



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

<b>Title of each class</b>	<b>Name of each exchange on which registered</b>
Common Stock, no par value	The NASDAQ Stock Market LLC

**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 is not contained herein, and will not be contained, to the best of 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 definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer    Accelerated filer    Non-accelerated filer    Smaller reporting company



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

The aggregate market value of the registrant's common stock, no par value, held by non-affiliates of the registrant on July 30, 2016, the last business day of the registrant's most recently completed second fiscal quarter, was approximately \$244,010,322 based on the closing sale price of \$6.70 per share on that date. Shares of common stock held by each executive officer, director and shareholder known by the registrant to own 10% or more of the registrant's outstanding common stock based on Schedule 13G or 13D filings and other information known to the registrant, have been excluded because such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

There were 38,153,106 shares of the registrant's common stock outstanding on March 15, 2017.

#### DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates by reference information from the registrant's proxy statement or as an amendment to this Form 10-K to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year covered by this report on Form 10-K.

**Sigma Designs, Inc.**

**2017 ANNUAL REPORT ON FORM 10-K**

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## FORWARD-LOOKING INFORMATION

This Annual Report on Form 10-K for the year ended January 28, 2017 contains forward-looking statements within the meaning of Private Securities Litigation Reform Act of 1995, including statements regarding our future results of operations and financial position, business strategy and our objectives for future operations. The words “may,” “predict,” “potential,” “will,” “should,” “could,” “expect,” “anticipate,” “believe,” “estimate,” “intend,” “continue” and other similar expressions are intended to identify forward-looking statements. Specifically, these forward-looking statements include, but are not limited to, statements regarding:

- anticipated trends and challenges in our business and the markets in which we operate;

- our expectations regarding our expenses and international sales;

- plans for future products and services and for enhancements of existing products and services;

- our research and development;

- our belief that a portion of our products will be one of the preferred solutions for telecommunication and multi-service operators in the future;

- our anticipated cash needs and our estimates regarding our capital requirements and our needs for additional financing;

- our anticipated growth strategies;

- our intellectual property;

- our ability to attract customers; and

- sources of new revenue.

These forward-looking statements represent our current views with respect to future events, including estimates and assumptions only as of the date of this Form 10-K. As new risks emerge from time to time, it is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any

factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. We do not intend, and undertake no obligation, to update any of our forward-looking statements after the date of this report to reflect actual results or future events or circumstances that occur after the statement is made. Given these risks and uncertainties, readers are cautioned not to place undue reliance on any such forward-looking statements.

Throughout this report, we refer to Sigma Designs, Inc., together with its subsidiaries, as “we,” “us,” “our,” or “Sigma,” unless the context indicates otherwise.

## **PART I**

### **ITEM 1. BUSINESS**

#### **Overview**

We are a global integrated system-on-chip (“SoC”) solutions provider offering intelligent platforms for use in a variety of home entertainment and home control appliances. Our goal is to ensure that our chipsets serve as the foundation for some of the world’s leading consumer products, including televisions, media connectivity, smart home devices, and mobile Internet of Things (“IoT”) products. Our business generates revenue primarily by delivery of relevant, cost-effective semiconductors that are targeted toward end-product manufacturers, Original Equipment Manufacturers, or OEMs, and Original Design Manufacturers, or ODMs. We also derive a portion of our revenue from other products and services, including technology licenses, software development kits, and engineering support services for hardware and software.

We sell our products into two target markets: Connected Smart TV Platforms and IoT Devices. Connected Smart TV Platforms products consist of a range of platforms that are based on highly integrated chips, embedded software, and hardware reference designs. These products include all of our products that are sold into digital televisions, connected media processors and players delivering IP streaming video, including hybrid versions of these products, and wired home networking controller chipsets that are designed to provide connectivity solutions between various home entertainment products and incoming video streams. IoT Devices consist of our wireless Z-Wave chipsets, modules and mobile IoT cellular solutions.

Starting with the first quarter of fiscal 2017, we have combined certain target markets commensurate with changes taking effect in our industry as a whole. Specifically, we combined the Smart TV, Media Connectivity and Set-top Box markets into one target market, which we refer to as the Connected Smart TV Platforms target market. This target market is intended to include all of our products sold into or supporting the digital television experience including products designed for video-post processing, delivering of IP streaming video, audio, VoIP, or data and the equipment intended to connect these various home entertainment products. We have historically and continue to operate under the belief that the Smart TV, Set-top Box and Media Connectivity products complement their respective value propositions to the markets into which we sell. This combination is intended to present this value proposition as a holistic solution or platform for the anticipated convergence of IP-video, audio and data delivery across any device within the connected home. All previously reported amounts in prior periods have been adjusted retrospectively to reflect our target market changes. Our IoT Devices market product categorizations remain unchanged, and beginning in the fourth quarter of fiscal 2016 reflects the operations resulting from our acquisition of Bretelon, Inc. (“Bretelon”).

## **Products**

### *Media Processor*

Our media processor product line consists of a range of functionally similar platforms that are based on highly integrated chips, embedded software, and hardware reference designs. These highly integrated chips typically include all the functions required to create a complete system solution with only the addition of memory. The integrated functions include application processing (“CPU”), graphics processing (“GPU”), media processing (audio and video decoding/encoding), display processing, security management, memory control, and peripheral interfaces. Our embedded software suite provides an operating environment and coordinates the real-time processing of digital video and audio content, is readily customizable by our customers and is interoperable with multiple standard operating systems. Our reference system designs provide a hardware implementation of the circuit board, access to our embedded software suite, and can include prototypes for customer evaluation and use. We believe our products deliver industry-leading performance in video decoding, picture quality, and software breadth, and this value proposition is why manufacturers select our products.



Our chipsets are generally configured for either the smart television (“Smart TV”) or streaming set-top box, the latter of which includes related products, such as connected media players. Chipsets created for Smart TV obtain inputs from high definition multimedia interface (“HDMI”) and analog video and provide outputs to flat panel interfaces. Chipsets created for the Set-top Box obtain inputs from Ethernet and other broadcast interfaces and provide output to HDMI and analog video. Core components are therefore shared across these products while their configured hardware/software platforms and support are offered separately.

#### *Media Connectivity Controllers*

Our Media Connectivity product line consists of wired home networking controller chipsets that are designed to provide connectivity solutions between various home entertainment products and incoming video streams. We believe these connectivity solutions provide consumers additional connectivity choices with increased flexibility and reliability and allow system integrators and service providers an opportunity to reduce the time and cost of home networking installations. Our Media Connectivity solutions are based on the HomePNA (“HPNA”), HomePlug AV (“HPAV”), and G.hn standards. HPNA is a standard used for transferring internet protocol, or IP, content across coaxial cables and phone lines whereas HPAV is used for transferring IP content across power lines. G.hn is the next generation International Telecommunications Union (“ITU”) standard ratified in 2011 to create a unified global standard across coaxial cables, phone lines, and power lines. Products based on these technologies enable service providers, such as telecommunication carriers, cable operators and satellite providers, to deliver high definition television services (“HDTV”) and other media-rich applications throughout the home. Our HomePNA chipsets comply with the ITU G.9954 standard to support distribution of multimedia content throughout the home, while our HomePlug AV chipsets provide connectivity over existing powerline wiring, supporting advanced encryption standard (“AES”), high quality of service (“QoS”) and remote management and diagnostic capabilities. Our G.hn chipset is compliant with ITU G.9960/61 which supports connectivity over any type of existing wires inside the home. We designed the G.hn chipset to employ multiple input, multiple output (“MIMO”) technology to deliver higher throughput with extended coverage even in the presence of high noise conditions. To date, we have not generated significant revenue from our products based on HPAV or G.hn technologies.

### *IoT Devices*

Our IoT Devices family consists of our wireless Z-Wave chips, modules and cellular-based mobile IoT tracking tags and modems. Our Z-Wave chips and modules are incorporated into devices that enable consumers to enjoy advanced home control and automation functionality, such as home security, environmental and energy control and monitoring, within both new and existing homes. Devices that incorporate our wireless chips and modules operate on the Z-Wave mesh networking protocol. Our Z-Wave wireless chips utilize a low-bitrate, low-power, low-cost RF communication technology that provides an interoperable platform for home automation security and monitoring solutions. We derive most of our revenue within our IoT Devices product line by selling a module, which includes a Z-Wave chip plus additional circuitry and components that provide our customers with a ready-to-use solution. Our Z-Wave chips and the Z-Wave protocol they use to communicate commands have been built into an ecosystem of over 1,600 certified interoperable products, consisting primarily of intelligent appliances for use within the home.

