
Licensing and services gross margin %	84.0	% 98.2	% 96.9	%

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Gross margin, as a percentage of revenue, decreased 1.6 percentage points from fiscal 2016 to fiscal 2017 primarily due to the decrease in licensing and services gross margin, which decreased 14.2 percentage points from fiscal 2016 to fiscal 2017. This was primarily due to the \$18.0 million patent sale in fiscal 2017. The costs associated with the patent sale of \$3.6 million, primarily the net book value of the patents acquired in our acquisition of Silicon Image, were greater than usual for this category and had a substantial impact on licensing and services gross margin.

Gross margin and Product gross margin, as a percentage of revenue, increased 3.5 and 4.0 percentage points, respectively, from fiscal 2015 to fiscal 2016. Of this increase, approximately 2.5 percentage points was due to product cost reductions from lower overhead burden rates, reduced wafer and packaging costs, and improved yields. Approximately another 1.5 percentage points of the increase was due to the reduced amortization in the current year of purchase price accounting adjustments (now completed) associated with the sell-through of acquired inventory and deferred revenue. These increases were partially offset by a less favorable product and customer mix.

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

(In thousands)	Year Ended			% Change in	
	December 31, 2017	December 31, 2016	January 2, 2016	2017	2016
Research and development	\$103,357	\$117,518	\$136,868	(12.1)%	(14.1)%
Percentage of revenue	26.8	% 27.5	% 33.7	%	
Mask costs included in Research and development	\$931	\$3,328	\$5,770	(72.0)%	(42.3)%

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

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

The decrease in research and development expense for fiscal 2017 compared to fiscal 2016 is due mainly to the cost reductions realized from the restructuring actions and integration of operations undertaken since the acquisition of Silicon Image, including the sales of assets and business units. These savings were predominantly from headcount reductions and site consolidations. Additionally, we saw reduced mask, wafer, and assembly costs, and depreciation expense, partially offset by higher bonus and IP insourcing expenses

The decrease in research and development expense for fiscal 2016 compared to fiscal 2015 is due mainly to significantly reduced headcount expenses and, to a lesser extent, reduced mask and wafer costs, lab supplies, time-based licenses, and outside services.

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Selling, general, and administrative expense

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

(In thousands)	Year Ended			% Change in	
	December 31, 2017	December 31, 2016	January 2, 2016	2017	2016
Selling, general, and administrative	\$90,718	\$ 98,602	\$97,349	(8.0)%	1.3%
Percentage of revenue	23.5	% 23.1	% 24.0	%	

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

The decrease in selling, general, and administrative expense for fiscal 2017 compared to fiscal 2016 was due mainly to lower bad debt expense in 2017. We also saw lower legal and accounting fees that were partially offset by increased bonus, travel, and depreciation expenses.

The increase in selling, general, and administrative expense for fiscal 2016 compared to fiscal 2015 was due mainly to an increase in bad debt expense related to the bankruptcy of one of our distributor groups, substantially offset by the decrease in expenses due to restructuring and integration of operations undertaken since the acquisition of Silicon Image, predominantly headcount reductions and site consolidations.

Amortization of Acquired Intangible Assets

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

(In thousands)	Year Ended			% Change in	
	December 31, 2017	December 31, 2016	January 2, 2016	2017	2016
Amortization of acquired intangible assets	\$31,340	\$ 33,575	\$29,580	(6.7)%	13.5%
Percentage of revenue	8.1	% 7.9	% 7.3	%	

For fiscal 2017 compared to fiscal 2016, amortization of acquired intangible assets decreased due to the reduction of certain intangibles as a result of impairment charges, patent sales, and sale of the Qterics business unit, partially offset by additional amortization due to the completion of certain in-process research and development projects acquired from Silicon Image.

For fiscal 2016 compared to fiscal 2015, amortization of acquired intangible assets increased due to the inclusion of additional amortization expense from new intangible assets acquired in connection with our acquisition of Silicon Image for the full year of fiscal 2016 relative to only an approximately 10-month period in fiscal 2015, partially offset by the reduction of certain intangibles as a result of impairment charges in late 2015, and the sale of Qterics in April 2016.

Restructuring charges

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

Year Ended	% Change in
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(In thousands)	December 30, 2017	December 31, 2016	January 2, 2016	2017	2016
Restructuring charges	\$7,196	\$ 9,267	\$19,239	(22.3)%	(51.8)%
Percentage of revenue	1.9	% 2.2	% 4.7	%	%

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

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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. 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 will be expensed as incurred. Approximately \$20.5 million of total expense has been incurred through December 30, 2017 under the March 2015 Plan, and we believe this amount approximates the total costs expected.

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 will be expensed as incurred. Approximately \$7.2 million of total expense has been incurred through December 30, 2017 under the September 2015 Reduction, and we believe this amount approximates the total costs expected.

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. Approximately \$8.0 million of total expense has been incurred through December 30, 2017 under the June 2017 Plan, and we expect the total cost to be approximately \$8.0 million to \$19.0 million.

The \$2.1 million decrease in restructuring expense from fiscal 2016 to fiscal 2017 is primarily the result of significant lease restructuring charges in the prior year related to the March 2015 Plan versus a significantly smaller charge in the current year under the June 2017 Plan. Increased systems restructuring charges in fiscal year 2017 were substantially offset by reduced severance and other restructuring charges.

The \$10.0 million decrease in restructuring expense from fiscal 2015 to fiscal 2016 is primarily the result of decreased headcount related restructuring charges in the current year slightly offset by an incremental net charge in the fourth quarter of 2016 to terminate the lease for our Sunnyvale site.

Acquisition related charges

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

(In thousands)	Year Ended			% Change in	
	December 30, 2017	December 31, 2016	January 2, 2016	2017	2016
Acquisition related charges	\$3,781	\$ 6,305	\$22,450	(40.0)%	(71.9)%
Percentage of revenue	1.0	% 1.5	% 5.5	%	

Acquisition related charges includes severance and professional fees directly related to acquisitions.

For fiscal 2017 and 2016, Acquisition related charges were entirely attributable to legal fees and outside services in connection with our proposed acquisition by Canyon Bridge Acquisition Company, Inc.

For fiscal 2015, acquisition related charges were entirely attributable to our acquisition of Silicon Image in March 2015 and were comprised of professional services including legal, accounting, licenses and fees, and severance and stock compensation costs related to change of control payments to departing executives. Charges related to the acquisition of Silicon Image were substantially completed as of January 2, 2016.

Impairment of goodwill and acquired intangible assets

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

(In thousands)	Year Ended			% Change in	
	December 31, 2017	December 31, 2016	January 2, 2016	2017	2016
Impairment of goodwill and acquired intangible assets	\$32,431	\$ 7,866	\$21,655	+100%	(63.7)%
Percentage of revenue	8.4	% 1.8	% 5.3	%	

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In the third quarter of fiscal 2017, we updated our annual strategic long-range plan, which resulted in revised forecasts. We also sold 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business to an unrelated third party. We determined that these activities constituted impairment indicators related to the developed technology intangible assets acquired in our acquisition of Silicon Image. Our assessment of the fair value of these intangible assets concluded that they had been impaired as of September 30, 2017, and we recorded a preliminary \$36.2 million impairment charge in the Consolidated Statements of Operations. During the fourth quarter of fiscal 2017, we completed our detailed analysis and evaluation of the information and assumptions used in the determination of the impairment charge, which included reviewing information, inputs, assumptions, and valuation methodologies used to estimate the fair value of these intangible assets, and finalization of review by an independent valuation expert. As a result, we recorded a \$3.8 million reduction to the preliminary impairment charge recorded in the third quarter of fiscal 2017, for a net impairment charge of \$32.4 million in fiscal 2017. No impairment charges related to goodwill were recorded in fiscal 2017 as no indicators of impairment were present.

In September 2016, the founders of the HDMI consortium ("Founders"), of which we are a member, updated the Founders Agreement as part of a regular amendment process resulting in changes to our role as agent for the HDMI consortium and to the model for sharing adopter fee revenues. Under the terms of the amendment agreement, our role as the agent was terminated effective January 1, 2017 and a new independent entity was appointed to act as the new HDMI licensing agent with responsibility for licensing and the distribution of royalties among Founders. As a result of the amended model for sharing revenue, we will be entitled to a reduced share of adopter fees paid by parties adopting the HDMI standard. We determined that this modification constituted an impairment indicator related to the intangible assets acquired in the Silicon Image acquisition associated with future HDMI adopter fees. Our assessment of the fair value of these intangible assets concluded that they had been impaired as of October 1, 2016, and we recorded a \$7.9 million impairment charge in the Consolidated Statements of Operations. No impairment charges related to goodwill were recorded in fiscal 2016 as no indicators of impairment were present.

For fiscal 2015, the impairment of goodwill and intangible assets was related to Qterics, Inc., which was acquired in the March 2015 acquisition of Silicon Image. During the fourth quarter of fiscal 2015, we determined that we experienced an impairment indicator related to the long-lived assets of the Qterics operating segment. For purposes of testing for impairment in fiscal 2015, the Company operated as two reporting units: the continuing core Lattice ("Core") business, which includes intellectual property and semiconductor devices, and Qterics, which was a discrete software-as-a-service business unit in the Lattice legal entity structure until it was sold in April 2016. Although these two operating segments constituted two reportable segments in fiscal 2015, we combined Qterics with our Core business and reported them together as one reportable segment due to the immaterial nature of the Qterics segment. Following this assessment, we concluded that goodwill and intangible assets had been impaired in the Qterics segment as of January 2, 2016. As a result, we recorded impairment charges amounting to \$21.7 million, or approximately 92% of the previous value of goodwill and intangible assets, in the Consolidated Statements of Operations for the year ended January 2, 2016, comprising \$12.7 million pertaining to goodwill, \$3.9 million pertaining to developed technology, and \$5.1 million pertaining to customer relationships. The valuation was based on the market approach and was our best estimate of fair value as of the end of fiscal 2015. No impairment charges were recorded for the Core segment in fiscal 2015.

Gain on sale of building

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

Operations.

Interest Expense

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

(In thousands)	Year Ended		% Change in	
	December 30, 2017	December 31, 2016	December 31, 2016	2017 2016
Interest expense	\$(18,807)	\$(20,327)	\$(18,389)	(7.5)% 10.5 %
Percentage of revenue	(4.9)%	(4.8)%	(4.5)%	

The decrease in Interest expense for fiscal 2017 compared to fiscal 2016 was largely driven by the reduction in the principal balance of our long-term debt as a result of the additional principal payments made in the first six months of fiscal 2017.

The increase in interest expense for fiscal 2016 compared to fiscal 2015 was primarily driven by the interest expense related to our debt acquired to partially fund the Silicon Image acquisition, which is further discussed in the Credit Arrangements section under Liquidity and Capital Resources. This interest expense is comprised of contractual interest and amortization of original issue discount and debt issuance costs based on the effective interest method and was recognized for the full year of fiscal 2016 versus only an approximately 10-month period in fiscal 2015. The latter shorter period was the result of the Silicon Image acquisition date late in the first quarter of fiscal 2015.

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Other (expense) income, net

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

(In thousands)	Year Ended			% Change in	
	December 30, 2017	December 31, 2016	January 2, 2016	2017	2016
Other (expense) income, net	\$(3,286)	\$ 2,844	\$(1,072)	(100+)%	100+%
Percentage of revenue	(0.9)%	0.7 %	(0.3)%		

As of December 30, 2017, we held a 22.7% preferred stock and convertible debt ownership interest in a privately-held company that designs human-computer interaction technology (see "Reclassifications" in Note 1 - Nature of Operations and Significant Accounting Policies to our Consolidated Financial Statements in Part II, Item 8). We assessed this investment for impairment as of December 30, 2017 by applying a fair value analysis using a revenue multiple approach. This yielded a fair value for our ownership stake of \$2.3 million, which was less than its carrying value at the date of assessment. We determined that this impairment was other-than-temporary and adjusted the carrying value to the fair value. The total impairment adjustments against this cost-investment that we recognized in fiscal 2017 were \$1.8 million.

Additionally for fiscal 2017 compared to fiscal 2016, Other (expense) income, net is comprised of a \$1.8 million loss on the sale of 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business to an unrelated third party, partially offset by a \$0.3 million gain related to the sale of Qterics on an escrow payment received in fiscal 2017.

For fiscal 2016 compared to fiscal 2015, the increase in Other (expense) income, net is driven by the \$2.6 million gain on the sale of Qterics to an unrelated third party, escrow proceeds received from the sale of assets by Silicon Image prior to our acquisition in 2015, proceeds received from the bankruptcy settlement distribution of a prior customer, all in fiscal 2016, and the loss on sale of assets in the prior year, not recurring in the current year. This was offset by a \$1.0 million increase in impairment of a cost-method investment.

Income taxes

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

(In thousands)	Year Ended			% Change in	
	December 30, 2017	December 31, 2016	January 2, 2016	2017	2016
Income tax expense	\$849	\$ 9,917	\$ 32,540	(91.4)%	(69.5)%

The decrease in income tax expense in fiscal 2017 as compared to fiscal 2016 is primarily due to the decrease in foreign withholding taxes as a result of the termination of our role as the HDMI agent.

Our overall tax expense for fiscal 2016, compared to fiscal 2015 decreased primarily due to the recording of a valuation allowance in 2015 resulting in an increase to the tax provision of \$21 million, not recurring in the current year. In the first quarter of 2015, we completed the acquisition of Silicon Image, Inc. At the time of the acquisition, we evaluated the combined entity's net deferred income taxes, which included an assessment of the cumulative income or loss over the prior three-year period and future periods, to determine if a valuation allowance is required. After considering the impact of the acquisition including interest expense and other restructuring expenses, we recorded a valuation allowance on all of our net U.S. federal and state deferred tax assets.