Our mobile IoT solutions are currently used primarily for tracking applications, such as small tags that can be attached to track pets, keys, children, luggage, and vehicles. These solutions are based on the Long-Term Evolution (“LTE”) network and leading edge systems technology (from our acquisition of Bretelon in fiscal 2016) to provide an ultra-low power and low-cost device. We believe this technology is very versatile and has the ability to be powered by inexpensive coin cell batteries or other power supply methods, such as from an external DC input and rechargeable batteries. We anticipate the formal introduction of this product line in the second half of fiscal 2018. Most of our mobile IoT revenue to date has been based on non-recurring engineering (“NRE”) contracts.

### *License Arrangements and Other Products*

From time to time, we derive revenue from the license of our internally developed intellectual property. We also offer certain legacy products that are sold into prosumer and other industrial applications. We also derive revenue from the sale of products including software development kits, and engineering support services for hardware and software. These products account for a minor portion of our total revenue.

## **Target Markets**

### *Connected Smart TV Platforms Market*

The Connected Smart TV Platforms market (previously reported as three separate target markets of Smart TV, Media Connectivity and Set-top Box) consists of all products that are sold into digital televisions as well as other adjacent

markets using chipset products that are designed for video post-processing, products delivering IP streaming video, including hybrid versions of these products and communication devices that use a standard protocol to connect equipment inside the home and stream IP-based video and audio, VoIP, or data through wired or wireless connectivity. We serve this market with our media processor chips, dedicated post-processing products and home networking controllers.

#### *IoT Devices Market*

The IoT Devices market consists of both smart home applications (including gateways and automated consumer devices) and mobile IoT applications (primarily tracking tags). Our smart home product line is marketed under our Z-Wave brand of wireless chips, modules and Z-Wave mesh networking protocol.

#### *License and Other Markets*

The license and other markets includes other products and services, including technology licenses, software development kits, and engineering support services for hardware and software.

*Characteristics of Our Business*

We do not enter into long-term commitment contracts with our customers, instead we rely on customer purchase orders to generate substantially all of our net revenue. However, our failure to accurately forecast demand can lead to product shortages that can impede production by our customers, may harm our relationship with these customers or lead to excess inventory, which could negatively impact our gross margins in a particular period. During fiscal 2017, 2016 and 2015, we recorded provisions for excess inventory of \$2.0 million, \$3.2 million and \$4.3 million, respectively, primarily as a result of the end of life of certain products.

Our Connected Smart TV Platforms market is based on the annual cycle of product launches. Major new consumer products are designed during the spring, produced during the summer and launched in the fall to take advantage of the holiday selling season. We expect our Connected Smart TV Platforms market to experience seasonality typical of the consumer electronics market, wherein the holiday selling season commands the highest sell-through of consumer electronic end-products, making the third quarter typically the strongest selling season for semiconductor components such as our chips and chipsets. We expect to experience lower sales in our first and fourth fiscal quarters and higher sales in our second and/or third fiscal quarters as a result of this seasonality of demand. Therefore, our operating results may vary significantly from quarter to quarter.

For our Set-top Box products, we forecast demand based not only on our assessment of the requirements of our direct customers, but also on the anticipated requirements of the telecommunications carriers that our direct customers serve. We work with both our direct customers and these carriers to address the market demands and the necessary specifications for our technologies. Our business is substantially dependent upon being designed into set-top boxes and we must spend a considerable amount of resources to compete for these design wins. If we do obtain these design wins, it is often the case that our end customer and direct customer will continue to incorporate our chipset solutions for that generation of set-top boxes. However, if we are not designed into a particular generation of set-top boxes for our large target end customers, we stand to lose that portion of our market for the entire deployment time, which is typically two to three years.

Our IoT Devices market is characterized by the popularity of competing standards within the United States, Asia, and the European markets recognized by the ITU and other governing bodies. Our mobile IoT solutions are currently used primarily for tracking applications, such as small tags that can be attached to track pets, keys, children, luggage, and vehicles. The value of our IoT Devices market lies in the recognition of Z-Wave as a North American market leader for home automation and energy management within the security industry. The primary differentiation between Z-Wave and other competing standards in the IoT Devices market is the requirement that all Z-Wave devices conform to a strict application level of device-to-device communication and operability, which allows all Z-Wave devices to be interoperable. This interoperability requirement does not exist with any other competing technologies in the IoT Devices market. We expect our IoT Devices market to grow in direct proportion to the adoption of the Z-Wave standard by a number of service integrators and service providers.

Both of our target markets are also characterized by intense price competition. The semiconductor industry is highly competitive and, as a result, we expect our average selling prices to decline over time. On occasion, we have reduced our prices for individual customer volume orders as part of our strategy to obtain a competitive position in our markets. The willingness of customers to design our chipsets into their products depends to a significant extent upon our ability to sell our products at competitive prices. If we are unable to reduce our costs sufficiently to offset any declines in product selling prices or are unable to introduce more advanced products with higher gross margins in a timely manner, we could see declines in our market share or gross margins. We expect our gross margins will vary from period to period due to changes in our average selling prices and average costs, volume order discounts, mix of product sales, amount of development revenue and provisions for inventory excess and obsolescence.

## Industry Background

The growth of the internet, proliferation of over-the-top content, advances in communications infrastructure, digital video and audio compression technologies, home networking technologies and improvements in television displays have resulted in significant consumer demand for the end products sold in the markets that we primarily target.

The demand for our Smart TV products is driven by the advent of digital video and Internet streaming services, which supplement traditional delivery mechanisms such as over the air broadcasts, cable, satellite, DVDs and Blu-ray. The transition of premium televisions to ultra-high definition, also known as Ultra-HD, is a primary example of this shift. Ultra-HD is comprised of two general signal standards known as “4K” and “8K”. A 4K signal is comprised of 3840 pixels by 2160 lines and has four times more pixels than the older Full-High Definition or Full-HD, which consists of only 1920 pixels by 1080 lines. While new television sets capable of displaying 4K content have entered the market, widespread availability of 4K content has not been achieved. Generally, consumer multimedia entertainment applications are increasingly requiring video and audio data to be processed, transmitted, stored and displayed in an efficient and secure manner while simultaneously maintaining high resolution, multi-channel audio/video functionality and providing the end-user a variety of interactive options. In order to provide this increased functionality in a cost-effective manner, manufacturers of consumer electronics demand semiconductors that integrate more features on a single chip as well as reduce their costs, time-to-market and power consumption. A challenge to manufacturers of digital media processors is to balance the integration of more functionality with lower costs and shorter development cycles.

Our Internet Protocol television, or IPTV, portion of the Set-top Box products is primarily driven by video service providers, such as telecommunication service providers, who utilize video servers and set-top boxes to deliver television services based on streaming video over broadband connections using IP streaming. IPTV has become an important consumer multimedia application as it allows telecommunications carriers to deliver advanced video services to consumers using existing telecommunications infrastructure. These carriers are actively pursuing the deployment of IPTV because it enables them to offer attractive video, voice and data, or triple play, services and increase their revenue per subscriber. A challenge faced in delivering high-quality video content to end users across existing copper-based telecommunications infrastructure is the limited data carrying capacity of the existing wiring. This challenge can be addressed by advanced video compression technologies along with advanced high-speed communication technologies, which together can overcome the capacity limitation to allow the delivery of high definition video service throughout the home. IPTV set-top boxes currently use one of three platforms based on software developed previously by Microsoft and now provided by Ericsson or various Android or Linux providers, each of which offers certain advantages and disadvantages.

Our Media Connectivity products are involved in routing digital entertainment streams to ensure that television service and other shared media resources are accessible throughout the home. Currently, home video networking uses both wired and wireless connections to distribute entertainment streams under one of the many networking standards that exist. Although wireless networking products, operating through Wi-Fi networks is the most widely accepted industry standard for use in home video distribution, wired connectivity remains a competitive option in select

segments of the market.

Starting with the first quarter of fiscal 2017, we have combined certain target markets that we previously reported separately commensurate with changes taking effect in our industry as a whole. We combined our Smart TV, Media Connectivity and Set-top Box markets into one target market, which we refer to as the Connected Smart TV Platforms target market. This target market is intended to include all of our products sold into or supporting the digital television experience including products designed for video-post processing, delivering of IP streaming video, audio, VoIP, or data and the equipment intended to connect these various home entertainment products. We have historically and continue to operate under the belief that the Smart TV, Set-top Box and Media Connectivity products complement their respective value propositions to the markets into which we sell. This combination is intended to present this value proposition as a holistic solution or platform for the anticipated convergence of IP-video, audio and data delivery across any device within the connected home. All previously reported amounts in prior periods have been adjusted retrospectively to reflect our target market change.

Our IoT Devices market product categorizations remain unchanged, and beginning in the fourth quarter of fiscal 2016 includes products and services we now sell as a result of our acquisition of Bretelon. IoT Devices products enable remote control and monitoring of a wide variety of home appliances, such as thermostats, lighting and door locks. Much of the early adoption for home control and energy management products has been driven by installations of new security systems for the consumer home. However, the recent deployment of IoT Devices products by an increasing number of larger system integrators and service providers has perpetuated the growing popularity of this market within the consumer goods industry. Low frequency, low power solutions can offer consumers cost efficient ways to monitor and conserve energy usage, protect homes from theft and damage and improve the convenience of performing certain household activities. Z-Wave's device-interoperability allows service and security providers to deploy solutions with Z-Wave, secure in the knowledge that their solutions will operate with products from name brand vendors sold at retail and online. This allows service providers to focus on their core technology, with the services that they provide, and not the making or sourcing of the devices.

## Our Strengths

We have developed or acquired core technologies, expertise and capabilities that we believe are necessary to provide a comprehensive SoC solution or platform that includes media processing, communications, automation and control. We believe we have the following key strengths:

***Differentiable value with our Connected Smart TV Platforms technology.*** We provide our customers with industry-leading technology for a comprehensive Connected Smart TV Platforms solution and a rich portfolio of IP. Our set of core technologies provides us an opportunity to be a leading vendor of Connected Smart TV Platforms solutions. Our experience in IPTV and software development creates a unique combination of application delivery while providing industry leading picture quality including state-of-the-art 4K Ultra-HD video processing, frame rate conversion and market leading demodulator technology.

***Highly Integrated Chipsets Leveraged Across Multiple Consumer Applications.*** We have developed a proprietary chipset architecture that allows us to integrate high-performance digital video and audio decoding, graphics processing, security management and home audio/video networking and advanced image processing. Our chipsets can replace a number of single function semiconductors, which can significantly improve performance, lower power consumption and reduce total system cost to our customers. Furthermore, all of these functions can be performed synchronously at high processing speeds. Our ability to integrate these multiple functions into a single, high-speed semiconductor allows us to address many different consumer multimedia entertainment applications with the same hardware platform.

***Differentiated Software Development Capabilities.*** As a result of over 15 years of experience in delivering video and audio solutions, we have developed expertise in real-time software that synchronizes and controls the playback of video and audio from a variety of sources. This software translates the complex silicon architecture of our chipsets into a much simpler application programming interface. Using this interface, our customers are able to design their products under industry standard operating systems, enabling them to customize our solutions and reduce their time to market. The majority of our engineering personnel are dedicated to software development.

***Multi-Standard Functionality.*** We design our chipsets to support multiple industry standards that are used across most consumer entertainment applications. For example, there are over a dozen different video and audio standards used in current consumer applications, including video standards such as HEVC, H.264, MPEG-4, MPEG-2, MPEG-1 and WMV9, and audio standards such as Dolby, DTS and MP3. Beyond this, there are a range of digital rights management security standards such as AES, RSA and MSDRM. Additionally, there are three primary operating systems, Android, Linux and Microsoft Windows CE, each of which has its own middleware standards. The ability of our chipsets to support a multitude of standards allows us to deliver increased product functionality to our customers.

***Breadth and Depth of Relationships within the Set-top Box Industry and Service Providers.*** In order to provide a complete system-level solution for the IPTV industry, we have developed strong relationships with industry leaders that form the ecosystem required to deliver an end-to-end solution, from content creation to content display. The



IPTV ecosystem consists of providers of middleware, encoders and security solutions. For middleware, server software must be successfully integrated into our products to provide effective system solutions for the service providers. For security solutions, there are also a range of providers, including Microsoft and Nagra. We were one of the first media processing semiconductor providers to work extensively with IPTV set-top box manufacturers, including Ericsson's Mediaroom ecosystem, as well as telecommunications carriers to design solutions that address their specific feature and performance requirements. Additionally, we deliver some of the leading IPTV connectivity solutions for set-top boxes and residential gateways. Through these experiences, we have gained valuable insight into the challenges of our customers and carriers and have gained visibility into their product development plans. As a result, we believe we are able to provide our customers with a stable and reliable source of field-proven solutions. Our strong position in the IPTV industry has enabled us to develop and maintain relationships with these providers and offer solutions that are interoperable with their products.

***Z-Wave Standardization, Interoperability and Ecosystem.*** Our Z-Wave technology provides system integrators access to over 1,000 products complying with the Z-Wave standard and with guaranteed interoperability which we believe creates an attractive ecosystem. This makes our Z-Wave technology unique in the IoT Devices market, and a prime candidate to be selected by new service providers entering this emerging space. Because the International Telecommunication Union, or ITU, has developed a new sub 1GHz narrow band wireless standard which is largely based on Z-Wave technology and defines backwards compatibility to the Z-Wave standard, and because of the large ecosystem of products based on the Z-Wave standard, we believe our Z-Wave products will be one of the preferred solutions for telecommunication and multi-service operators in the future.

## Our Strategy

Our objective is to be the leading provider of SoC solutions used to deliver entertainment, automation and control throughout the home. To achieve this objective, we expect to continue to pursue the following strategies:

***Increase Penetration in Connected Smart TV Platforms market.*** Through our acquisition of Trident's DTV business, we have obtained a position in the digital television market, specifically targeting the new generation of Connected Smart TV Platforms that will feature 4K Ultra-HD video. We are currently fostering a number of key industry partnerships and collaborative relationships that have allowed us to increase our market presence. These industry partnerships and collaborative relationships have positioned us to further develop our technology into a leading solution in the Ultra-HD video and IP streaming set-top boxes market. Currently, our chipsets incorporate both hardware and software elements that enable Connected Smart TV Platforms features and content access, while also managing all of the routine television functions. We have developed unified broadband home networking technology under the G.hn standard, and we believe G.hn provides a way of unifying the demand under a single standard encompassing all wired transmission media (coaxial cable, phone line and power line) in the home. We believe our product line is differentiated by the hardware technologies such as frame-rate-conversion as well as sophisticated software such as internet connectivity and web portal access.

***Enhance our Software Advantage.*** We believe our software provides a suite of capabilities that offer differentiated advantages from our competitors. Our software is, at times, integrated and embedded into our customers' products during their product design stage. As a result, once we are designed into our customers' product, we believe it is difficult for our competitors to displace us. We intend to leverage our software development capabilities and continue to invest significant resources in developing additional expertise in the area of high-performance software development, over-the-top video delivery software, and customer support.

***Expand our position in home monitoring, automation and control.*** We have developed a strong position in the home monitoring, automation and control market and intend to expand this position with our Z-Wave technology to encompass security, energy management, and other services. This expansion will be largely achieved through the addition of service offerings from existing service providers, such as AT&T, ADT, Vivint, and others. As the market develops, we believe these providers expect to leverage additional value-added features from remote access capabilities.

***Leverage Existing Relationships.*** We have developed relationships within standards and platform-defining entities, which enable us to win new customers effectively. We also have strong customer relationships with many set-top box and connected media player designers and consumer device manufacturers. Further, we continue to work closely with telecommunications carriers to understand their needs in advance of our customer's product development cycle. These existing relationships allow us to leverage our position to identify and secure new market opportunities.



## **Customers and Strategic Relationships**

We sell our products principally to designers and manufacturers (OEMs and ODMs) as well as to distributors who, in turn, sell to manufacturers. Typically, when we sell to a distributor, that distributor has already received an order for our products directly from a manufacturer. Sales to our customers are typically made on a purchase order basis. We have also established strategic relationships with telecommunications carriers that provide wired and wireless communications services to consumers and businesses. More recently, we have established strategic partnerships with large producers of consumer electronics that increase our presence and exposure in the television market.

Our success within the Connected Smart TV Platforms market depends on our ability to achieve design wins and successfully integrate our chipsets into certain consumer electronics products. Specifically, our business depends on the demand for our chipsets from large producers of consumer electronics within the television market, who are often not direct customers but deploy products that incorporate our chipsets. Demand for our chipsets is determined by the number of design wins we are able to achieve within these producers' suites of product offerings. Even though we often do not sell our products directly to these large producers, they have a significant impact on the demand for our chipsets.

Our business also depends on demand for our chipsets from companies, such as large telecommunication carriers, who are not our direct customers but deploy IPTV set-top boxes that incorporate our chipsets. Large carriers often use multiple set-top box providers, who in turn may use multiple contract manufacturers to purchase our chipsets and manufacture set-top boxes. Even though we do not sell our products directly to the companies that ultimately deploy set-top boxes directly to consumers, they have a significant impact on the demand for our chipsets.