We are not currently paying U.S. federal income taxes and do not expect to pay such taxes until we fully utilize our tax net operating loss and credit carryforwards. We expect to pay a nominal amount of state income tax. We are paying foreign income taxes, which are primarily related to withholding taxes on income from foreign royalties, and related to foreign sales and to the cost of operating offshore research and development, marketing, and sales subsidiaries. We accrue interest and penalties related to uncertain tax positions in income tax expense on our Consolidated Statements of Operations.

The inherent uncertainties related to the geographical distribution and relative level of profitability among various high and low tax jurisdictions make it difficult to estimate the impact of the global tax structure on our future effective tax rate.

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The Tax Cuts and Jobs Act, enacted December 22, 2017, contains provisions that affect Lattice. Our new U.S. federal tax rate decreased from 35% to 21%. The new limitation on net interest expense will limit current deductibility of some of the interest on our debt although this deduction may be carried forward for utilization in future years. The Global Intangible Low-Taxed Income (“GILTI”) may result in a minimum tax on our non-U.S. sourced income. To the extent we are required to pay additional taxes under these provisions, we have approximately \$350 million in net operating loss carry forwards as of December 31, 2017 available for offset. Adoption of the territorial system concept will facilitate our ability to repatriate future foreign earnings without incurring additional U.S. tax. The new Base Erosion Anti-Abuse Tax (“BEAT”), which effectively requires U.S. companies with related non-U.S. persons to pay a minimum amount of U.S. tax, does not apply to us currently as we are below the \$500 million revenue threshold.

Liquidity and Capital Resources

The following sections discuss the effects of changes in our Consolidated Balance Sheets and the effects of our credit arrangements and contractual obligations on our liquidity and capital resources, our share repurchase program, as well as our non-GAAP measures.

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

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

We believe that our financial resources will be sufficient to meet our working capital needs through at least the next 12 months. As of December 30, 2017, we did not have significant long-term commitments for capital expenditures. In the future, and to the extent our Credit Agreement permits, we may continue to consider acquisition opportunities to further extend our product or technology portfolios and further expand our product offerings. In connection with funding capital expenditures, completing other acquisitions, securing additional wafer supply, or increasing our working capital, we may seek to obtain equity or additional debt financing, or advance purchase payments or similar arrangements with wafer manufacturers. We may also need to obtain equity or additional debt financing if we experience downturns or cyclical fluctuations in our business that are more severe or longer than we anticipated when determining our current working capital needs, which financing may now be more difficult to obtain in light of our indebtedness related to the Credit Agreement.

Liquidity

Cash and cash equivalents and Short-term marketable securities

(In thousands)	December 30, December 31, \$		
	2017	2016	Change
Cash and cash equivalents	\$ 106,815	\$ 106,552	\$263
Short-term marketable securities	4,982	10,308	(5,326)
Total Cash and cash equivalents and Short-term marketable securities	\$ 111,797	\$ 116,860	\$(5,063)

As of December 30, 2017, we had total Cash and cash equivalents and Short-term marketable securities of \$111.8 million, of which approximately \$89.9 million in Cash and cash equivalents was held by our foreign subsidiaries. We manage our global cash requirements considering (i) available funds among the subsidiaries through which we conduct business, (ii) the geographic location of our liquidity needs, and (iii) the cost to access international cash balances. As of December 30, 2017, we could access all cash held by our foreign subsidiaries without incurring

significant additional expense.

The net decrease in Cash and cash equivalents and Short-term marketable securities of \$5.1 million between December 31, 2016 and December 30, 2017, was primarily driven by \$35.4 million cash used in the repayment of debt and \$21.4 million of cash used in capital expenditures and payment for software licenses, offset by \$7.9 million of proceeds from the sale of a building, and by \$38.5 million in cash provided by operations, which includes a total \$18.0 million received from a patent sale transaction.

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Accounts receivable, net

(In thousands)	December 30, 2017	December 31, 2016	\$Change	%Change
Accounts receivable, net	\$ 55,104	\$ 99,637	\$(44,533)	(44.7)%
Days sales outstanding - Overall	53	77	(24))
Days sales outstanding - Product	53	75	(22))
Days sales outstanding - Licensing and services	29	106	(77))

Accounts receivable, net as of December 30, 2017 decreased by \$44.5 million, or 44.7%, compared to December 31, 2016. A majority of the decrease in receivables was due to a decrease in product billings, net of credits, during the fourth quarter of 2017 mainly to our sell-through customers. There was an inventory buildup at our sell-through distributors during 2017 followed by a return to more normal inventory levels at the end of 2017. This resulted in a decrease in sell-through customer billings and accounts receivable of approximately \$25 million at the end of 2017. There was also a reduction of receivables related to licensing and services. The termination of our role as agent for the HDMI consortium accounted for \$6.3 million of the decrease, and collections of other licensing and services receivables outstanding at December 31, 2016 contributed another \$1.1 million to the reduction in receivables during the fiscal year ended December 30, 2017. Timing of collections and lower 2017 revenues as compared to 2016 contributed to the remaining decrease in receivables.

Overall days sales outstanding at December 30, 2017 was 53 days, a decrease of 24 days from 77 days at December 31, 2016. Days sales outstanding at December 30, 2017 related to Product revenue was 53 days, a decrease of 22 days from 75 days at December 31, 2016, as a result of the decrease in sell-through distributor billings described above. Days sales outstanding at December 30, 2017 related to Licensing and services revenue was 29 days, a decrease of 77 days from 106 days at December 31, 2016, as a result of a decrease in HDMI related receivables during the year ended December 30, 2017 due to the termination of our role as agent for the HDMI consortium.

Inventories

(In thousands)	December 30, 2017	December 31, 2016	\$Change	%Change
Inventories	\$ 79,903	\$ 79,168	\$ 735	0.9%
Months of inventory on hand	5.4	4.3	1.1	

Inventories as of December 30, 2017 increased \$0.7 million, or 0.9%, compared to December 31, 2016, primarily to support forecasted sales for various product lines and new product demand. This increase was substantially offset by an inventory decline related to the ramp down of a major consumer product's sales program.

The months of inventory on hand ratio compares the inventory balance at the end of a period to the cost of sales in that period. Our months of inventory on hand increased to 5.4 months at December 30, 2017 from 4.3 months at December 31, 2016, as the cost of sales decreased between these periods, while inventory levels remained relatively unchanged due to the reasons mentioned above.

Credit Arrangements

On March 10, 2015, we entered into a secured credit agreement (the "Credit Agreement") with Jefferies Finance, LLC and certain other lenders for purposes of funding, in part, our acquisition of Silicon Image. The Credit Agreement provided for a \$350 million term loan (the "Term Loan") maturing on March 10, 2021 (the "Term Loan Maturity Date"). We received \$346.5 million, net of an original issue discount of \$3.5 million and we paid debt issuance costs of \$8.3 million. The Term Loan bears variable interest equal to the one-month LIBOR, subject to a 1.00% floor, plus a spread of 4.25%. The current effective interest rate on the Term Loan is 6.29%.

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.

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In the second quarter of fiscal 2016, we made a required additional principal payment of \$1.7 million due to the sale of Qterics. In the first quarter of fiscal 2017, we made a required additional principal payment of \$9.9 million due to a sale of patents. In the second quarter of fiscal 2017, we made another required additional principal payment of \$8.3 million due to a sale of patents, and a required annual excess cash flow payment of \$13.7 million. There were no other required principal payments outside of our quarterly installment payments. Over the next twelve months, our principal payments will be comprised mainly of regular quarterly installments. We have determined that the annual excess cash flow payment required in fiscal 2018, as calculated according to the Credit Agreement, is not material to our Consolidated Balance Sheet at December 30, 2017.

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 at December 30, 2017.

As of December 30, 2017, we had no significant long-term purchase commitments for capital expenditures or existing used or unused credit arrangements.

Share Repurchase Program

We did not repurchase any shares in either fiscal year 2017 or 2016. We most recently repurchased shares in fiscal year 2015 under a stock repurchase program approved by our Board of Directors on March 3, 2014. This 2014 program authorized the repurchase of up to \$20.0 million of outstanding common stock from time to time over a period of twelve months. The 2014 program completed during the first quarter of fiscal 2015, during which approximately 1.1 million shares were repurchased for approximately \$7.0 million. All shares repurchased in fiscal 2015 under the 2014 program were retired during fiscal 2015 (see our Consolidated Statements of Shareholders' Equity). All repurchases were open market transactions funded from available working capital.

Contractual Cash Obligations

The following table summarizes our contractual cash obligations at December 30, 2017:
(In thousands)

Fiscal year	Operating leases (1)	Long-term Debt (2)
2018	\$ 6,310	\$ 20,027
2019	4,784	41,366
2020	4,860	71,849
2021	4,654	219,966
2022	4,694	—
Thereafter	14,259	—
	\$ 39,561	\$ 353,208

(1) Certain of our facilities and equipment are leased under operating leases, which expire at various times through 2026.

(2) Cash payments due for long-term debt include estimated interest payments, which are based on outstanding principal amounts, currently effective interest rates as of December 30, 2017, timing of scheduled payments and the debt term. See Liquidity section of Item 7 for further discussion pertaining to our Credit Arrangements.

Our significant operating leases are for our facilities in Portland and Hillsboro, Oregon; San Jose, California; Muntinlupa City, Philippines; and Shanghai, China. We also had a significant lease for a facility in Sunnyvale,

California which was terminated in February 2017.

In November 2014, we entered into a lease for a new corporate headquarters facility in Portland, Oregon which expires in March 2025. Annual rental costs are estimated at \$0.7 million with average annual increases of approximately 5%. We commenced operations at the new headquarters location in March 2015. In November 2014, we sold the property where our headquarters was formerly located in Hillsboro, Oregon for net proceeds of \$14.6 million. We leased back the majority of this facility from November 2014 until March 2015, after which we leased a smaller portion of the facility until November 2022. Annual rental costs are estimated at \$0.5 million with 3% annual increases.

Our lease in San Jose, California expires September 2026 with total annual rental costs estimated to be \$2.3 million and annual increases of approximately 3%. Two of our leases in Muntinlupa City, Philippines expire in May 2025 and June 2025, with total annual rental costs estimated to be \$0.7 million and annual increases of approximately 5%. Our lease in Shanghai expires in May 2018, with remaining rental costs estimated to be \$1.1 million. Leasehold improvements are amortized over the shorter of the non-cancelable lease term or the estimated useful life of the assets.

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New Accounting Pronouncements

The information contained under the heading "New Accounting Pronouncements" in Note 1 - Nature of Operations and Significant Accounting Policies to our Consolidated Financial Statements in Part II, Item 8 is incorporated by reference into this Part II, Item 7.

Off-Balance Sheet Arrangements

As of December 30, 2017, we did not have any off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of SEC Regulation S-K.

Non-GAAP Financial Measures

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

Management believes that these non-GAAP financial measures provide an additional and useful way of viewing aspects of our performance that, when viewed in conjunction with our U.S. GAAP results, provide a more comprehensive understanding of the various factors and trends affecting our ongoing financial performance and operating results than GAAP measures alone. In particular, investors may find the non-GAAP measures useful in reviewing our operating performance without the significant accounting charges resulting from the Silicon Image acquisition, alongside the comparably adjusted prior year results. Management also uses these non-GAAP measures for strategic and business decision-making, internal budgeting, forecasting, and resource allocation processes and believes that investors should have access to similar data when making their investment decisions. In addition, these non-GAAP financial measures facilitate management's internal comparisons to our historical operating results and comparisons to competitors' operating results.

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

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

(In thousands, except per share amounts) (unaudited)	Year Ended			
	December 30, 2017	December 31, 2016	January 2, 2016	
Revenue Reconciliation				
GAAP Revenue	\$385,961	\$427,054	\$405,966	
Acquisition related deferred revenue effect (1)	—	—	5,187	
Non-GAAP Revenue	\$385,961	\$427,054	\$411,153	
Gross Margin Reconciliation				
GAAP Gross margin	\$216,579	\$246,434	\$219,909	
Acquisition related net deferred revenue effect (1) (2)	—	—	3,691	
Acquisition related inventory fair value effect (3)	—	523	6,078	
Stock-based compensation expense - gross margin	788	888	1,416	
Non-GAAP Gross margin	\$217,367	\$247,845	\$231,094	
Gross Margin % Reconciliation				
GAAP Gross margin %	56.1	% 57.7	% 54.2	%
Cumulative effect of non-GAAP Gross Margin adjustments	0.2	% 0.3	% 2.0	%
Non-GAAP Gross margin %	56.3	% 58.0	% 56.2	%
Operating Expenses Reconciliation				
GAAP Operating expenses	\$264,199	\$273,133	\$327,141	
Amortization of acquired intangible assets	(31,340)	(33,575)	(29,580)	
Restructuring charges	(7,196)	(9,267)	(19,239)	
Acquisition related charges (4)	(3,781)	(6,305)	(22,450)	
Impairment of goodwill and acquired intangible assets	(32,431)	(7,866)	(21,655)	
Stock-based compensation expense - operations	(11,755)	(15,325)	(15,934)	
Gain on sale of building	4,624	—	—	
Non-GAAP Operating expenses	\$182,320	\$200,795	\$218,283	
(Loss) Income from Operations Reconciliation				
GAAP Loss from operations	\$(47,620)	\$(26,699)	\$(107,232)	
Acquisition related net deferred revenue effect (1) (2)	—	—	3,691	
Acquisition related inventory fair value effect (3)	—	523	6,078	
Stock-based compensation expense - gross margin	788	888	1,416	
Amortization of acquired intangible assets	31,340	33,575	29,580	
Restructuring charges	7,196	9,267	19,239	
Acquisition related charges (4)	3,781	6,305	22,450	
Impairment of goodwill and acquired intangible assets	32,431	7,866	21,655	
Stock-based compensation expense - operations	11,755	15,325	15,934	
Gain on sale of building	(4,624)	—	—	
Non-GAAP Income from operations	\$35,047	\$47,050	\$12,811	

(1) Fair value adjustment to deferred revenue from purchase accounting

(2) Fair value adjustment to deferred cost of sales from purchase accounting

(3) Fair value adjustment for inventory step-up from purchase accounting

(4) Includes legal fees and outside services that were related to our proposed acquisition by Canyon Bridge Acquisition Company, Inc.
and stock-based compensation and severance costs related to change in control.