A substantial portion of our product shipments are to customers outside of North America. In fiscal 2017, 2016 and 2015, net revenue from our customers outside of North America accounted for 85%, 81%, and 89% of our net revenue, respectively. Revenue from our customers in Asia accounted for 82%, 76% and 81% of our net revenue in fiscal 2017, 2016 and 2015, respectively.

## **Sales and Marketing**

Our sales and marketing strategy is to achieve design wins with technology leaders by providing quality, state-of-the-art products through superior sales channels. We sell our products worldwide through multiple channels, including our direct sales force, manufacturer representatives and independent distributors strategically located in a number of countries around the world. Members of our direct sales force are based in the United States, Denmark, Israel, Taiwan, South Korea and Japan. Our sales are also supported by representatives, resellers and distributors in other key countries such as Brazil, China, and India.

Our sales cycle typically ranges from nine to eighteen months, and depends on a number of factors including the technical capabilities of the customer, the customer's need for customization of our chipsets and the length of the customer's evaluation and qualification process. In many cases, we must also qualify our products with our technology partners and, in some cases, with an end customer (e.g., a service provider). This qualification process may extend our sales cycle beyond its typical duration. We generally plan the fabrication of our products based on customer forecasts. In some instances, customer forecasts are driven by seasonality, where our customers plan product launches around the holiday season.

For our larger volume designer and manufacturer customers, purchase orders for our products are generally non-cancelable between four and twelve weeks before our scheduled delivery dates and not subject to rescheduling within four weeks of scheduled delivery dates.

## **Competition**

The semiconductor industry generally, and the consumer electronics market specifically, are highly competitive markets and are characterized by rapid technological change, evolving standards, decreasing average selling prices per unit, and short product life cycles. We believe that the principal factors on which we compete include time-to-market for new product introductions, product performance, customer interface and support, industry standards compatibility, software functionality, image quality, price, and product support.

We compete with a number of major domestic and international suppliers of chipset solutions and related applications, including the following, among others: Broadcom Ltd., Mediatek, RealTek, ST Microelectronics, Marvell Technology Group, Ltd. and Qualcomm in our Connected Smart TV Platforms market segment; and Texas Instruments, Freescale and Silicon Laboratories (through their selection and use of Zigbee-based chips for their product offerings), in our IoT Devices market segment.

Many of the aforementioned companies have higher profiles, larger financial resources and greater marketing resources than we do and may develop a competitive product that may inhibit the wide acceptance of our products. Additionally, we believe that other manufacturers may be developing products that will compete directly with our products in the near future. As a result, we are continuously in the process of developing new products with the intent to improve customer appeal, address new technologies, and provide competitive advantages, where possible.

## **Research and Development**

We focus our research and development efforts primarily on two areas: video/audio decoder technologies and secure media processing for the Connected Smart TV Platforms market and IoT Devices market. In building new solutions, our strategy is to build fully integrated chips and chipsets. To achieve and maintain our leadership position in the technology industry, we intend to continue to make advancements in the areas of video and audio compression and decompression as well as wired and wireless connectivity. We expect these advancements will include maintaining compatibility with emerging standards on multiple platforms, and making improvements to our current chip architecture to improve memory size and increase energy efficiency.

We have invested, and expect that we will continue to invest, substantial resources in research and development of performance enhancements, cost reductions and additional features for future generations of our solutions to remain competitive in our industry. During fiscal 2017, 2016 and 2015 our research and development expenses were \$74.0 million, \$68.8 million and \$67.5 million, respectively.

We have assembled a qualified team of experienced engineers and technology experts. As of January 28, 2017, we had 517 research and development employees. Along with the assistance of a number of independent contractors and consultants, these employees guide all of our internal product development.

## **Intellectual Property**

Our success and future revenue growth depend, in part, on our ability to protect our intellectual property. We rely primarily on patent, copyright, trademark and trade secret laws as well as agreements with customers, suppliers and employees to protect our proprietary technologies and processes.

As of January 28, 2017, we held 134 issued patents and we had 33 patent applications pending for our technology. The expiration dates of these patents are within the next one to twenty years. We cannot assure that more patents will be issued or that such patents, even if issued, or our existing patents, will provide adequate protection for our competitive position. Additionally, because we have participated and continue to participate in developing various industry standards, we may be required to license some of our patents to others, including competitors, who develop products based on those standards.

We generally enter into confidentiality agreements, evaluation (limited) license agreements, and technology license agreements with our employees and strategic partners, and typically control access to and distribution of product documentation and other proprietary information. Despite these precautions, it is possible that competitors or other unauthorized third parties may obtain, copy, use or disclose our technologies and processes, develop similar technology independently, or design around our patents. As such, any rights granted under our patents may not provide us with meaningful protection.

## **Manufacturing**

We are a fabless semiconductor company and we do not own or operate a fabrication, packaging or testing facility. We depend on third-party vendors to manufacture, package and test our products. By outsourcing manufacturing, we are able to avoid the costs associated with owning and operating our own manufacturing facility. This allows us to focus our efforts on the design and marketing of our products.

### *Semiconductor fabrication*

We rely on Taiwan Semiconductor Manufacturing Company (“TSMC”), Global Foundries (“GF”) and, to a lesser extent, Grace Semiconductors, to fulfill the majority of our semiconductor fabrication needs, including chipset manufacturing. We believe that our fabless manufacturing approach provides us with the benefits of superior manufacturing capability as well as flexibility to move the manufacturing, assembly and testing of our products to those vendors that offer the best capability at an attractive price. Nevertheless, we do not have long-term pricing



agreements with all of our third-party manufacturers, therefore, our costs and services are subject to sudden price fluctuations based on the cyclical demand for semiconductors. In addition, we may be unable to secure sufficient capacity at our third-party manufacturers' facilities, which could harm our ability to ship products to our customers in a timely manner and negatively impact our financial results in a particular period.

*Assembly and test*

Once our wafers have been manufactured, they are shipped from TSMC, GF, and our other third-party foundries to independent assembly and test facilities where they are sorted, packaged and tested. Generally, we store our sorted die in our die bank and only package the products for sale when we book an order. We outsource all packaging and testing of our products to independent third-party assembly and test facilities, primarily to Advanced Semiconductor Engineering, Inc. ("ASE") in Taiwan. Our products are designed to use low-cost, standard packages and to be tested with widely available test equipment.

*Quality assurance*

We are committed to maintaining the highest level of quality in our products. We have designed and implemented a quality management system that provides the framework for continual improvement of products, processes and customer service to ensure customer satisfaction. We also rely on in-depth simulation studies, design review and verification during our design phase, bench testing to perform design validation, product reliability qualification to verify the product's quality and manufacturing testing when the products are in production. To ensure consistent product quality, reliability and yield, together with our manufacturing logistics partners, we closely monitor the production cycle by regularly reviewing manufacturing process data from each wafer foundry and assembly subcontractor. We are ISO 9001 certified as are our key manufacturing partners, ASE, TSMC and GF.

## **Environmental Laws**

Our products and certain aspects of our operations are regulated under various environmental laws in the U.S., Europe and other parts of the world. These environmental laws are broad in scope and regulate numerous activities including the discharge of pollutants into the air and water, the management and disposal of hazardous substances and wastes, the cleanup of contaminated sites, the content of our products and the recycling and treatment and disposal of our products. Certain of these laws also pertain to tracking and labeling potentially harmful substances that may have been incorporated into our products. These product labeling and environmental laws require us to know whether certain substances are present in our products, and to what degree. Environmental laws may limit the use of certain substances in our products, or may require us to provide product safety information to our customers if certain substances are present in our products in sufficient quantities. Additionally, we may be required to recycle certain of our products when they become waste. Compliance with environmental laws and regulations across multiple jurisdictions is complex and we regularly review known and pending laws and regulations to ensure we are compliant. We did not incur any material expenditures in fiscal 2017 in relation to any environmental matters.

## **Backlog**

Our backlog, which primarily comprises cancellable purchase orders from our customers, at January 28, 2017, was approximately \$27.1 million, compared with backlog of approximately \$23.7 million at January 30, 2016. As our sales are made primarily through purchase orders from the delivery of products, the amount of backlog at any date depends upon various factors, including the timing of the receipt of orders, fluctuations in orders for existing product lines and the introduction of any new product lines. Accordingly, we believe that the amount of our backlog at any date is not a reliable measure of our future revenue.

## **Employees**

As of January 28, 2017, we had 718 full-time employees worldwide, including 517 in research and development, 99 in sales and marketing, 78 in general and administration and 24 in operations and quality assurance.

Our future success will depend, in part, on our ability to continue to attract, retain and motivate highly qualified technical, marketing, engineering and management personnel who are in great demand. While we have works councils or employee representatives in certain countries, our employees are not represented by any collective bargaining unit and we have never experienced a work stoppage. We believe that our employee relations are satisfactory.

## Corporate Information

We were incorporated in California in January 1982. Our principal offices are located at 47467 Fremont Boulevard, Fremont, California 94538, and our telephone number at that location is (510) 897-0200. Our website is located at [www.sigmadesigns.com](http://www.sigmadesigns.com); however, the information in, or that can be accessed through, our website is not part of this report. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to such reports are available, free of charge, through the “Investor Overview” section of our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, or SEC. Additionally, copies of materials filed by us with the SEC may be accessed at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549 or at [www.sec.gov](http://www.sec.gov). For information about the SEC’s Public Reference Room, contact 1-800-SEC-0330 or send an electronic message to the SEC at [publicinfo@sec.gov](mailto:publicinfo@sec.gov).

## ITEM 1A. RISK FACTORS

*Before deciding to purchase, hold or sell our common stock, you should carefully consider the risks described below in addition to the other information contained in this Report and in our other filings with the SEC, including our previously filed reports on Forms 10-Q and 8-K. If any of the following risks actually occurs, our business, financial condition and results of operations could be harmed and the trading price of our common stock may decline causing you to lose all or part of your investment in our common stock. The risks and uncertainties described below are not the only risks that may occur in the course of our business. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations.*

### **Risks Related to Our Business and Our Industry**

**If we do not successfully anticipate market needs and develop products and product enhancements in a timely manner, or if those products do not gain market acceptance, we may not be able to compete effectively in our target markets and our ability to generate revenue will suffer.**

We may not be able to accurately anticipate future market needs or be able to develop new products or product enhancements to meet such needs or to meet them in a timely manner. Our ability to develop and deliver new products successfully will depend on various factors, including our ability to:

- accurately predict market requirements and evolving industry standards;
- accurately design new chipset products;
- timely complete and introduce new product designs;
- timely qualify and obtain industry interoperability certification of our products and the equipment into which our products will be incorporated;
- ensure that our subcontractors have sufficient foundry, assembly and testing capacity, packaging materials and acceptable manufacturing yields;
-

shift our products to smaller geometry process technologies to achieve lower cost and higher levels of design integration; and

gain market acceptance of our products and our customers' products.

If we fail to anticipate market requirements or develop new products or product enhancements in a cost-effective and timely manner, it may substantially decrease market acceptance and sales of our present and future products and may impact our ability to attract new customers or retain our existing customers, which would significantly harm our business and financial results.

Even if we are able to anticipate, develop and commercially introduce new products and enhancements, our new products or enhancements may not achieve widespread market acceptance. Any failure of our products to achieve market acceptance may adversely affect our business and financial results.

**If demand for our chipsets declines or fails to increase, or if growth of the consumer electronics market does not continue, we will be unable to grow or sustain our net revenue.**

We expect our chipsets to account for a substantial majority of our net revenue for the foreseeable future. For fiscal 2017, sales of our chipsets represented a substantial amount of our net revenue. Even if the consumer electronic markets that we target continue to expand, manufacturers of consumer products in these markets may not utilize our chipsets in their products. The markets for our products are characterized by frequent introduction of new technologies, short product life cycles and significant price competition. If we or our customers are unable to manage product transitions in a timely and cost effective manner, our net revenue may suffer. In addition, frequent technological changes and introduction of next generation products may result in inventory obsolescence which would increase our cost of revenue and adversely affect our operating performance. If demand for our chipsets declines or fails to grow or we are unable to develop new products to meet our customers' demand, our net revenue could be harmed.

**Our industry is highly competitive and we may not be able to compete effectively in our target markets, which would harm our market share and cause our revenue to decline.**

The markets in which we operate are extremely competitive and are characterized by rapid technological change, continuously evolving customer requirements and declining average selling prices. We may not be able to compete successfully against current or potential market participants. Most of our products compete with large semiconductor providers that have substantial experience and expertise in video, audio, multimedia and IoT technology and in selling to consumer equipment providers. Many of these companies have substantially greater engineering, marketing and financial resources. As a result, other market participants may be able to respond more effectively to new or emerging technologies or standards and to changes in customer requirements. Further, some of our competitors are in a better financial and marketing position from which to influence industry acceptance competing technology than we are. Our competitors may also be able to devote greater resources to the development, promotion and sale of products, and may be able to deliver similar products at a lower price. We also may face competition from newly established market participants, suppliers of products based on new or emerging technologies and customers who choose to develop their own chipsets. Additionally, some of our competitors operate their own fabrication facilities or may have stronger manufacturing partner relationships than we have. We expect our current customers to seek additional suppliers of chipsets for inclusion in their products, which may impact our position in the industry and reduce our market share and net revenue.

**Our restructuring efforts may not be effective which could negatively impact our business.**

In fiscal 2013, fiscal 2014 and fiscal 2015, we launched and implemented restructuring plans to significantly reduce our operating expenses. Despite our efforts to structure our business to operate in a cost-effective manner, some cost reduction measures could have unexpected negative consequences, such as attrition among employees and a slowdown of development projects. While our restructuring efforts are intended to reduce our costs, we cannot be certain that all restructuring efforts will be successful, or that we will not be required to implement additional restructuring activities in the future. If we are unable to recognize the anticipated benefit from our restructuring plan, our results of operations could be harmed.

**If we fail to achieve design wins for our products, we may be unable to recoup our investment in our products which may cause a decline in our revenue and results of operations.**

We expend considerable resources in order to achieve design wins for our products, specifically new products and product enhancements. Once a customer designs a chip or chipset into a product, the customer is likely to continue to use the same chip or chipset or enhanced versions of that chip or chipset across a number of successor products for an extended timeframe. Failure to do so may result in significant costs and risks associated with qualifying a new supplier or redesigning the product to incorporate a different chip or chipset. As a result, if we do not achieve an initial design win in a customer's qualification process, we may lose the opportunity for significant sales to that same

customer for a number of its current and future products. In some cases, even if we achieve a new design win, manufacturers may fail to purchase our products in sufficient volumes to recoup our development costs, or choose, at any time, to stop purchasing our products. This may cause our revenue and our results of operations to decline.

**Our growth strategy depends upon our ability to expand our product portfolio through external collaborations, which, if unsuccessful, may adversely affect our business.**

We intend to continue to explore opportunities to enter into collaboration agreements and external alliances with other companies. As part of our ongoing efforts to remain competitive, we entered into a collaboration agreement with Telechips Inc., a semiconductor company based in South Korea. Failures by our collaborative partners to meet their contractual, regulatory, or other obligations to us, or any disruption in the relationships between ourselves and these partners could have a material adverse effect on our business. In addition, our collaborative relationships may give rise to disputes regarding each party's relative rights, obligations and revenues, including the ownership of intellectual property and associated rights and obligations. These could result in the loss of intellectual property rights or other intellectual property protections, delay the development and sale of potential products, and lead to lengthy and expensive litigation or arbitration.

**We depend on a limited number of customers and any reduction, delay or cancellation of an order from these customers or the loss of any of these customers could cause our revenue to decline.**

Our dependence on a limited number of customers means that the loss of a major customer or any reduction in orders by a major customer could materially reduce our net revenue and adversely affect our results of operations. We expect that sales to relatively few customers will continue to account for a significant percentage of our net revenue for the foreseeable future. We have no firm, long-term volume commitments from any of our major customers and we generally accept purchase commitments from our customers based upon their purchase orders. Customer purchase orders may be cancelled and order volume levels can be changed, cancelled or delayed with limited or no penalties. We have experienced fluctuations in order levels from time to time and expect that we will continue to experience such fluctuations and cancellations in the future. We may also not be able to replace the cancelled, delayed or reduced purchase orders with new orders. Any difficulty in the collection of receivables from key customers could harm our business.

Our business also depends on demand for our chipsets from large telecommunication carriers, who are not our direct customers but deploy IPTV set-top boxes that incorporate our chipsets. Large carriers often use multiple set-top box providers, who in turn sometimes use multiple contract manufacturers to purchase our chipsets and manufacture set-top boxes. Although we do not sell our products directly to these companies that ultimately deploy set-top boxes to consumers, these companies have a significant impact on the demand for our chipsets. For example, a significant number of our chipsets are incorporated in set-top boxes and gateways deployed by AT&T. In the past, companies that deploy set-top boxes incorporating our chipsets have had significant fluctuations in demand, which has resulted in a decline in our business from our direct customers. We may experience increased competition as companies that deploy set-top boxes incorporating our chipsets seek additional or alternate sources of supply of chipsets for inclusion in their products. Any decrease in the demand from companies that deploy IPTV set-top boxes incorporating our chipsets, in particular AT&T, could have a material and adverse effect on our net revenue and results of operations.