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

(In thousands, except per share amounts) (unaudited)	Year Ended		
	December 30, 2017	December 31, 2016	January 2, 2016
(Loss) Income from Operations % Reconciliation			
GAAP Loss from operations %	(12.3)%	(6.3)%	(26.4)%
Cumulative effect of non-GAAP Gross Margin and Operating adjustments	21.4 %	17.3 %	29.5 %
Non-GAAP Income from operations %	9.1 %	11.0 %	3.1 %
Other (Expense) Income, Net Reconciliation			
GAAP Other (expense) income, net	\$(3,286)	\$ 2,844	\$(1,072)
Loss (gain) on sale of assets and business units	1,496	(2,646)	—
Non-GAAP Other income (expense), net	\$(1,790)	\$ 198	\$(1,072)
Income Tax Expense Reconciliation			
GAAP Income tax expense	\$ 849	\$ 9,917	\$ 32,540
Estimated tax effect of non-GAAP adjustments (5)	—	—	(21,030)
Non-GAAP Income tax expense	\$ 849	\$ 9,917	\$ 11,510
Net (Loss) Income Reconciliation			
GAAP Net loss	\$(70,562)	\$(54,099)	\$(159,233)
Acquisition related net deferred revenue effect (1) (2)	—	—	3,691
Acquisition related inventory fair value effect (3)	—	523	6,078
Stock-based compensation expense - gross margin	788	888	1,416
Amortization of acquired intangible assets	31,340	33,575	29,580
Restructuring charges	7,196	9,267	19,239
Acquisition related charges (4)	3,781	6,305	22,450
Impairment of goodwill and acquired intangible assets	32,431	7,866	21,655
Stock-based compensation expense - operating expense	11,755	15,325	15,934
Gain on sale of building	(4,624)	—	—
Loss (gain) on sale of assets and business units	1,496	(2,646)	—
Estimated tax effect of non-GAAP adjustments (5)	—	—	21,030
Non-GAAP Net income (loss)	\$ 13,601	\$ 17,004	\$(18,160)

(1) Fair value adjustment to deferred revenue from purchase accounting

(2) Fair value adjustment to deferred cost of sales from purchase accounting

(3) Fair value adjustment for inventory step-up from purchase accounting

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

and stock-based compensation and severance costs related to change in control.

(5) We calculate non-GAAP tax expense by applying our tax provision model to year-to-date and projected income after adjusting for non-GAAP items. The difference between calculated values for GAAP and non-GAAP tax expense has been included as the “Estimated tax effect of non-GAAP adjustments.”

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

(In thousands, except per share amounts) (unaudited)	Year Ended		
	December 31, 2017	December 31, 2016	January 2, 2016
Net (Loss) Income Per Share Reconciliation			
GAAP Net loss per share - basic and diluted	\$ (0.58)	\$ (0.45)	\$ (1.36)
Cumulative effect of Non-GAAP adjustments	0.69	0.59	1.21
Non-GAAP Net income (loss) per share - basic and diluted	\$ 0.11	\$ 0.14	\$ (0.15)
Shares used in per share calculations:			
Basic	122,677	119,994	117,387
Diluted - GAAP (6)	122,677	119,994	117,387
Diluted - non-GAAP (6)	124,499	121,957	117,387

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

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Exchange Rate Risk

We collect an annual Japanese consumption tax refund in yen, and as a result of having various international subsidiary and branch operations, our financial position and results of operations are subject to foreign currency exchange rate risk.

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

	December 30, 2017	December 31, 2016
Total cost of contracts for Japanese yen (thousands)	\$ 2,204	\$ 2,323
Number of contracts	2	2
Settlement month	June 2018	June 2017

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

The net fair value of these contracts was favorable by approximately \$0.1 million at December 30, 2017 and favorable by approximately \$0.2 million at December 31, 2016. A hypothetical 10% unfavorable exchange rate change in the yen against the U.S. dollar would have resulted in an unfavorable change in net fair value of approximately \$0.2 million at both December 30, 2017 and December 31, 2016. Changes in fair value resulting from foreign exchange rate fluctuations would be substantially offset by the change in value of the underlying hedged transactions.

Interest Rate Risk

At December 30, 2017, we had \$306.8 million outstanding on the \$350 million gross term loan outstanding under our Credit Agreement, with a variable contractual interest rate based on the one-month LIBOR as of December 30, 2017, subject to a 1.00% floor, plus a spread of 4.25%. A hypothetical increase in the one-month LIBOR by 1% (100 basis points) during fiscal 2017 would have increased our Interest expense by approximately \$3.2 million for the twelve month period ended December 30, 2017.

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Item 8. Financial Statements and Supplementary Data

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CONSOLIDATED BALANCE SHEETS

(In thousands, except share and par value data)	December 30, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 106,815	\$ 106,552
Short-term marketable securities	4,982	10,308
Accounts receivable, net of allowance for doubtful accounts	55,104	99,637
Inventories	79,903	79,168
Prepaid expenses and other current assets	16,567	19,035
Total current assets	263,371	314,700
Property and equipment, net	40,423	49,481
Intangible assets, net	51,308	118,863
Goodwill	267,514	269,758
Deferred income taxes	198	372
Other long-term assets	13,147	13,709
Total assets	\$ 635,961	\$ 766,883
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses (includes restructuring)	\$ 54,405	\$ 80,933
Accrued payroll obligations	10,416	9,865
Current portion of long-term debt	1,508	33,767
Deferred income and allowances on sales to sell-through distributors	17,250	32,257
Deferred licensing and services revenue	68	728
Total current liabilities	83,647	157,550
Long-term debt	299,667	300,855
Other long-term liabilities	34,954	38,048
Total liabilities	418,268	496,453
Commitments and contingencies (Notes 13 and 20)	—	—
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; 123,895,000 shares issued and outstanding as of December 30, 2017 and 121,645,000 shares issued and outstanding as of December 31, 2016	1,239	1,216
Additional paid-in capital	695,768	680,315
Accumulated deficit	(477,862)	(406,945)
Accumulated other comprehensive loss	(1,452)	(4,156)
Total stockholders' equity	217,693	270,430
Total liabilities and stockholders' equity	\$ 635,961	\$ 766,883

The accompanying notes are an integral part of these Consolidated Financial Statements.

Table of ContentsLATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share data)	Year Ended		
	December 31, 2017	December 31, 2016	January 2, 2016
Revenue:			
Product	\$356,502	\$390,704	\$369,200
Licensing and services	29,459	36,350	36,766
Total revenue	385,961	427,054	405,966
Costs and expenses:			
Cost of product revenue	164,657	179,983	184,914
Cost of licensing and services revenue	4,725	637	1,143
Research and development	103,357	117,518	136,868
Selling, general, and administrative	90,718	98,602	97,349
Amortization of acquired intangible assets	31,340	33,575	29,580
Restructuring charges	7,196	9,267	19,239
Acquisition related charges	3,781	6,305	22,450
Impairment of goodwill and acquired intangible assets	32,431	7,866	21,655
Gain on sale of building	(4,624)	—	—
Total costs and expenses	433,581	453,753	513,198
Loss from operations	(47,620)	(26,699)	(107,232)
Interest expense	(18,807)	(20,327)	(18,389)
Other (expense) income, net	(3,286)	2,844	(1,072)
Loss before income taxes	(69,713)	(44,182)	(126,693)
Income tax expense	849	9,917	32,540
Net loss	\$(70,562)	\$(54,099)	\$(159,233)
Net loss per share, basic and diluted	\$(0.58)	\$(0.45)	\$(1.36)
Shares used in per share calculations, basic and diluted	122,677	119,994	117,387

The accompanying notes are an integral part of these Consolidated Financial Statements

Table of ContentsLATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

(In thousands)	Year Ended		
	December 31, 2017	December 31, 2016	January 2, 2016
Net loss	\$(70,562)	\$ (54,099)	\$(159,233)
Other comprehensive loss:			
Unrealized loss related to marketable securities, net of tax	(73)	(172)	(69)
Reclassification adjustment for losses related to marketable securities included in other (expense) income	252	79	442
Translation adjustment loss, net of tax	2,620	(1,303)	(1,243)
Change in actuarial valuation of defined benefit pension	(95)	150	(156)
Comprehensive loss	\$(67,858)	\$ (55,345)	\$(160,259)

The accompanying notes are an integral part of these Consolidated Financial Statements

Table of ContentsLATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands, except par value data)	Common Stock (\$0.01 par value)		Paid-in capital	Treasury stock	Accumulated deficit	Accumulated other comprehensive loss	Total
	Shares	Amount					
Balances, January 3, 2015	117,288	\$1,173	\$635,299	\$ —	\$(193,613)	\$(1,884)	\$440,975
Net loss for 2015	—	—	—	—	(159,233)	—	(159,233)
Unrealized loss related to marketable securities, net of tax	—	—	—	—	—	(69)	(69)
Recognized loss on redemption of marketable securities, previously unrealized	—	—	—	—	—	442	442
Translation adjustments, net of tax	—	—	—	—	—	(1,243)	(1,243)
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of tax	2,415	25	2,161	—	—	—	2,186
Stock repurchase	—	—	—	(6,970)	—	—	(6,970)
Retirement of treasury stock	(1,052)	(11)	(6,959)	6,970	—	—	—
Stock-based compensation expense related to options, ESPP and RSUs	—	—	18,396	—	—	—	18,396
Fair value of partially vested stock options and RSUs assumed in acquisition	—	—	5,139	—	—	—	5,139
Defined benefit pension, net of actuarial losses	—	—	—	—	—	(156)	(156)
Redemption of noncontrolling interest, net of previous accretion to redemption value.	—	—	6,053	—	—	—	6,053
Balances, January 2, 2016	118,651	\$1,187	\$660,089	\$ —	\$(352,846)	\$(2,910)	\$305,520
Net loss for 2016	—	—	—	—	(54,099)	—	(54,099)
Unrealized loss related to marketable securities, net of tax	—	—	—	—	—	(172)	(172)
Recognized loss on redemption of marketable securities, previously unrealized	—	—	—	—	—	79	79
Translation adjustments, net of tax	—	—	—	—	—	(1,303)	(1,303)
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of tax	2,994	29	4,013	—	—	—	4,042
Stock-based compensation expense related to options, ESPP and RSUs	—	—	16,213	—	—	—	16,213
Defined benefit pension, net of actuarial losses	—	—	—	—	—	150	150
Balances, December 31, 2016	121,645	\$1,216	\$680,315	\$ —	\$(406,945)	\$(4,156)	\$270,430
Net loss for 2017	—	—	—	—	(70,562)	—	(70,562)
Unrealized loss related to marketable securities, net of tax	—	—	—	—	—	(73)	(73)

Recognized loss on redemption of marketable securities, previously unrealized	—	—	—	—	—	252	252
Translation adjustments, net of tax	—	—	—	—	—	2,620	2,620
Common stock issued in connection with the exercise of stock options, ESPP and vested RSUs, net of tax	2,250	23	2,795	—	—	—	2,818
Stock-based compensation expense related to stock options, ESPP and RSUs (1)	—	—	12,658	—	—	—	12,658
Defined benefit pension, net of actuarial losses	—	—	—	—	—	(95) (95
Accounting method transition adjustment (2)	—	—	—	—	(355) —	(355
Balances, December 30, 2017	123,895	\$1,239	\$695,768	\$ —	\$(477,862) \$(1,452) \$217,693

(1) In the third quarter of fiscal 2017, in relation to the sale of 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay

Labs testing and certification business, certain stock compensation was accelerated due to a change of control agreement. As a result of this acceleration, the equity effect of stock compensation shown above includes approximately \$0.1 million that was charged to restructuring expense as part of the June 2017 Plan (see Note 15).

(2) During the first quarter of fiscal 2017, we early adopted ASU 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory.

This guidance is required to be applied on a modified retrospective basis through a cumulative-effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption. As a result of this adoption, we recorded a nominal amount to accumulated deficit, as detailed in the table above.