Our business depends on the demand for our chipsets from large producers of consumer electronics within the television market, who are often not direct customers but deploy their televisions that incorporate our chipsets. Demand for our chipsets is determined by the number of design wins we are able to achieve within these producers' suites of product offerings. Even though we often do not sell our products directly to these large producers, they have a significant impact on the demand for our chipsets. For example, a significant number of our chipsets are incorporated in televisions deployed by Vizio and Roku. These companies that deploy televisions incorporating our chipsets may have significant fluctuations in demand, which could result in a decline in our business from our direct customers, such as OEMs and contract manufacturers. We may experience increased competition as companies that deploy televisions incorporating our chipsets seek additional or alternate sources of supply in their products. Any decrease in the demand from companies that deploy televisions incorporating our chipsets, in particular Vizio and Roku, could have a material and adverse effect on our net revenue and results of operations.

**Our inability to manage transitions to new solutions and products in an effective manner could reduce the demand for our solutions and products and the profitability of our operations.**



Continuing improvements in technology result in frequently updated solutions and new product introductions, short product life cycles, and improvements in product performance characteristics. If we cannot manage the transition to new solutions offerings and their respective products and services in an effective manner, customer demand for our solutions and products could diminish and our profitability could suffer. We are increasingly sourcing new products and transitioning existing products through our contract manufacturers and manufacturing outsourcing relationships in order to generate cost efficiencies, and deliver products faster to better serve our customers. Product transitions present execution challenges and risks, including the risk that new or upgraded products may have quality issues or other defects. The success of product transitions depends on a number of factors that include the availability of sufficient quantities of components at attractive costs and our ability to sell and manage inventory of older generation products. Failure to properly manage and oversee a product transition could have a material and adverse effect on our net revenue and results of operations.

**If we fail to accurately assess product forecasts from our customers, our financial condition and liquidity could suffer.**

We place orders with our suppliers based on forecasts of our customers' demand. Our forecasts are based on multiple assumptions, each of which may introduce errors into our estimates. When the demand for our customers' products increases significantly, we may not be able to meet demand on a timely basis and we may need to expend a significant amount of effort and time allocating a limited supply of product and maintaining positive customer relations. If we underestimate customer demand, we may forego revenue opportunities, lose market share and damage our customer relationships. Conversely, if we overestimate customer demand, we may allocate resources to manufacturing products that we may not be able to sell. If one or more of our customers should experience insolvency or illiquidity and fail to obtain sufficient financing to sustain operations, the collectability of a portion of our accounts receivable, as well as the salability of any inventory we hold for that customer, could be impacted. While we seek to maintain adequate reserves for such risks, there can be no assurance that such reserves will always be adequate. For example, during fiscal 2017, 2016 and 2015, we recorded a provision for excess inventory of \$2.0 million, \$3.2 million and \$4.3 million, respectively. When we have excess or obsolete inventory, the value of our inventory declines, which increases our cost of revenue and reduces our liquidity.

**We have engaged, and may in the future engage in acquisitions of other businesses and technologies which could divert our attention and prove difficult to integrate with our existing business and technology.**

We continue to consider investments in and acquisitions of other businesses, technologies or products as part of our efforts to improve our market position, broaden our technological capabilities and expand our product offerings. For example, in November 2015, in connection with our acquisition of Bretelon Inc., we added significant research and development operations and hired approximately 7 new employees. In the future, we may not be able to acquire or successfully identify companies, products or technologies that would enhance our business. Once we identify a strategic opportunity, the process to consummate a transaction could divert our attention from the operation of our business causing our financial results to decline.

Acquisitions can require large one-time charges and can result in increased debt or contingent liabilities, adverse tax consequences, additional stock-based compensation expense, and the recording and subsequent amortization of amounts related to certain purchased intangible assets, any of which could negatively impact our results of operations. We have and may also record goodwill in connection with an acquisition and incur goodwill impairment charges in the future. In addition, in order to complete acquisitions, we may issue equity securities and incur debt, which results in dilution of our shares and existing shareholders and could negatively impact profitability.

We may also encounter challenges in integrating acquired businesses. Integrating acquired businesses involves a number of risks, including:

potential disruption of our ongoing business and the diversion of management resources from other business concerns;

• unexpected costs or incurring unknown liabilities;

• managing a larger combined company;

• difficulties relating to integrating the operations and personnel of the acquired businesses;

• consolidating corporate and administrative infrastructures and eliminating duplicative operations;

• adverse effects on the existing customer relationships of acquired companies; and

• adverse effects associated with entering into markets and acquiring technologies in areas in which we have little experience.

Many of these factors are outside of our control and any one of them could result in increased costs, decreases in the amount of expected revenue and diversion of management's time and efforts, which could materially impact our business, financial condition and results of operations.

**The timing of our customer orders and product shipments can adversely affect our operating results and stock price.**

Our net revenue and operating results depend upon the volume and timing of customer orders received during a given period and the percentage of each order that we are able to ship and recognize as net revenue during each period. Customers may change their cycle of product orders from us, which would affect the timing of our product shipments. Any failure or delay in the closing of orders expected to occur within a quarterly period, particularly from significant customers, would adversely affect our operating results. Further, to the extent we receive orders late in any given quarter, we may not be able to ship products to fill those orders during the same period in which we received the corresponding order which could have an adverse impact on our operating results for that period.

**If we do not adequately enforce or protect our intellectual property, we may fail to prevent the misappropriation or unauthorized use of our proprietary intellectual property – enforcement and protection of our intellectual property may be expensive and could result in the loss of our ability to enforce one or more patents.**

We rely primarily on patent, copyright, trademark and trade secret laws, as well as nondisclosure and confidentiality agreements, to protect our proprietary information, technologies and processes, including our patent portfolio. Preventing the unauthorized use of our products, technologies and proprietary information is difficult, expensive and time consuming. We cannot be certain that the steps we have taken, or may take in the future, have prevented or will prevent the misappropriation or unauthorized use of our proprietary information, particularly in foreign countries where the laws may not protect our proprietary intellectual property as fully or as readily as United States laws. Further, the laws in certain foreign countries in which our products are or may be manufactured or sold, including certain countries in Asia, may not protect our intellectual property rights to the same extent as the laws in the United States.

We may need to litigate in the United States, China, or elsewhere in the world to enforce our contract and/or intellectual property rights, protect our trade secrets or determine the validity and scope of proprietary rights of others. As a result of any such litigation, we could lose our ability to enforce one or more patents, portions of our license agreements could be determined to be invalid or unenforceable (which may in turn result in other licensees either not complying with their existing license agreements and/or initiating litigation) and/or we could incur substantial unexpected operating costs. Any action we take to enforce our contract or intellectual property rights could be costly and could absorb significant management time and attention, which, in turn, could negatively impact our operating results. Further, even a positive resolution to our enforcement efforts may take time to conclude, which may reduce our revenues in the period prior to conclusion.

**If we fail to obtain intellectual property protection for our technology, our business could be adversely affected.**

Patent and other proprietary rights are essential to our business. The success of our business depends to a significant degree on our ability to obtain and enforce patents to patent rights, both in the United States and in other countries. We cannot be certain that pending patent applications will result in issued patents, that issued patents will not be challenged by our competitors or that the intellectual rights of third parties will not prevent us from selling our products in our target markets.

**Claims by third parties that our technology infringes their intellectual property could adversely affect our business.**

Certain third parties have asserted, and these or other third parties may assert, patent, copyright and other intellectual property rights against our products or products using our technologies or other technologies used in our industry. These claims have resulted and may again result in our involvement in litigation. We may not prevail in such litigation given, among other factors, the complex technical issues and inherent uncertainties in intellectual property litigation. If any of our products or services were found to infringe on another company's intellectual property rights, we could be subject to an injunction or be required to redesign our products or services, which could be costly, or to license such rights, pay damages or other compensation to such other company. If we are unable to redesign our products or services, license such intellectual property rights used in our products or services or otherwise distribute our products through a licensed supplier, we could be prohibited from making and selling such products or providing such services. We are contingently liable under certain product sales, services, license and other agreements to indemnify certain customers against certain types of liability and/or damages arising from qualifying claims of patent infringement by products or services sold or provided by us. Reimbursements under indemnification arrangements could have an adverse effect on our results of operations. Furthermore, any such litigation could severely disrupt the supply of our products and the businesses of our chipset customers and their customers, which in turn may result in a decline in our chipset sales, causing a corresponding decline in our chipset revenues. Any claim, regardless of its merit, could be time consuming to address, result in costly litigation, divert the efforts of our technical and management personnel or cause product release or shipment delays, any of which could have an adverse effect on our operating results.

Our expectation is that we will continue to be involved in litigation and may have to appear in front of administrative bodies, including the United States International Trade Commission. Our involvement in certain litigation proceedings will cause us to defend against patent assertions related to our products by third parties, some of whom are attempting to gain competitive advantage or leverage in licensing negotiations. We may not be successful in such proceedings, and if we are not, the range of possible outcomes is broad and may include, for example, monetary damages, royalty payments and/or an injunction on the sale of certain of our chipset products (and on the sale of our customers' devices using such products). A negative outcome in any of our existing proceedings or in future proceedings could result in significant costs to us, materially and adversely impact our business, results of operations and financial condition.

**To remain competitive, we need to continue to transition our chipsets to increasingly smaller sizes while maintaining or increasing functionality, and our failure to do so may harm our business.**

We periodically evaluate the benefits, on a product-by-product basis, of migrating to more advanced technology to reduce the size of our chipsets. The smaller chipset size reduces our production and packaging costs, which enables us to be competitive in our pricing. We also continually strive to increase the functionality of our chipsets, which is essential to competing effectively in our target markets. The transition to smaller geometries while maintaining or increasing functionality requires us to work with our contractors to modify the manufacturing processes, which results in the redesign of existing products. This effort requires considerable development investment and a risk of reduced yields as a new process is brought to acceptable levels of operating and quality efficiency. In the past, we have experienced difficulties in shifting to smaller geometry process technologies and new manufacturing processes, which resulted in reduced manufacturing yields, delays in product deliveries and increased expenses. We may face similar difficulties, delays and expenses as we continue to transition our products to a smaller geometry, all of which could harm our relationships with our customers and have a negative impact on our sales.

**The average selling prices of semiconductor products have historically decreased rapidly and will likely do so in the future, which could harm our revenue and gross margins.**

The semiconductor industry, in general, and the consumer electronics market that we target, specifically, are characterized by intense price competition, frequent introductions of new products and short product life cycles, which can result in rapid price erosion in the average selling prices for semiconductor products. A decline in the average selling prices of our products could harm our revenue and gross margins. The willingness of customers to design our chipsets into their products depends, to a significant extent, upon our ability to sell our products at competitive prices. In the past, we have reduced our prices to meet customer requirements and to maintain a competitive advantage. Reductions in our average selling prices to one customer could impact our average selling prices to all customers. If we are unable to reduce our costs sufficiently to offset declines in product selling prices or are unable to introduce more advanced products with higher margins in a timely manner, we may experience declines in our net revenue and gross margins.

**The complexity of our products may result in unforeseen delays, expenses and in undetected defects, which could damage our reputation with customers, adversely affect the market acceptance of our new products and result in warranty claims.**

Highly complex products, such as those that we offer, frequently contain defects, particularly when they are first introduced or as new versions are released. Our chipsets contain highly sophisticated silicon technology and complex software. In the past we have experienced, and may in the future experience, defects in our products, both with our chipsets and the related software products we offer. If any of our products contain defects or have reliability, quality or compatibility problems, our reputation may be damaged and our customers may be reluctant to buy our products,

which could harm our ability to retain existing customers and attract new customers. In addition, any of these factors could interrupt or delay sales or shipment of our products to our customers. Manufacturing defects may not be detected by the testing process performed by our subcontractors. If defects are discovered after we have shipped our products, it could result in unanticipated costs, order cancellations or deferrals and product returns or recalls, harm to our reputation and a decline in our net revenue, income from operations and gross margins.

In addition, our agreements with some customers contain warranty provisions which provide the customer with a right to damages if a defect is traced to our products or if we cannot correct errors in our product reported during the warranty period. Any contractual limitations to our liability may be unenforceable in a particular jurisdiction. Further, we do not have insurance coverage for any warranty or product liability claims and a successful claim could require us to pay substantial damages. Any such claim against us, or a requirement that we participate in a product recall, could have adverse effects on our business results.

**If our third-party manufacturers do not achieve satisfactory yields or quality, our relationships with our customers and our reputation may be harmed, which in turn would harm our operating results and financial performance.**

The fabrication of our chips and chipsets is a complex and technically demanding process. Minor deviations in the manufacturing process can cause substantial decreases in yields and, in some cases, cause production to be stopped or suspended. Although we work closely with our third-party manufacturers to minimize the likelihood of reduced manufacturing yields, their facilities have, from time to time, experienced lower than anticipated manufacturing yields that have resulted in our inability to meet our customer demand. Many of these problems are difficult to detect at an early stage of the manufacturing process and may be time consuming and expensive to correct. Poor yields from wafer foundries, defects, integration issues or other performance problems in our products may cause us to experience significant issues in customer relations or force us to sell our products at lower gross margins, therefore harming our financial results.

**Recent regulations related to conflict-free minerals may force us to incur additional expenses which may negatively impact our financial results and decrease our cash balance.**

Under the Dodd-Frank Wall Street Reform and Consumer Protection Act, the SEC requires companies to disclose the use of certain minerals and derivative metals (referred to as “conflict minerals,” regardless of their actual country of origin) in their products. These requirements require companies to investigate, disclose and report whether or not such metals originated from the Democratic Republic of Congo or adjoining countries. We have incurred additional expenses in our efforts to comply with these recent regulations; such expenses may become more significant in the future, which could negatively impact our financial results and decrease our cash balance. In response to this regulation, we evaluate our use of minerals and derivative metals on an annual basis, the most recent of which was filed with the SEC on the specialized disclosure report on Form SD on May 26, 2016 concluding that our supply chain is conflict free undeterminable. We believe we are in full compliance with the disclosure requirements as stated within the aforementioned regulation.

As there may be only a limited number of suppliers offering “conflict free” metals, we cannot be sure that our contract manufacturers and other suppliers will be able to obtain necessary metals in sufficient quantities or at competitive prices. We are a fabless semiconductor company, and because of this our supply chain is complex. Some suppliers may choose not to share their confidential information related to their supply chain, which may cause us to face challenges with our customers if we are unable to sufficiently verify that the metals used in our products are “conflict free.” If this occurs, our customers may choose to disqualify us as a supplier and we may be required to write-off inventory in the event that it becomes unsalable as a result of these regulations.

**If the growth of demand in the consumer electronics market does not continue, our ability to increase our revenue could suffer.**



Our business is highly dependent on developing sectors of the consumer electronics market, including the Connected Smart TV Platforms and IoT Devices markets. The consumer electronics market is highly competitive and is characterized by, among other things, frequent introductions of new products and short product life cycles. The consumer electronics market may also be negatively impacted by a slowdown in overall consumer spending. The worldwide economies, generally, and consumer spending, specifically, have exhibited significant volatility, which has negatively impacted our target markets. If our target markets do not grow as rapidly or to the extent we anticipate, our business could suffer. We expect the majority of our revenue for the foreseeable future to come from the sale of our chipsets for use in emerging consumer applications. Our ability to sustain and increase revenue is in large part dependent on the continued growth of these rapidly evolving market sectors, whose future is largely uncertain. Many factors could impede or interfere with the expansion of these consumer market sectors, including consumer demand, general economic conditions, and other competing consumer electronic products, delays in the deployment of telecommunications video services and insufficient interest in new technology innovations. In addition, if market acceptance of the consumer products that utilize our products does not occur as expected, our business could be harmed.

**Due to the cyclical nature of the semiconductor industry, our operating results may fluctuate significantly, which could adversely impact the market price of our common stock.**

The semiconductor industry is highly cyclical and subject to rapid change and evolving industry standards and, from time to time, has experienced significant downturns. These downturns are characterized by decreases in product demand, excess customer inventory and accelerated erosion of prices. These factors have caused, and could cause, substantial fluctuations in our net revenue and in our operating results. Any downturns in the semiconductor industry may be severe and prolonged, and any failure of this industry to fully recover from downturns could harm our business. The semiconductor industry also periodically experiences increased demand and production capacity constraints, which may impact our ability to ship products. Accordingly, our operating results have varied and may vary significantly as a result of the general conditions in the semiconductor industry, which may cause our stock price to decline.