The accompanying notes are an integral part of these Consolidated Financial Statements

Table of ContentsLATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)	Year Ended		
	December 31, 2017	December 31, 2016	January 2, 2016
Cash flows from operating activities:			
Net loss	\$(70,562)	\$(54,099)	\$(159,233)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	57,861	61,806	60,808
Impairment of goodwill and acquired intangible assets	32,431	7,866	21,655
Amortization of debt issuance costs and discount	1,982	1,350	2,835
Change in deferred income tax provision	(154)	90	21,367
Loss on sale or maturity of marketable securities	252	79	333
Gain on forward contracts	(77)	(184)	—
Stock-based compensation expense	12,543	16,213	18,396
(Gain) loss on disposal of fixed assets	(75)	597	—
Gain on sale of building	(4,624)	—	—
Loss (Gain) on sale of assets and business units	1,496	(2,646)	—
Impairment of cost-method investment	1,761	1,459	492
Changes in assets and liabilities:			
Accounts receivable, net	44,613	(11,419)	4,578
Inventories	(902)	(3,272)	9,868
Prepaid expenses and other assets	889	(2,270)	(6,710)
Accounts payable and accrued expenses (includes restructuring)	(23,588)	8,338	6,301
Accrued payroll obligations	726	402	(10,202)
Income taxes payable	(556)	3,216	1,749
Deferred income and allowances on sales to sell-through distributors	(15,007)	14,391	2,920
Deferred licensing and services revenue	(495)	(183)	1,958
Net cash provided by (used in) operating activities	38,514	41,734	(22,885)
Cash flows from investing activities:			
Proceeds from sales of and maturities of short-term marketable securities	12,689	14,897	142,956
Purchase of marketable securities	(7,420)	(7,490)	(15,982)
Cash paid for business acquisition, net of cash acquired	—	—	(431,068)
Proceeds from sale of building	7,895	—	—
Cash paid for costs of sale of building	(1,004)	—	—
Capital expenditures	(12,855)	(16,717)	(18,209)
Proceeds from sale of assets and business units, net of cash sold	967	1,972	—
Repayment received on short-term loan to cost-method investee	2,000	—	—
Short-term loan to cost-method investee	(2,000)	—	—
Cash paid for a cost-method investment	—	(1,000)	(5,000)
Cash paid for software licenses	(8,532)	(9,035)	(9,515)
Net cash used in investing activities	\$(8,260)	\$(17,373)	\$(336,818)

The accompanying notes are an integral part of these Consolidated Financial Statements

Table of ContentsLATTICE SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS (continued)

(In thousands)	Year Ended		
	December 31, 2017	December 31, 2016	January 2, 2016
Cash flows from financing activities:			
Restricted stock unit withholdings	\$(3,267)	\$(3,565)	\$(3,493)
Proceeds from issuance of common stock	6,085	7,607	5,679
Net proceeds from issuance of long-term debt	—	—	346,500
Cash paid for debt issuance costs	—	—	(8,283)
Repayment of debt	(35,429)	(5,154)	(2,625)
Purchase of treasury stock	—	—	(6,970)
Cash paid to redeem noncontrolling interest	—	—	(867)
Net cash (used in) provided by financing activities	\$(32,611)	\$(1,112)	\$329,941
Effect of exchange rate change on cash	\$2,620	\$(1,303)	\$(1,243)
Net increase (decrease) in cash and cash equivalents	263	21,946	(31,005)
Beginning cash and cash equivalents	106,552	84,606	115,611
Ending cash and cash equivalents	\$106,815	\$106,552	\$84,606
Supplemental cash flow information:			
Change in unrealized loss related to marketable securities, net of tax, included in Accumulated other comprehensive loss	\$73	\$172	\$69
Income taxes paid, net of refunds	\$2,387	\$9,359	\$8,339
Interest paid	\$20,649	\$18,159	\$11,071
Accrued purchases of property and equipment	\$588	\$1,028	\$1,277
Note receivable resulting from sale of assets and business units	\$3,050	\$—	\$—
Transfer of residual temporary equity to additional paid-in capital on redemption of noncontrolling interest	\$—	\$—	\$6,773

The accompanying notes are an integral part of these Consolidated Financial Statements

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LATTICE SEMICONDUCTOR CORPORATION NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1 - Nature of Operations and Significant Accounting Policies

Nature of Operations

Lattice Semiconductor (“Lattice,” the “Company,” “we,” “us,” or “our”) is a Delaware company that 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. Our broad end-market exposure extends from mobile devices and consumer electronics to industrial and automotive equipment, communications and computing infrastructure, and licensing.

We do not manufacture our own silicon wafers. We maintain strategic relationships with large, established semiconductor foundries located in Asia to source our finished silicon wafers. In addition, all of our assembly operations and most of our test and logistics operations are performed by outside suppliers located in Asia. We perform certain test operations and reliability and quality assurance processes internally.

We place substantial emphasis on new product development and believe that continued investment in this area is required to maintain and improve our competitive position. Our product development activities emphasize new proprietary products, advanced packaging, enhancement of existing products and process technologies, and improvement of software development tools. Research and development activities occur primarily in: Hillsboro, Oregon; San Jose, California; Shanghai, China; and Muntinlupa City, Philippines.

Fiscal Reporting Period

We report based on a 52 or 53-week fiscal year ending on the Saturday closest to December 31. Our fiscal 2017, 2016, and 2015 were 52-week years that ended December 30, 2017, December 31, 2016, and January 2, 2016 respectively. Our fiscal 2018 will be a 52-week year and will end on December 29, 2018. All references to quarterly or yearly financial results are references to the results for the relevant fiscal period.

Principles of Consolidation

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 prior fiscal years 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 \$1.5 million and \$0.5 million for the years ended December 31, 2016 and January 2, 2016, respectively. We have reclassified the prior year losses to Other (expense) income, net on our Consolidated Statements of Income 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. 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, inventory, goodwill (including the assessment of reporting unit), intangible assets, current and deferred income taxes, accrued liabilities (including restructuring charges and bonus arrangements), deferred income and allowances on sales to sell-through distributors, 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.

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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.

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 certificates of deposit and 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 (expense) income, 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 our Consolidated Statements of Stockholders' Equity).

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:

	December 30, 2017	December 31, 2016
Total cost of contracts for Japanese yen (in thousands)	\$ 2,204	\$ 2,323
Number of contracts	2	2
Settlement month	June 2018	June 2017

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Although these hedges mitigate our foreign currency exchange rate exposure from an economic perspective, they were not designated as "effective" hedges under U.S. GAAP and as such are adjusted to fair value through Other (expense) income, net, with gains of approximately \$0.1 million and approximately \$0.2 million, respectively, for the years ended December 30, 2017 and December 31, 2016. We do not hold or issue derivative financial instruments for trading or speculative purposes.

Concentration Risk

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

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

	Year Ended			
	December 30, 2017		January 2, 2016	
	2017	2016	2017	2016
Revenue attributable to top five end customers	26 %	27 %	32 %	
Revenue attributable to largest end customer	7.3 %	9.9 %	9.3 %	

No end customer accounted for more than 10% of total revenue during these periods.

Sales through distributors have historically accounted for a significant portion of our total revenue. Revenue attributable to resale of products by sell-through distributors as a percentage of total revenue is presented in the following table:

	Year Ended			
	December 30, 2017		January 2, 2016	
	2017	2016	2017	2016
Revenue attributable to sell-through distributors	66 %	61 %	45 %	

Our largest distributor groups also account for a substantial portion of our trade receivables. At December 30, 2017, one distributor group accounted for 54% of gross trade receivables. At December 31, 2016, two distributor groups accounted for 38% and 24%, 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 and \$9.3 million at December 30, 2017 and December 31, 2016, respectively. The allowance for doubtful accounts reflects our best estimate of probable losses inherent in the accounts receivable balance. We determine the allowance based on assessment of known troubled accounts, analysis of the aging of our accounts receivable, historical experience, management judgment, and other currently available evidence. We write off accounts receivable against the allowance when we determine a balance is uncollectible and no longer actively pursue collection of the receivable. The amounts of accounts receivable written off were insignificant for all periods presented. Bad debt expense was negligible for fiscal 2017. During fiscal 2016, we recorded a full allowance on our accounts receivable, net of deferred revenue, from a bankrupt distributor group resulting in an increase in allowance for doubtful accounts of \$9.0 million and bad debt expense of \$7.5 million in that year.

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 3 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.

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Revenue Recognition and Deferred Income

The following describes our revenue recognition policy during fiscal 2017. In fiscal 2018, we will adopt ASU 2014-09, Revenue from Contracts with Customers (Topic 606). See "New Accounting Pronouncements" later in this Note 1 for a discussion of the impact of adoption on our revenue recognition.

Product Revenue

We sell our products through several channels: directly to end customers, through a network of independent manufacturers' representatives, and indirectly through a network of independent sell-in and sell-through distributors. Distributors provide periodic data regarding the product, price, quantity, and end customer when products are resold, as well as the quantities of our products they still have in stock.

Revenue from sales to original equipment manufacturers ("OEMs") and sell-in distributors is generally recognized upon shipment. Reserves for sell-in stock rotations, where applicable, are estimated based primarily on historical experience and provided for at the time of shipment. Revenue from sales by our sell-through distributors is recognized at the time of reported resale. Under both types of revenue recognition, persuasive evidence of an arrangement exists, the price is fixed or determinable, title has transferred, collection of resulting receivables is reasonably assured, and there are no remaining customer acceptance requirements and no remaining significant performance obligations.

Orders from our sell-through distributors are initially recorded at published list prices; however, for a majority of our sales, the final selling price is determined at the time of resale and in accordance with a distributor price agreement. For this reason, we do not recognize revenue until products are resold by sell-through distributors to an end customer. In certain circumstances, we allow sell-through distributors to return unsold products. At times, we protect our sell-through distributors against reductions in published list prices.

At the time of shipment to sell-through distributors, we (a) record accounts receivable at published list price since there is a legally enforceable obligation from the distributor to pay us currently for product delivered, (b) relieve inventory for the carrying value of goods shipped since legal title has passed to the distributor, and (c) record deferred revenue and deferred cost of sales in Deferred income and allowances on sales to sell-through distributors in the liability section of our Consolidated Balance Sheets. Revenue and cost of sales to sell-through distributors are deferred until either the product is resold by the distributor or, in certain cases, return privileges terminate, at which time Revenue and Cost of product revenue are reflected in Net loss in our Consolidated Statements of Operations, and Accounts receivable, net is adjusted to reflect the final selling price.

The components of Deferred income and allowances on sales to sell-through distributors are presented in the following table:

(In thousands)	December 30, 2017	December 31, 2016
Inventory valued at published list price and held by sell-through distributors with right of return	\$ 74,788	\$ 86,218
Allowance for distributor advances	(44,990)	(37,090)
Deferred cost of sales related to inventory held by sell-through distributors	(12,548)	(16,871)
Total Deferred income and allowances on sales to sell-through distributors	\$ 17,250	\$ 32,257

Licensing and Services Revenue

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 market adoption curves associated with our technology and standards.

From time to time we enter into patent sale and licensing agreements to monetize and license a broad portfolio of our patented inventions. Such licensing agreements may include upfront license fees and ongoing royalties. The contractual terms of the agreements generally provide for payments of upfront license fees and/or royalties over an extended period of time. Revenue from such license fees is recognized when payments become due and payable as long as all other revenue recognition criteria are met, while revenue from royalties is recognized when reported to us by customers.

We enter into IP licensing agreements that generally provide licensees the right to incorporate our IP components into their products pursuant to terms and conditions that vary by licensee. Revenue earned under these agreements is classified as Licensing and services revenue. Our IP licensing agreements generally include multiple elements, which may include one or more off-the-shelf or customized IP licenses bundled with support services covering a fixed period of time, generally one year. If the different elements of a multiple-element arrangement qualify as separate units of accounting, we allocate the total arrangement consideration to each element based on relative selling price.

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Amounts allocated to off-the-shelf IP licenses are recognized at the time of sale provided the other conditions for revenue recognition have been met. Amounts allocated to the support services are deferred and recognized on a straight-line basis over the support period, generally one year. Certain licensing agreements provide for royalty payments based on agreed-upon royalty rates, which may be fixed or variable depending on the terms of the agreement. The amount of revenue we recognize is based on a specified time period or on the agreed-upon royalty rate multiplied by the reported number of units shipped by the customer.

From time to time, we enter into IP licensing agreements that involve significant modification, customization or engineering services. Revenues derived from these contracts are accounted for using the percentage-of-completion method or completed contract method. The completed contract method is used for contracts where there is a risk associated with final acceptance by the customer or for short-term contracts.

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. As a result, the HDMI agent is unable to distribute the majority of the royalties collected to the Founders and, given that the fixed and determinable revenue recognition criteria has not been met, we are unable to recognize all of the HDMI royalty revenue for the fiscal year ended December 30, 2017. Our estimate of unbilled receivables from the HDMI agent that are not reflected in our financial statements at December 30, 2017 are in the \$5 million to \$10 million range.

We acted as the agent of the HDMI consortium until December 31, 2016. From time to time, as the agent, we performed audits on royalty reporting customers to ensure compliance. As a result of those compliance efforts, we entered into settlement agreements for the payment of unreported royalties. The contractual terms of those agreements provided for upfront payment of unreported royalties or payment over a period of time, generally not to exceed one year. Revenue from those arrangements was recognized when the agreement was executed by both parties, as long as price was fixed and determinable and collection was reasonably assured.

Inventories and Cost of Product Revenue

Inventories are recorded at the lower of average cost determined on a first-in-first-out basis or market. We establish provisions for inventory if it is obsolete or we hold quantities which are in excess of projected customer demand. The creation of such provisions results in a write-down of inventory to net realizable value and a charge to Cost of product revenue. Shipping and handling costs are included in Cost of product revenue in our Consolidated Statements of Operations.

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 (expense) income, net in the accompanying Consolidated Statements of Operations with a commensurate decrease in the carrying value of the investment (see Note 10). Upon disposition of these investments, the specific identification method is used to determine the cost basis in computing realized gains or losses.

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Impairment of Long-Lived Assets

Long-lived assets, including amortizable intangible assets, are carried on our financial statements based on their cost less accumulated depreciation or amortization. We monitor the carrying value of our long-lived 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. These events or changes in circumstances, including management decisions pertaining to such assets, are referred to as impairment indicators. If an impairment indicator occurs, we perform a test of recoverability by comparing the carrying value of the asset group to its undiscounted expected future cash flows. If the carrying values are in excess of undiscounted expected future cash flows, we measure any impairment by comparing the fair value of the asset group to its carrying value. Fair value is generally determined by considering (i) internally developed discounted projected cash flow analysis of the asset group; (ii) actual third-party valuations; and/or (iii) information available regarding the current market for similar asset groups. If the fair value of the asset group is determined to be less than the carrying amount of the asset group, an impairment in the amount of the difference is recorded in the period that the impairment indicator occurs and is included in our Consolidated Statements of Operations. Estimating future cash flows requires significant judgment and projections may vary from the cash flows eventually realized, which could impact our ability to accurately assess whether an asset has been impaired. The results of our assessments are detailed in Note 9.

Valuation of Goodwill

Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. We review goodwill for impairment annually during the fourth quarter and whenever events or changes in circumstances indicate the carrying value of goodwill may not be recoverable. When evaluating whether goodwill is impaired, we make a qualitative assessment to determine if it is more likely than not that the reporting unit's fair value is less than the carrying amount. If the qualitative assessment determines that it is more likely than not that the fair value is less than the carrying amount, the fair value of the reporting unit is compared with its carrying value (including goodwill). If the fair value of the reporting unit is less than its carrying value, an indication of goodwill impairment exists for the reporting unit and we must measure the impairment loss. The impairment loss, if any, is recognized for any excess of the carrying amount of the reporting unit's goodwill over the implied fair value of the goodwill. The implied fair value of goodwill is determined by allocating the fair value of the reporting unit in a manner similar to purchase price allocation and the residual fair value after this allocation is the implied fair value of the reporting unit goodwill. Fair value of the reporting unit is determined using a discounted cash flow analysis. If the fair value of the reporting unit exceeds its carrying value, no further impairment analysis is needed. For purposes of testing goodwill for impairment, we currently operate as a single reporting unit: the core Lattice ("Core") business, which includes intellectual property and semiconductor devices. In fiscal 2015 only, we separately tested goodwill for impairment in Qterics, a discrete software-as-a-service business unit that was an immaterial operating segment in the Lattice legal entity structure prior to its sale to an unrelated third party in April 2016. Although these two operating units constituted two reportable segments in fiscal 2015, we combined Qterics with our Core business and reported them together as one reportable segment due to the immaterial nature of the Qterics unit. The results of our assessments are detailed in Note 9.

Leases

We lease office space and classify our leases as either operating or capital lease arrangements in accordance with the criteria of ASC 840, "Leases." Certain of our office space operating leases contain provisions under which monthly rent escalates over time and certain leases may also contain provisions for reimbursement of a specified amount of leasehold improvements. When lease agreements contain escalating rent clauses, we recognize expense on a straight-line basis over the term of the lease. When lease agreements provide allowances for leasehold improvements, we capitalize the leasehold improvement assets and amortize them on a straight-line basis over the lesser of the lease

term or the estimated useful life of the asset, and reduce rent expense on a straight-line basis over the term of the lease by the amount of the asset capitalized.

Restructuring Charges

Expenses associated with exit or disposal activities are recognized when incurred under ASC 420, "Exit or Disposal Cost Obligations," for everything but severance. Because the Company has a history of paying severance benefits, the cost of severance benefits associated with a restructuring plan is recorded when such costs are probable and the amount can be reasonably estimated in accordance with ASC 712, "Compensation - Nonretirement Postemployment Benefits." When leased facilities are vacated, an amount equal to the total future lease obligations from the date of vacating the premises through the expiration of the lease, net of any future sublease income, is recorded as a part of restructuring charges.

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Research and Development

Research and development expenses include costs for compensation and benefits, development masks, engineering wafers, depreciation, licenses, and outside engineering services. These expenditures are for the design of new products, intellectual property cores, processes, packaging, and software to support new products. Research and development costs are expensed as incurred.

Accounting for Income Taxes

Our provision for income tax is comprised of our current tax liability and changes in deferred tax assets and liabilities. Deferred tax assets and liabilities are recognized for the expected tax consequences of temporary differences between the tax bases of assets and liabilities and their reported amounts in the financial statements using enacted tax rates and laws that will be in effect when the difference is expected to reverse. Valuation allowances are provided to reduce deferred tax assets to an amount that in management's judgment is more-likely-than-not to be recoverable against future taxable income. U.S. tax reform required a deemed repatriation of foreign earnings as of December 30, 2017 and no future U.S. taxes will be due on these earnings because of enactment of a 100% dividends received deduction. Foreign earnings may be subject to withholding taxes if they are distributed and repatriated to Lattice in the United States.

Our income tax calculations are based on application of the respective U.S. federal, state or foreign tax law. Our tax filings, however, are subject to audit by the relevant tax authorities. Accordingly, we recognize tax liabilities based upon our estimate of whether, and the extent to which, additional taxes will be due when such estimates are more-likely-than-not to be sustained. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. To the extent the final tax liabilities are different than the amounts originally accrued, the increases or decreases as well as any interest or penalties are recorded as income tax expense or benefit in the Consolidated Statements of Operations.

In assessing the ability to realize deferred tax assets, we evaluate both positive and negative evidence that may exist and consider whether it is more-likely-than-not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible.

Any adjustment to the net deferred tax asset valuation allowance is recorded in the Consolidated Statements of Operations for the period that the adjustment is determined to be required.

Stock-Based Compensation

We use the Black-Scholes option pricing model to estimate the fair value of substantially all share-based awards consistent with the provisions of ASC 718, "Compensation - Stock Compensation." Option pricing models, including the Black-Scholes model, require the use of input assumptions, including expected volatility, expected term, expected dividend rate, and expected risk-free rate of return. The assumptions for expected volatility and expected term most significantly affect the grant date fair value.

We have also used a lattice-based option-pricing model to determine and fix the fair value of stock options with a market condition granted to certain executives. This valuation model incorporates a Monte-Carlo simulation, and considered the likelihood that we would achieve the market condition. The options have a two year vesting and 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 of 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.

New Accounting Pronouncements

Recently Adopted Accounting Standards

In July 2015, the FASB issued ASU 2015-11, Simplifying the Measurement of Inventory. Under this ASU, inventory will be measured at the “lower of cost and net realizable value” and options that currently exist for “market value” will be eliminated. The ASU defines net realizable value as the “estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation.” ASU 2015-11 is effective for interim and annual periods beginning after December 15, 2016. Early application is permitted and should be applied prospectively. Our adoption of this accounting standard update in the first quarter of fiscal 2017 did not have a material impact on our consolidated financial statements.

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In March 2016, the FASB issued ASU 2016-09, Compensation - Stock Compensation, Improvements to Employee Share-Based payment Accounting (Topic 718). This update is intended to provide simplification of the accounting for share based payment transactions, including the accounting for income taxes, forfeitures, and statutory tax withholding requirements, as well as classification in the statement of cash flows. The guidance is effective for interim and annual periods beginning after December 15, 2016. Early application is permitted and should be applied prospectively. Our adoption of this accounting standard update in the first quarter of fiscal 2017 did not have a material impact on our consolidated financial statements.

In October 2016, the FASB issued ASU 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory. This update is intended to recognize the income tax consequences of intra-entity transfers of assets other than inventory when they occur by removing the exception to postpone recognition until the asset has been sold to an outside party. For public business entities, this guidance is effective for interim and annual periods beginning after December 15, 2017. Early adoption is permitted, and it is required to be applied on a modified retrospective basis through a cumulative-effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption. We early adopted this accounting standard in the first quarter of fiscal 2017 and recorded a nominal amount to accumulated deficit based on the guidance, as detailed in our Consolidated Statements of Stockholders' Equity.

Recently Issued Accounting Standards

In May 2014, the FASB issued Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606), which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. In August 2015, the FASB issued ASU 2015-14 deferring the effective date of ASU 2014-09 to periods beginning on or after December 15, 2017, with early adoption permitted for annual reporting periods beginning after December 15, 2016, and interim periods within that year. The new standard allows for two transition methods - (i) a full retrospective method applied to each prior reporting period presented, or (ii) a modified retrospective method applied with the cumulative effect of adoption recognized on December 31, 2017, the first day of our fiscal 2018. We will adopt this guidance on December 31, 2017 using the modified retrospective transition method, which will result in an adjustment to accumulated deficit for the cumulative effect of applying this guidance to contracts in process as of the adoption date. Under this approach, we will not restate the prior financial statements presented. This guidance 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 before the change, and an explanation of the reasons for significant changes.

Based on our current assessment of the impacts of the standard to revenue, we believe the most significant impact of the new standard will be to accelerate the timing of revenue recognition on product shipments to our sell-through distributors. Assuming all other revenue recognition criteria have been met, the new guidance would require 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 is our current practice. The impact of this change will depend primarily on the level of inventory held by sell-through 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 current standard. Revenue to our sell-through distributors accounted for approximately 66% and 61% of our total revenue, respectively, during the years ended December 30, 2017 and December 31, 2016. We also anticipate that the new standard will require us to recognize certain licensing revenues which are not recognizable under current GAAP due to the fixed and determinable revenue recognition criteria not being met. We anticipate that the cumulative adjustment resulting from this recognition will be a reduction to 2018 opening accumulated deficit in the \$20 million to \$30 million range, and we don't anticipate a material change relating to capitalization of commission expenses.

In January 2016, the FASB issued ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, to mainly change the accounting for investments in equity securities and financial liabilities carried at fair value as well as to modify the presentation and disclosure requirements for financial instruments. The ASU is effective for interim and annual periods beginning after December 15, 2017, with early adoption permitted. Adoption of the ASU is retrospective with a cumulative adjustment to retained earnings or accumulated deficit as of the adoption date. We do not expect that the adoption of ASU 2016-01 will have a material effect on our consolidated financial statements.

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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 new guidance requires a modified prospective transition approach to recognize and measure leases at the beginning of the earliest period presented. 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. See Note 13 - Lease Obligations for our future minimum lease commitments under operating leases.

In August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments. The new guidance is intended to reduce diversity in practice in how cash receipts and cash payments are classified in the statement of cash flows. For public business entities, this guidance will be effective for interim and annual periods beginning after December 15, 2017. Early adoption is permitted. We do not expect that the adoption of ASU 2016-15 will have a material effect on our consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-01, Clarifying the Definition of a Business, which narrows the existing definition of a business and provides a framework for evaluating whether a transaction should be accounted for as an acquisition (or disposal) of assets or a business. This update requires an entity to evaluate if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets; if so, the set of transferred assets and activities (collectively, the set) is not a business. To be considered a business, the set would need to include an input and a substantive process that together significantly contribute to the ability to create outputs. The standard also narrows the definition of outputs. The definition of a business affects areas of accounting such as acquisitions, disposals and goodwill. Under the new guidance, fewer acquired sets are expected to be considered businesses. For public business entities, this guidance is effective for interim and annual periods beginning after December 15, 2017. The impact of ASU 2017-01 will depend upon the nature of future acquisitions or dispositions that we may make.

In January 2017, the FASB issued ASU 2017-04, Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment, which simplifies the subsequent measurement of goodwill by eliminating step two from the goodwill impairment test. Under the new guidance, an entity will recognize an impairment charge for the amount by which the carrying value exceeds the fair value. This standard is effective for annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2019. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017 and requires a prospective transition method. We will early adopt this accounting standard effective fiscal 2018 on a prospective basis. We do not expect the standard to have an impact on our consolidated financial statements. We expect the adoption of this update to simplify our annual goodwill impairment testing process, by eliminating the need to estimate the implied fair value of a reporting unit's goodwill, if its respective carrying value exceeds fair value.

In May 2017, the FASB issued ASU 2017-09, Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting, which provides clarity on which changes to the terms or conditions of share-based payment awards require entities to apply the modification accounting provisions required in Topic 718. This standard is effective for all entities for annual reporting periods beginning after December 15, 2017, with early adoption permitted, including

adoption in any interim period for which financial statements have not yet been issued. We do not expect that the adoption of ASU 2017-09 will have a material effect on our consolidated financial statements.

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.

Note 2 - 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.

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A summary of basic and diluted net loss per share is presented below:

(in thousands, except per share data)	Year Ended		
	December 31, 2017	December 31, 2016	January 2, 2016
Net loss	\$(70,562)	\$(54,099)	\$(159,233)
Shares used in basic and diluted net loss per share	122,677	119,994	117,387
Basic and diluted net loss per share	\$(0.58)	\$(0.45)	\$(1.36)

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)	Year Ended		
	December 31, 2017	December 31, 2016	January 2, 2016
Stock options, RSUs, and ESPP shares excluded as they are antidilutive	6,622	8,978	9,243

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. Stock options, RSUs, and ESPP shares that are antidilutive at December 30, 2017 could become dilutive in the future.

Note 3 - Marketable Securities

We classify our marketable securities as short-term based on their nature and availability for use in current operations. Our Short-term marketable securities have contractual maturities of up to two years, with less than one year remaining term as of December 30, 2017 and December 31, 2016.

The following table summarizes the composition of our Short-term marketable securities at fair value:

(In thousands)	December 30, 2017	December 31, 2016
Short-term marketable securities:		
Corporate and government bonds and notes	\$ 4,982	\$ 10,230
Certificates of deposit	—	78
Total marketable securities	\$ 4,982	\$ 10,308

Note 4 - Fair Value of Financial Instruments

(In thousands)	Fair value measurements as of December 30, 2017				Fair value measurements as of December 31, 2016			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Short-term marketable securities	\$4,982	\$4,982	\$ —	\$ —	—	\$10,230	\$78	\$ —
Foreign currency forward exchange contracts, net	77	—	77	—	184	—	184	—
Total fair value of financial instruments	\$5,059	\$4,982	\$ 77	\$ —	—	\$10,230	\$262	\$ —

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. There were no transfers between any of the levels during fiscal 2017, 2016, and 2015.

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In accordance with ASC 320, "Investments-Debt and Equity Securities," we recorded an unrealized loss of approximately \$0.1 million during the fiscal year ended December 30, 2017, and an unrealized loss of approximately \$0.2 million during the fiscal year ended December 31, 2016 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 5 - Inventories

(In thousands)	December 30, 2017	December 31, 2016
Work in progress	\$ 49,642	\$ 50,688
Finished goods	30,261	28,480
Total inventories	\$ 79,903	\$ 79,168

Note 6 - Property and Equipment

(In thousands)	December 30, 2017	December 31, 2016
Buildings	\$ —	\$ 3,554
Computer and test equipment	155,492	162,388
Office furniture and equipment	2,914	3,460
Leasehold and building improvements	13,277	14,865
	171,683	184,267
Accumulated depreciation and amortization	(131,260)	(134,786)
	\$ 40,423	\$ 49,481

Depreciation and amortization expense for property and equipment was \$16.3 million and \$18.4 million for fiscal years 2017 and 2016, respectively. For fiscal year 2015, depreciation and amortization expense for property and equipment was \$18.1 million, including \$1.5 million of restructuring expense.

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

In November 2014, we sold land and buildings, comprising the former location of our corporate headquarters and executive office in Hillsboro, Oregon, for net proceeds of approximately \$14.6 million. This property had a historical cost of \$30.9 million and accumulated depreciation of \$17.9 million, resulting in a net gain on sale of \$1.6 million. We leased back a portion of the facilities for a lease term of eight years, resulting in deferral of the gain, which is being amortized over the life of the lease.

Note 7 - Sales of Assets and Business Units, Business Combinations, and Goodwill

Sales of Assets and Business Units

On September 30, 2017, in conjunction with our June 2017 restructuring plan (see Note 15), we sold 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business to Invecas, Inc. The fair value of purchase price consideration was \$5.3 million, which was comprised of \$2.3 million of cash and a \$3.0 million note receivable. We recorded a \$1.8 million loss on the sale, including a \$2.2 million disposal of a relative fair value share of our goodwill, which is included in Other (expense) income, net in the Consolidated Statements of Operations.

In April 2016, we sold Qterics to an unrelated third party for net proceeds of \$2.0 million, net of cash sold, resulting in a gain of \$2.6 million. The gain was included in Other (expense) income, net in the Consolidated Statements of Operations in the period of sale. In the second quarter of fiscal 2017, we received a final escrow payment of \$0.3 million related to the sale of Qterics, which was included as a gain in Other (expense) income, net in the Consolidated Statements of Operations for the period of receipt.

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Business Combinations

On March 10, 2015, we acquired 100% of the outstanding equity of Silicon Image, Inc. ("Silicon Image"), a provider of video, audio, and data connectivity solutions for the mobile, consumer electronics, and personal computer markets for total fair value purchase consideration of \$588.5 million in cash and assumed partially vested stock options and RSUs.

Purchase consideration was allocated to the tangible and intangible assets and liabilities assumed on the basis of the respective estimated fair values on the acquisition date. The estimation of the fair values of the intangible assets required the use of valuation techniques including the income approach and the cost approach, and entailed consideration of all the relevant factors that might affect the fair value such as present value factors, and estimates of future revenues and costs.

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 is instead 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 either fiscal 2017 or fiscal 2016 as no indicators of impairment were present. A \$12.7 million charge to fully impair the Qterics goodwill was recorded for fiscal 2015 (Note 9).

In the first quarter of 2016, we finalized our valuation and allocation of purchase price consideration related to the acquisition of Silicon Image, Inc. ("Silicon Image") resulting in \$2.1 million of additional long-term liabilities related to an uncertain tax position and \$0.1 million of other tax-related adjustments with an equivalent revision to Goodwill, which is reflected in the Consolidated Balance Sheets for the period ended December 31, 2016.

As part of our accounting for the asset sale to Invecas, Inc. in September 2017, we recorded a \$2.2 million disposal of a relative fair value share of our Goodwill.

Changes to the Goodwill balances on the Consolidated Balance Sheets are summarized in the following table:

(In thousands)	December 30, December 31,	
	2017	2016
Beginning balance	\$ 269,758	\$ 267,549
Additions	—	2,209
Disposals	(2,244) —
Ending balance	\$ 267,514	\$ 269,758

Note 8 - Intangible Assets

In connection with our acquisitions of Silicon Image in March 2015 and 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 and 2017, we licensed additional third-party technology. We do not believe there is any significant residual value associated with these intangible assets. We are amortizing the intangible assets using the straight-line method over their estimated useful lives.

During 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.

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. The results of our assessments are summarized below and more fully detailed in Note 9.

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During the fourth quarter of fiscal 2017, we finalized our impairment assessment procedures related to certain of the developed technology intangible assets acquired in our acquisition of Silicon Image, resulting in a \$3.8 million reduction to the preliminary impairment charge of \$36.2 million recorded in the third quarter of fiscal 2017, for a net impairment charge of \$32.4 million in fiscal 2017. During the third quarter of fiscal 2016, we recorded a \$7.9 million impairment charge to the intangible assets associated with future HDMI adopter fees. During the fourth quarter of fiscal 2015, we recorded a \$9.0 million impairment charge to the intangible assets of the then Qterics operating segment comprising developed technology of \$3.9 million, and customer relationships of \$5.1 million. With the sale of Qterics in April 2016, its balances for intangible assets, accumulated amortization, and impairment have been removed from the balance for Intangible assets, net in the Consolidated Balance Sheet as of December 31, 2016.

The following tables summarize the details of our Intangible assets, net as of December 30, 2017 and December 31, 2016:

(In thousands)	December 30, 2017				
	Weighted Average Amortization Period (in years)	Gross	Impairment	Accumulated Amortization	Intangible assets, net
Developed technology	4.7	\$ 158,700	\$ (32,431)	\$ (81,847)	\$ 44,422
Customer relationships	5.7	22,934	—	(16,696)	6,238
Licensed technology	3.5	2,392	—	(1,744)	648
Total identified intangible assets		\$ 184,026	\$ (32,431)	\$ (100,287)	\$ 51,308

(In thousands)	December 31, 2016				
	Weighted Average Amortization Period (in years)	Gross	Impairment	Accumulated Amortization	Intangible assets, net
Developed technology	4.7	\$ 141,359	\$ —	\$ (55,493)	\$ 85,866
Customer relationships	6.1	30,800	(7,866)	(13,694)	9,240
Licensed technology	3.3	2,127	—	(1,201)	926
Patents	5	769	—	(279)	490
Total identified finite-lived intangible assets		175,055	(7,866)	(70,667)	96,522
In-process research and development	indefinite	22,341	—	—	22,341
Total identified intangible assets		\$ 197,396	\$ (7,866)	\$ (70,667)	\$ 118,863

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

(In thousands)	Year Ended		
	December 30, 2017	December 31, 2016	January 2, 2016
Research and development	\$569	\$ 745	\$ 731
Amortization of acquired intangible assets	31,340	33,575	29,580
	\$31,909	\$ 34,320	\$ 30,311

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The annual expected amortization expense of acquired intangible assets with finite lives is as follows:

(In thousands) Amount

2018	\$19,419
2019	16,619
2020	7,504
2021	5,148
2022	2,352
Thereafter	266
Total	\$51,308

Note 9 - Impairment of Goodwill and Acquired Intangible Assets

In connection with our acquisitions of Silicon Image in March 2015 and SiliconBlue in December 2011 we recorded goodwill and identifiable intangible assets related to developed technology, customer relationships, licensed technology, patents, and in-process research. We monitor the carrying value of our goodwill and acquired 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.

In the third quarter of fiscal 2017, we updated our annual strategic long-range plan, which resulted in revised forecasts. We also sold 100% of the equity of our Hyderabad, India subsidiary and certain assets related to our Simplay Labs testing and certification business to an unrelated third party. We determined that these activities constituted impairment indicators related to the developed technology intangible assets acquired in our acquisition of Silicon Image. Our assessment of the fair value of these intangible assets concluded that they had been impaired as of September 30, 2017, and we recorded a preliminary impairment charge of \$36.2 million in the Consolidated Statements of Operations. During the fourth quarter of fiscal 2017, we completed our detailed analysis and evaluation of the information and assumptions used in the determination of the impairment charge, which included reviewing information, inputs, assumptions, and valuation methodologies used to estimate the fair value of these intangible assets, and finalization of review by an independent valuation expert. As a result, we recorded a \$3.8 million reduction to the preliminary impairment charge recorded in the third quarter of fiscal 2017, for a net impairment charge of \$32.4 million in fiscal 2017. No impairment charges related to goodwill were recorded in fiscal 2017 as no indicators of impairment were present.

In September 2016, the Founders of the HDMI consortium, of which we are a member, amended the existing Founders Agreement as part of a regular amendment process resulting in changes to our role as agent for the HDMI consortium and to the model for sharing adopter fee revenues. Under the terms of the amendment agreement, our role as the agent was terminated effective January 1, 2017 and a new independent entity was appointed to act as the new HDMI licensing agent with responsibility for licensing and the distribution of royalties among Founders. As a result of the amended model for sharing revenue, we will be entitled to a reduced share of adopter fees paid by parties adopting the HDMI standard. We determined that this modification constituted an impairment indicator related to the intangible assets acquired in the Silicon Image acquisition associated with future HDMI adopter fees. Our assessment of the fair value of these intangible assets concluded that they had been impaired as of the end of the third quarter of fiscal 2016, and we recorded a \$7.9 million impairment charge in the Consolidated Statements of Operations. No impairment charges related to goodwill were recorded in fiscal 2016 as no indicators of impairment were present.

For fiscal 2015, the impairment of goodwill and intangible assets was related to Qterics, Inc., which was acquired in the March 2015 acquisition of Silicon Image. During the fourth quarter of fiscal 2016, we determined that we

experienced an impairment indicator related to the long-lived assets of the Qterics operating segment. For purposes of testing for impairment in fiscal 2015, the Company operated as two reporting units: the continuing core Lattice ("Core") business, which includes intellectual property and semiconductor devices, and Qterics, which was a discrete software-as-a-service business unit in the Lattice legal entity structure until it was sold in April 2016. Although these two operating segments constituted two reportable segments in fiscal 2015, we combined Qterics with our Core business and reported them together as one reportable segment due to the immaterial nature of the Qterics segment. Following this assessment, we concluded that goodwill and intangible assets had been impaired in the Qterics segment as of December 31, 2016. As a result we recorded an impairment charge amounting to \$21.7 million, or approximately 92% of the previous value of goodwill and intangible assets, in the Consolidated Statements of Operations for the year ended December 31, 2016, comprising \$12.7 million pertaining to goodwill, \$3.9 million pertaining to developed technology, and \$5.1 million pertaining to customer relationships. The valuation was based on the market approach and was our best estimate of fair value as of the end of fiscal 2015. No impairment charges were recorded for the Core segment in fiscal 2015.

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Note 10 - 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 each of the second and third quarters of fiscal 2017, we advanced the investee \$1.0 million through a short-term instrument, bringing our total short-term advances to the investee to \$2.0 million. As these advances were due and payable in the fourth quarter of fiscal 2017, they were included in Prepaid expenses and other current assets in our Consolidated Balance Sheets while outstanding. The investee repaid the total advances in October 2017.

In 2017, we signed new development and licensing contracts with the investee, and the investee obtaining 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, since we are not the primary beneficiary of the investee, are not holding in-substance common stock, and do not have a significant amount of influence to direct the activities that most significantly impact the investee's economic performance, accordingly we account for our investment in this company under the cost method.

We assessed this investment for impairment as of December 30, 2017 by applying a fair value analysis using a revenue multiple approach. This yielded a fair value for our ownership stake of \$2.3 million, which was less than its carrying value at the date of assessment. We determined that this impairment was other-than-temporary and adjusted the carrying value to the fair value.

The total impairment adjustments against this investment that we have recognized through Other (expense) income, net in the Consolidated Statements of Operations are presented in the following table:

(In thousands)	Year Ended		
	December 30, 2017	December 31, 2016	January 2, 2016
Impairment of cost-basis investment	\$(1,761)	\$(1,459)	\$(492)

Through December 30, 2017, 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 detailed in the following table:

(In thousands)	Total
Balance at January 2, 2016	\$4,508
Investment made during fiscal year	1,000
Impairment of cost-basis investment	(1,459)
Balance at December 31, 2016	4,049
Impairment of cost-basis investment	(1,761)
Balance at December 30, 2017	\$2,288

At December 30, 2017, our maximum exposure to loss as a result of involvement with this VIE totals \$2.9 million, which is comprised of the \$2.3 million fair value of our investment plus \$0.6 million of prepaid royalties further described in the section below on the related collaborative arrangement.

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Collaborative Arrangement

Concurrent with the initiation of the investment discussed above, we entered into a collaborative arrangement with the investee. 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 periodic 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. The schedule of periodic payments for prepaid royalties is as follows:

Fiscal Year	Frequency	Amount of each payment (In thousands)
2017	In the fourth calendar quarter	\$ 625
2018	At the end of each calendar quarter	\$ 875
2019	At the end of each calendar quarter	\$ 1,250

At December 30, 2017, royalties prepaid to the investee total \$0.6 million and are included in Prepaid expenses and other current assets in our Consolidated Balance Sheets. There is no liability related to these payments as they are contractually associated with specific future periods.

Note 11 - Accounts Payable and Accrued Expenses

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

(In thousands)	December 30, December 31,	
	2017	2016
Trade accounts payable	\$ 35,350	\$ 37,800
Liability for non-cancelable contracts	4,531	5,744
Payable to members of the MHL and HDMI consortia*	87	9,698
Other accrued expenses	14,437	27,691
Total accounts payable and accrued expenses	\$ 54,405	\$ 80,933

* As an agent of the MHL consortium, we administer royalty reporting and distributions to the members of this consortium.

This excludes amounts payable to us, and is payable quarterly based on collections from MHL customers. Our role as the agent of the HDMI consortium terminated on January 1, 2017 and, therefore, the balance as of December 30, 2017 is due to MHL consortium members only.

Note 12 - Redeemable Noncontrolling Interest

With the acquisition of Silicon Image on March 10, 2015, we also assumed a redeemable noncontrolling interest which comprised a 7% investment in Qterics amounting to \$7.0 million invested by the noncontrolling interest holder initially entered into on December 4, 2014. The investment was redeemable at fair market value at the third-party holder's option on the third, fourth, or fifth year anniversaries. If the fair market value at the redemption date, as negotiated and agreed to by the parties, did not exceed \$21 million, the redemption price would be 130% of the fair

market value.

As of the acquisition date, the fair value of the noncontrolling interest was determined to be \$7.2 million, recorded as temporary equity and reported as Redeemable noncontrolling interest in the Consolidated Balance Sheets. We elected to accrete the carrying value to the estimated redemption value over the three-year redemption period and reported the accretion charge as a reduction to Additional-paid-in-capital. During fiscal 2015, we recorded cumulative accretion charges amounting to \$0.4 million bringing the value of the redeemable noncontrolling interest to \$7.6 million.

During the fourth quarter of fiscal 2015, we entered into an agreement with the holder pursuant to which the entire interest was redeemed for a cash payment of approximately \$0.9 million. The difference between the carrying value and the redemption amount of approximately \$6.7 million was partially offset by accretion charges and net loss attributable to noncontrolling interest recorded prior to redemption totaling approximately \$0.6 million. The net amount of approximately \$6.1 million was recorded as Additional paid-in-capital during the year ended January 2, 2016 (See our Consolidated Statements of Stockholders' Equity).

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Note 13 - Lease Obligations

Certain of our facilities are leased under operating leases, which expire at various times through 2026. Rental expense under operating leases was \$8.9 million, \$9.5 million and \$7.4 million for fiscal years 2017, 2016 and 2015, respectively. Future minimum lease commitments at December 30, 2017 were as follows:

Fiscal year (In thousands)	Amount
2018	\$6,310
2019	4,784
2020	4,860
2021	4,654
2022	4,694
Thereafter	14,259
	\$39,561

Note 14 - Income Taxes

The domestic and foreign components of loss before income taxes were as follows:

(In thousands)	Year Ended		
	December 30, 2017	December 31, 2016	January 2, 2016
Domestic	\$(17,341)	\$ (33,962)	\$(93,229)
Foreign	(52,372)	(10,220)	(33,464)
Loss before taxes	\$(69,713)	\$ (44,182)	\$(126,693)

The components of the income tax expense are as follows:

(In thousands)	Year Ended		
	December 30, 2017	December 31, 2016	January 2, 2016
Current:			
Federal	\$508	\$ 1,896	\$968
State	30	13	80
Foreign	304	7,918	10,634
	842	9,827	11,682
Deferred:			
Federal	—	—	18,713
State	—	—	2,318
Foreign	7	90	(173)
	7	90	20,858
Income tax expense	\$849	\$ 9,917	\$32,540

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Income tax expense differs from the amount of income tax determined by applying the applicable U.S. statutory federal income tax rate to pretax income as a result of the following differences:

	Year Ended		
	December 30, 2017	December 31, 2016	January 2, 2016
	%	%	%
Statutory federal rate	(35)	(35)	(35)
Adjustments for tax effects of:			
State taxes, net	(7)	7	(6)
Research and development credits	(1)	(2)	(2)
Stock compensation	3	3	1
Foreign rate differential	28	15	12
Foreign dividends	1	—	5
Foreign withholding taxes	—	9	3
Other permanent	—	3	4
Goodwill impairment	—	—	4
Valuation allowance	(73)	17	46
Change in uncertain tax benefit accrual	1	5	(8)
Stock compensation adoption	(8)	—	—
Tax rate change	93	—	3
Other	(1)	1	(1)
Effective income tax rate	1	23	26

ASC 740, "Income Taxes", provides for the recognition of deferred tax assets if realization of these assets is more-likely-than-not. We evaluate both positive and negative evidence to determine if some or all of our deferred tax assets should be recognized on a quarterly basis.

In fiscal 2015, we completed the acquisition of Silicon Image, Inc. At the time of the acquisition, we evaluated the combined entity's net deferred income taxes, which included an assessment of the cumulative income or loss over the prior three-year period, to determine if a valuation allowance is required. After considering the significant loss for fiscal 2015, the company recorded a valuation allowance on its net federal and state deferred tax assets. We concluded that it was more-likely-than-not that we would not be able to realize the benefit of our remaining U.S. deferred tax assets, resulting in an increase to the valuation allowance and an increase to the tax provision of \$21.0 million in fiscal 2015. We exercised significant judgment and considered estimates about our ability to generate revenue and gross profits sufficient enough to offset expenditures in future periods within the United States.

Through December 30, 2017, 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. The net decrease in the total valuation allowance affecting the effective tax rate for the year ended December 30, 2017 was approximately \$51.0 million, mainly attributable to the tax impact of the recent tax law change that reduced the value of our income tax deferred tax assets and reduced the related valuation allowance.

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The components of our net deferred tax assets are as follows:

(In thousands)	December 30, 2017	December 31, 2016
Deferred tax assets:		
Accrued expenses and reserves	\$ 3,096	\$ 5,143
Inventory	2	290
Deferred Revenue	228	426
Stock-based and deferred compensation	4,018	7,269
Intangible assets	19,576	20,063
Fixed assets	216	678
Net operating loss carry forwards	86,410	137,521
Tax credit carry forwards	90,530	89,174
Capital loss carry forwards	3,926	962
Other	2,323	2,973
	210,325	264,499
Less: valuation allowance	(209,691)	(260,687)
Net deferred tax assets	634	3,812
Deferred tax liabilities:		
Fixed Assets	559	—
Other	16	3,746
Total deferred tax liabilities	575	3,746
Net deferred tax assets	\$ 59	\$ 66

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 2036. We had state NOL carryforwards (pretax) of approximately \$162.9 million that expire at various dates from 2018 through 2036. We also had federal and state credit carryforwards of \$50.2 million and \$59.2 million, respectively. Of the \$59.3 million state credit carryforwards, \$57.9 million do not expire. The federal and remaining state credits expire at various dates from 2018 through 2037.

Future utilization of federal and state net operating losses and tax credit carry forwards may be limited if cumulative changes to ownership exceed 50% within any three-year period. This has not occurred through fiscal 2017. If there is a significant change in ownership, future tax attribute utilization may be restricted (§382 limitation) and NOL carryforwards and/or R&D credits will be reduced to reflect the limitation.

U.S. tax reform required a deemed repatriation of deferred foreign earnings as of December 30, 2017 and no future U.S. taxes will 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.

At December 30, 2017, our unrecognized tax benefits associated with uncertain tax positions were \$44.8 million, of which \$42.9 million, if recognized, would affect the effective tax rate, subject to valuation allowance. As of December 30, 2017, interest and penalties associated with unrecognized tax benefits were \$8.1 million.

Our liability for uncertain tax positions (including penalties and interest) was \$26.9 million and \$29.6 million at December 30, 2017 and December 31, 2016, respectively, and is recorded as a component of Other long-term liabilities on our Consolidated Balance Sheets. The remainder of our uncertain tax position exposure of \$24.6 million is netted against deferred tax assets.

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The following table summarizes the changes to unrecognized tax benefits for fiscal years 2017, 2016 and 2015:

(In thousands)	Amount
Balance at January 3, 2015	\$18,673
Additions based on tax positions related to the current year	4,381
Additions based on tax positions of prior years	—
Additions due to acquisition	41,083
Reduction for tax positions of prior years	(14,958)
Settlements	—
Reduction as a result of lapse of applicable statute of limitations	(972)
Balance at January 2, 2016	48,207
Additions based on tax positions related to the current year	2,573
Additions based on tax positions of prior years	530
Additions due to acquisition	—
Reduction for tax positions of prior years	(1,824)
Settlements	—
Reduction as a result of lapse of applicable statute of limitations	(1,863)
Balance at December 31, 2016	47,623
Additions based on tax positions related to the current year	471
Additions based on tax positions of prior years	11
Additions due to acquisition	—
Reductions for tax positions of prior years	(1,226)
Settlements	—
Reduction as a result of lapse of applicable statute of limitations	(2,047)
Balance at December 30, 2017	\$44,832

At December 30, 2017, it is reasonably possible that \$1.5 million of unrecognized tax benefits and \$0.1 million of associated interest and penalties could be recognized during the next twelve months.

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 return for China is currently under examination for 2014 through 2016. We are not under examination in any other jurisdiction.

On December 18, 2015, the Protecting Americans from Tax Hikes Act of 2015 (the "2015 Tax Act") was enacted. The 2015 Tax Act included several business tax provisions including the permanent extension of the credit for qualified research and development. The tax benefit in each year resulting from these reinstatements of the federal research and development tax credit was offset by a valuation allowance and therefore did not impact our annual effective tax rate.

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.

The SEC issued SAB 118 on December 22, 2017 which addresses situations where the registrant does not have all the necessary information available or analyzed to complete the accounting for certain income tax effects under the 2017 Tax Act. Due to the lack of authoritative guidance issued, complexity, and enactment timing of the 2017 Tax Act, we have 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.

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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 15 - 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 will be expensed as incurred. Under this plan, approximately \$0.1 million of credit, and \$7.3 million and \$13.3 million of expense was incurred during the years ended December 30, 2017, December 31, 2016, and January 2, 2016, respectively. Approximately \$20.5 million of total expense has been incurred through December 30, 2017 under the March 2015 Plan, and we believe this amount approximates the total costs expected.

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, which we do not expect to be material but which will be expensed as incurred. Under this reduction, approximately \$0.7 million of credit, and \$2.0 million and \$5.9 million of expense was incurred during the years ended December 30, 2017, December 31, 2016, and January 2, 2016, respectively. Approximately \$7.2 million of total expense has been incurred through December 30, 2017 under the September 2015 Reduction, and we believe this amount approximates the total costs expected.

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. Approximately \$8.0 million of total expense has been incurred through December 30, 2017 under the June 2017 Plan, and we expect the total cost to be approximately \$8.0 million to \$19.0 million.

For fiscal 2017, the approximately \$8.0 million of expense related to the June 2017 Plan has been offset by credits from the March 2015 Plan and the September 2015 Reduction discussed above totaling approximately \$0.8 million, resulting in the net charge of approximately \$7.2 million 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 activity related to the restructuring plans described above:

(In thousands)	Severance & related *	Lease termination	Software Contracts & Engineering Tools**	Other	Total
Balance at January 3, 2015	\$ —	\$ 43	\$ —	\$ 139	\$ 182

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Restructuring charges	12,861	2,667	3,040	671	19,239
Costs paid or otherwise settled	(9,165)	(1,705)	(2,663)	(810)	(14,343)
Balance at January 2, 2016	\$ 3,696	\$ 1,005	\$ 377	\$—	\$5,078
Restructuring charges	2,883	2,993	1,903	1,488	9,267
Costs paid or otherwise settled	(5,778)	(2,962)	(2,255)	(1,476)	(12,471)
Balance at December 31, 2016	\$ 801	\$ 1,036	\$ 25	\$12	\$1,874
Restructuring charges	2,484	811	3,066	835	7,196
Costs paid or otherwise settled	(2,093)	(977)	(2,731)	(822)	(6,623)
Balance at December 30, 2017	\$ 1,192	\$ 870	\$ 360	\$25	\$2,447

* Includes employee relocation costs and accelerated stock compensation

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

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Note 16 - 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 6.29%.

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 second quarter of fiscal 2016, we made a required additional principal payment of \$1.7 million due to the sale of Qterics. In the first quarter of fiscal 2017, we made a required additional principal payment of \$9.9 million due to a sale of patents. In the second quarter of fiscal 2017, we made another required additional principal payment of \$8.3 million due to a sale of patents, and a required annual excess cash flow payment of \$13.7 million. There were no other required principal payments outside of our quarterly installment payments. Over the next twelve months, our principal payments will be comprised mainly of regular quarterly installments. We have determined that the annual excess cash flow payment required in fiscal 2018, as calculated according to the Credit Agreement, is not material to our Consolidated Balance Sheet at December 30, 2017.

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 at December 30, 2017.

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

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

(in thousands)	December 30, 2017	December 31, 2016
Principal amount	\$ 306,791	\$ 342,221
Unamortized original issue discount and debt issuance costs	(5,616)	(7,599)
Less: Current portion of long-term debt	(1,508)	(33,767)
Long-term debt	\$ 299,667	\$ 300,855

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

(in thousands)	Year Ended		
	December 30, 2017	December 31, 2016	January 2, 2016
Contractual interest	\$ 16,503	\$ 18,518	\$ 15,225
Amortization of debt issuance costs and discount	1,982	1,350	2,835

Total Interest expense related to the Term Loan \$ 18,485 \$ 19,868 \$ 18,060

As of December 30, 2017, expected future principal payments on the Term Loan were as follows:

(in
Fiscal year thousands)

2018	\$ 3,500
2019	26,235
2020	59,187
2021	217,869
	\$ 306,791

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Note 17 - Common Stock Repurchase Program

We did not repurchase any shares in either fiscal year 2017 or 2016. We most recently repurchased shares in fiscal year 2015 under a stock repurchase program approved by our Board of Directors on March 3, 2014. This 2014 program authorized the repurchase of up to \$20.0 million of outstanding common stock from time to time over a period of twelve months. The 2014 program completed during the first quarter of fiscal 2015, during which approximately 1.1 million shares were repurchased for approximately \$7.0 million. All shares repurchased in fiscal 2015 under the 2014 program were retired during fiscal 2015 (see our Consolidated Statements of Shareholders' Equity). All repurchases were open market transactions funded from available working capital.

Note 18 - Stockholders' Equity

Employee and Director Stock Options, Restricted Stock and ESPP

We have four equity incentive plans (the "1996 Stock Incentive Plan," the "2001 Stock Plan," the "2013 Incentive Plan" and the "2011 Non-Employee Director Equity Incentive Plan"). Awards granted under the 1996 Stock Incentive Plan and the 2001 Stock Plan remain outstanding, but no shares are available for future awards under these plans. Shares remain available for grants to employees and non-employee directors only under the 2013 Incentive Plan and the 2011 Non-Employee Director Equity Incentive Plan, respectively. "Incentive stock options" under Section 422 of the U.S. Internal Revenue Code and restricted stock unit ("RSU") grants are part of our equity compensation practices for employees who receive equity grants. Options and RSUs generally vest quarterly over a four-year period beginning on the grant date. The contractual terms of options granted do not exceed ten years.

In May 2012, the Company's stockholders approved the 2012 Employee Stock Purchase Plan ("2012 ESPP"), which authorizes the issuance of 3.0 million shares of common stock to eligible employees to purchase shares of common stock through payroll deductions, which cannot exceed 10% of an employee's compensation. The purchase price of the shares is the lower of 85% of the fair market value of the stock at the beginning of each six-month offering period or 85% of the fair market value at the end of such period. During fiscal 2017 only, the ESPP was suspended. We have treated the 2012 ESPP as a compensatory plan. We recorded no related compensation expense in fiscal 2017, and related compensation expense of \$0.6 million and \$0.4 million for fiscal years 2016 and 2015, respectively.

At December 30, 2017, a total of 3.6 million shares of our common stock were available for future grants under the 2013 Incentive Plan and the 2011 Non-Employee Director Equity Incentive Plan. Shares subject to stock option grants that expire or are canceled, without delivery of such shares, generally become available for re-issuance under equity incentive plans. At December 30, 2017, a total of 1.9 million shares of our common stock were available for future purchases under the 2012 ESPP. On March 10, 2015, in conjunction with the acquisition of Silicon Image, we assumed certain outstanding stock option and RSU grants of the Silicon Image Equity Incentive Plans. We assumed all stock option grants that were unvested or vested and out-of-the-money and all outstanding unvested RSU grants. The exchange ratio for the conversion was 1.09816 for all grants. The conversion ratio was determined by the weighted average closing price of Lattice common stock for the ten days prior to the acquisition date divided by the offer price of \$7.30. The converted outstanding option grants totaled 2,087,605 shares and converted RSU grants totaled 2,025,255 shares as of March 10, 2015. As of December 30, 2017, 275,991 options and 30,679 RSU shares arising from this conversion remained outstanding.

Stock-Based Compensation

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

Year Ended

(In thousands)	December 31, January 2,		
	2017	2016	2016
Cost of products sold	\$795	\$ 888	\$ 1,416
Research and development	5,245	7,928	9,141
Selling, general, and administrative	6,503	7,397	6,793
Acquisition related charges	—	—	4,293
Total stock-based compensation	\$12,543	\$ 16,213	\$ 21,643

Of the \$21.6 million total stock-based compensation for the twelve months ended January 2, 2016, \$3.9 million was paid in cash during the period as a result of the acquisition of Silicon Image on March 10, 2015.

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ASC 718, "Compensation-Stock Compensation ("ASC 718")," requires that we recognize compensation expense for only the portion of employee and director options and ESPP rights that are expected to vest.

The fair values of each option award on the date of grant and of the shares expected to be issued under the employee stock purchase plan are estimated using the Black-Scholes valuation model and the assumptions noted in the following table. The expected term is based on historical vested option exercises and includes an estimate of the expected term for options that are fully vested and outstanding. The expected volatility of both stock options and ESPP shares is based on the daily historical volatility of our stock price, measured over the expected term of the option or the ESPP purchase period. The risk-free interest rate is based on the implied yield on a U.S. Treasury zero-coupon issue with a remaining term closest to the expected term of the option. The dividend yield reflects that we have not paid any cash dividends since inception and do not intend to pay any cash dividends in the foreseeable future.

The following table summarizes the assumptions used in the valuation of stock option and ESPP compensation:

	Year Ended		
	December 30, 2017	December 31, 2016	January 2, 2016
Employee and Director Stock Options			
Expected volatility	40.96% to 48.01%	44.2% to 50.8%	43.6% to 47.3%
Risk-free interest rate	1.99% to 2.09%	.94% to 2.06%	1.4% to 1.7%
Expected term (years)	4.08 to 4.25	4.06 to 4.78	4.08 to 4.75
Dividend yield	—%	—%	—%
Employee Stock Purchase Plan *			
Weighted average expected volatility	—%	57.9%	33.6%
Weighted average risk-free interest rate	—%	0.43%	0.12%
Expected term	N/A	6 months	6 months
Dividend yield	—%	—%	—%

* ESPP suspended during fiscal 2017 only

At December 30, 2017, there was \$12.4 million of total unrecognized compensation cost related to unvested employee and director stock options, which is expected to be recognized over a weighted average period of 2.8 years. Our current practice is to issue new shares to satisfy option exercises. Compensation expense for all stock-based compensation awards is recognized using the straight-line method.

The following table summarizes our stock option activity and related information for the year ended December 30, 2017:

(Shares and aggregate intrinsic value in thousands)	Shares	Weighted average exercise price	Weighted average remaining contractual term (years)	Aggregate Intrinsic Value
Balance, December 31, 2016	12,566	\$ 5.70		
Granted	3,732	5.73		
Exercised	(1,803)	5.07		
Forfeited or expired	(1,556)	6.00		
Balance, December 30, 2017	12,939	\$ 5.77		
Vested and expected to vest at December 30, 2017	12,939	\$ 5.77	4.47	\$ 3,333
Exercisable, December 30, 2017	6,601	\$ 5.81	2.87	\$ 2,485

The aggregate intrinsic value in the table above represents the total pretax intrinsic value (the difference between the Company's closing stock price on the last trading day of the fiscal year and the exercise price, multiplied by the

number of in-the-money options) that would have been received by the option holders had all option holders exercised their options on that day. This amount changes based on the fair market value of the Company's stock. Total intrinsic value of options exercised for fiscal 2017, 2016 and 2015, and was \$2.2 million, \$3.3 million and \$2.5 million, respectively. The total fair value of options and RSUs vested and expensed in fiscal 2017, 2016 and 2015 and was \$12.5 million, \$15.6 million and \$18.0 million, respectively.

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The resultant grant date weighted-average fair values for stock options granted, calculated using the Black-Scholes option pricing model with the noted assumptions for stock options, were \$2.02, \$2.14 and \$2.35 for fiscal years 2017, 2016 and 2015, respectively. The weighted average fair values for the ESPP, calculated using the Black-Scholes option pricing model with the noted assumptions for the ESPP, were \$0.00, \$1.82 and \$1.51 for fiscal years 2017, 2016 and 2015, respectively.

The following table summarizes our RSU activity for the year ended December 30, 2017:

(Shares in thousands)	Shares	Weighted average grant date fair value
Balance, December 31, 2016	3,247	\$ 5.90
Granted	1,530	5.83
Exercised	(1,478)	5.95
Forfeited or expired	(533)	5.84
Balance, December 30, 2017	2,766	\$ 5.85

At December 30, 2017 there was \$14.4 million of total unrecognized compensation cost related to unvested RSUs. Our current practice is to issue new shares when RSUs vest. Compensation expense for RSUs is recognized using the straight-line method over the related vesting 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 and 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 of 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.

The following table summarizes the activity for our stock options with a market condition:

(Shares in thousands)	Unvested	Vested	Total
Balance, December 31, 2016	597	—	597
Granted	475	—	475
Vested	(92)	92	—
Exercised	—	(9)	(9)
Canceled	(273)	—	(273)
Balance, December 30, 2017	707	83	790

Additionally, we granted 70 thousand RSUs with a market condition to a certain executive in fiscal 2015. These RSUs had the same market condition as the stock options above and were canceled in fiscal 2016 due to termination.

We incurred stock compensation expense related to these stock option and RSU market condition awards of approximately \$0.5 million, \$0.8 million, and \$0.6 million in fiscal years 2017, 2016, and 2015, respectively, which is recorded as a component of total options and RSU expense.

The following table summarizes the assumptions used in the valuation of stock options and RSUs with a market condition:

Year Ended

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	December 30, 2017	December 31, 2016	January 2, 2016
Executive stock options with a market condition			
Expected volatility	41%	46%	44% to 46%
Risk-free interest rate	1.9%	1.1%	1.4%
Expected term (years)	4.5	4.5	4.5
Dividend yield	—%	—%	—%
Executive RSUs with a market condition			
Expected volatility	n/a	n/a	36.9%
Risk-free interest rate	n/a	n/a	0.6%
Expected term (years)	n/a	n/a	2.0
Dividend yield	n/a	n/a	—%

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Note 19 - Employee Benefit Plans

Qualified Investment Plan

In 1990, we adopted a 401(k) plan, which provides participants with an opportunity to accumulate funds for retirement. The plan does not allow investments in the Company's common stock. The plan allows for the Company to make discretionary matching contributions in cash. We recorded matching contributions of approximately \$0.8 million in fiscal 2017, and of approximately \$0.9 million in each of fiscal 2016 and fiscal 2015.

2017 Cash Incentive Plan

On December 20, 2016, upon the recommendation of the Compensation Committee, the Board of Directors of the Company approved the 2017 Cash Incentive Plan (the "2017 Cash Plan"). The chief executive officer, other executive officers, and other members of senior management, including vice presidents and director-level employees, together with all other employees of the Company not on the Company's sales incentive plan are eligible to participate in the 2017 Cash Plan. Under the 2017 Cash Plan, individual cash incentive payments for the eligible employees will be based both on Company financial performance, as measured by achievement of operating income (before incentive plan accruals) and revenue goals within specified ranges established by the Compensation Committee, and Company performance, as measured by the achievement of personal management objectives. The Compensation Committee determines the performance of the chief executive officer, the chief financial officer and other participants based on the achievement of the management objectives established by the Compensation Committee during the first fiscal quarter of 2017. There was \$7.2 million of expense recorded under this plan in fiscal 2017.

2016 Cash Incentive Plan

On December 21, 2015, upon the recommendation of the Compensation Committee, the Board of Directors of the Company approved the 2016 Cash Incentive Plan (the "2016 Cash Plan"). The chief executive officer, other executive officers, and other members of senior management, including vice presidents and director-level employees, together with all other employees of the Company not on the Company's sales incentive plan are eligible to participate in the 2016 Cash Plan. Under the 2016 Cash Plan, individual cash incentive payments for the eligible employees will be based both on Company financial performance, as measured by achievement of operating income (before incentive plan accruals) and revenue goals within specified ranges established by the Compensation Committee, and Company performance, as measured by the achievement of personal management objectives. The Compensation Committee determines the performance of the chief executive officer, the chief financial officer and other participants based on the achievement of the management objectives established by the Compensation Committee during the first fiscal quarter of 2016. There was \$4.7 million of expense recorded under this plan in fiscal 2016.

2015 Cash Incentive Plan

On December 4, 2014, upon the recommendation of the Compensation Committee, the Board of Directors of the Company approved the 2015 Cash Incentive Plan (the "2015 Cash Plan"). The chief executive officer, other executive officers, and other members of senior management, including vice presidents and director-level employees, together with all other employees of the Company not on the Company's sales incentive plan were eligible to participate in the 2015 Cash Plan. Under the 2015 Cash Plan, individual cash incentive payments for the eligible employees were based both on Company financial performance, as measured by achievement of operating income (before incentive plan accruals) and revenue goals within specified ranges established by the Compensation Committee, and Company performance, as measured by the achievement of personal management objectives. The Compensation Committee determined the performance of the chief executive officer, the chief financial officer and other participants based on the achievement of the management objectives established by the Compensation Committee during the first fiscal

quarter of 2015. There was \$1.0 million of expense recorded under this plan in fiscal 2015.

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Note 20 - 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 December 30, 2017. This audit may or may not result in favorable or unfavorable findings. Due to the uncertainty in both the outcome and the estimated the range of any findings, no liability been accrued as of December 30, 2017. 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 21 - Valuation and Qualifying Accounts

The following table displays the activity related to changes in our valuation and qualifying accounts:

(In thousands)	Balance at beginning of period	Balance received through acquisition	Charged (Credit) to costs and expenses	Charged (credit) to other accounts	Settlements & write-offs net of recoveries	Balance at end of period
Fiscal year ended December 30, 2017						
Allowance for deferred taxes	260,687	—	(50,960)	(36)	—	209,691
Allowance for doubtful accounts	9,299	—	3	38	31	9,371
Allowance for warranty expense	352	—	100	—	(197)	255
	\$270,338	\$ —	\$(50,857)	\$ 2	\$ (166)	\$219,317
Fiscal year ended December 31, 2016						
Allowance for deferred taxes	\$252,578	\$ —	\$7,450	\$ 659	\$ —	\$260,687
Allowance for doubtful accounts	621	—	7,362	2,284	(968)	9,299
Allowance for warranty expense	370	—	216	—	(234)	352
	\$253,569	\$ —	\$15,028	\$ 2,943	\$ (1,202)	\$270,338
Fiscal year ended January 2, 2016						
Allowance for deferred taxes	\$141,215	\$ 52,481	\$58,658	\$ 224	\$ —	\$252,578
Allowance for doubtful accounts	875	—	(438)	189	(5)	621
Allowance for warranty expense	81	136	153	—	—	370
	\$142,171	\$ 52,617	\$58,373	\$ 413	\$ (5)	\$253,569

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Note 22 - Segment and Geographic Information

Segment Information

As of December 30, 2017, we had one operating segment: the core Lattice business, which includes IP and semiconductor devices. Qterics, a discrete software-as-a-service business unit, was previously an immaterial operating segment in the Lattice legal entity structure prior to the sale of Qterics in April 2016.

Geographic Information

Our revenue by major geographic area, based on ship-to location, is presented in the following table:

(In thousands)	Year Ended					
	December 30, 2017		December 31, 2016		January 2, 2016	
United States:	\$48,315	13%	\$51,752	12%	\$33,677	8%
China*	193,590	50	186,865	44	165,582	41
Europe	44,547	12	59,835	14	55,596	14
Japan	42,286	11	49,080	12	44,067	11
Taiwan	14,846					