**Our ability to raise capital in the future may be limited and our failure to raise capital when needed could prevent us from executing our growth strategy.**

We believe that our existing cash and cash equivalents, and short-term marketable securities will be sufficient to meet our anticipated cash needs for at least the next twelve months. The timing and amount of our working capital and capital expenditure requirements may vary significantly depending on numerous factors, including:

market acceptance of our products;

the need to adapt to changing technologies and technical requirements;

the existence of opportunities for expansion; and

access to and availability of sufficient management, technical, marketing and financial personnel.

If our capital resources are insufficient to satisfy our liquidity requirements, we may seek to sell additional equity securities or debt securities or obtain debt financing. In fiscal 2017, we generated \$11.7 million in cash from our operating activities. In fiscal 2016, we generated \$0.8 million in cash from our operating activities. During the fourth quarter of fiscal 2016, we made cash payments aggregating \$19.3 million, net of \$0.1 million of cash acquired, related to the acquisition of the Mobile IoT business, Bretelon. The amount of cash we use for the acquisitions and in support of our operations could limit our ability to execute our business plans and require us to raise additional capital in the future. The sale of additional equity securities or convertible debt securities would result in further dilution to our shareholders. If we took on any debt, it would result in increased expenses and may result in covenants that would restrict our operations. We have not made arrangements to obtain additional financing and there is no assurance that financing, if required, will be available in amounts or on terms acceptable to us, if at all.

**Changes in our effective tax rate or tax liability may have an adverse effect on our results of operations.**

As a global company, we are subject to taxation in The Netherlands, Israel, Singapore, the United States and various other countries and states. Significant judgment is required to determine and estimate worldwide tax liabilities. Any significant change in our future effective tax rates could adversely impact our consolidated financial position, results of operations and cash flows. Our future effective tax rates may be adversely affected by a number of factors including:

changes in tax laws in the countries in which we operate or the interpretation of such tax laws;

changes in the valuation of our deferred tax assets and liabilities, including the effect of foreign exchange rate fluctuations relative to the US Dollar;

increases in expenses not deductible for tax purposes, including write-offs of acquired developed technology and impairment of goodwill in connection with acquisitions;

changes in stock-based compensation expense;

changes in generally accepted accounting principles; and

our ability to use our tax attributes such as research and development tax credits and net operating losses of acquired companies to the fullest extent.

We anticipate that a portion of our consolidated pre-tax income will continue to be subject to foreign tax at relatively lower tax rates when compared to the United States' federal statutory tax rate. Our future effective income tax rates could be adversely affected if tax authorities challenge our international tax structure, if the relative mix of United States and international income or losses changes for any reason. Accordingly, there can be no assurance that our income tax rate will be less than the United States' federal statutory rate.

**We have a history of fluctuating operating results, and we may not be able to return to profitability in the future, which may cause the market price of our common stock to decline.**

We have a history of fluctuating operating results. We reported a net loss of \$11.0 million in fiscal 2014, a net loss of \$21.7 million in fiscal 2015, net income of \$0.2 million in fiscal 2016, and a net loss of \$18.3 million in fiscal 2017. While we achieved profitability during fiscal 2016, it was due to a one-time event and we may not be able to achieve profitability in future periods. We recorded a one-time gain during fiscal 2016 resulting from amounts awarded from arbitration associated with the previous sale of a development project of approximately \$7.6 million, without which, we would have reported a net loss. To return to operational profitability, we will need to successfully develop new products and product enhancements and sustain higher revenue while controlling our cost and expense levels. In recent years, we made significant investments in our product development efforts and have expended substantial funds to enhance our sales and marketing efforts and otherwise operate our business. However, we may not be able to realize the benefits of these investments. We may incur operating losses in future quarterly periods or fiscal years, which in turn could cause the price of our common stock to decline.

**Our sales cycle can be lengthy, which could result in uncertainty and delays in generating net revenue.**

Because our products are based on constantly evolving technologies, we have experienced a lengthy sales cycle for some of our chipsets, particularly those designed for the Connected Smart TV Platforms market. After we have qualified a product with a customer, the customer will usually test and evaluate our product with its service provider prior to the customer completing the design of its own equipment that will incorporate our product. Our customers and the telecommunications carriers our customers serve may need approximately three months to a year to test, evaluate and adopt our product and an additional three to nine months to begin volume production of equipment that incorporates our product. Our complete sales cycle typically ranges from nine to eighteen months, but may be longer. As a result, we may experience a significant delay between the time we increase expenditures for research and development, sales and marketing efforts and inventory, and the time we generate net revenue, if any, from these expenditures. In addition, because we do not have long-term commitments from our customers, we must repeat our sales process on a continual basis even for current customers seeking to purchase a new product. As a result, our business could be harmed if a customer reduces or delays its orders, chooses not to release products incorporating our chipsets or elects not to purchase a new product or product enhancements from us.

**The complexity of our international operations may increase our operating expenses and disrupt our business.**

We are a global company that transacts business worldwide. For example, we derive a substantial portion of our net revenue from our customers outside of North America and we plan to continue expanding our business in international markets in the future. For fiscal 2017, we derived 85% of our revenue from customers outside of North America. We also have significant international operations, including research and development facilities in Shanghai, Vietnam, Singapore, Germany, Israel, France and The Netherlands; sales and research and development facilities in Taiwan,

Israel and Denmark; sales and sales support facilities in South Korea, Japan, Shenzhen and Hong Kong.

As a result of our international business, we are affected by economic, regulatory and political conditions in foreign countries, including the imposition of government controls, changes or limitations in trade protection laws, unfavorable changes in tax treaties or laws, varying statutory equity requirements, difficulties in collecting receivables and enforcing contracts, natural disasters, labor unrest, earnings expatriation restrictions, misappropriation of intellectual property, changes in import/export regulations, tariffs and freight rates, economic instability, public health crises, acts of terrorism and continued unrest in many regions and other factors, which could have a material impact on our international revenue and operations. For example, we may experience reduced intellectual property protection in some countries.

Our results of operations could also be adversely affected by exchange rate fluctuations, which could increase the sales price in local currencies of our products in international markets. Overseas sales and purchases to date have been denominated in U.S. dollars. We do not hedge such exposures. See “*Foreign currency exchange rate sensitivity*” under Part II Item 7A and “*Quantitative and Qualitative Disclosures about Market Risk*” in this Form 10-K. Moreover, local laws and customs in many countries differ significantly from those in the United States. We also face challenges in staffing and managing our global operations. If we are unable to manage the complexity of our global operations successfully, our financial performance and operating results could suffer.

**Currency exchange rate fluctuations could result in lower revenues, higher costs and decreased margins and earnings.**

Large portions of our products are sold outside of the United States and are denominated in U.S. Dollars. As a result, sales may weaken if the U.S. Dollar strengthens against foreign currencies, effectively increasing the cost of our products for our international customers. Our international expenses are derived from operations in foreign currencies, and these expenses could be affected by currency fluctuations, including amounts recorded in foreign currencies and translated into U.S. Dollars for consolidated financial reporting, which increases our exposure to fluctuations in foreign currency exchange rates relative to the U.S. Dollar. Currency exchange rate fluctuations could also disrupt the business of our overseas ODM and OEM customers by making their purchases of materials more expensive and more difficult to finance. Foreign currency fluctuations could have an adverse effect on our results of operations and financial condition.

**A volatile global economy could negatively impact our business, results of operations and financial condition.**

Uncertainty in global economic conditions poses a risk to the overall economy as consumers and businesses may defer purchases in response to tighter credit and negative financial news, which could negatively affect demand for our products. Consequently, demand for our products could be different from our expectations due to factors including:

changes in business and economic conditions, including conditions in the credit market that could negatively affect consumer confidence;

customer acceptance of our products and those of our competitors;

changes in customer order patterns including order cancellations; and

reductions in the level of inventory our customers are willing to hold.

Many of our products are incorporated into customer devices, a general slowdown in the economy or in consumer confidence could have a significant negative impact on the demand for the consumer products that incorporate our chipsets, which in turn would have a negative impact on our results of operations. There could also be a number of secondary effects from the current uncertainty in global economic conditions, such as insolvency of suppliers resulting in product delays, an inability of our customers to obtain credit to finance purchases of our chipsets or a desire of our customers to delay payment to us for the purchase of our products. Fluctuations in the global economic environment could negatively impact our business, results of operations and financial condition.

**We rely on a limited number of third-party manufacturers for the fabrication, assembly and testing of our chipsets and the failure of any of these third-party manufacturers to deliver products or otherwise perform as requested could damage our relationships with our customers, decrease our sales and limit our growth.**

We are a fabless semiconductor company, and do not own or operate a fabrication or manufacturing facility. We depend on independent manufacturers, each of whom is a third-party manufacturer for numerous companies, to manufacture, assemble and test our products. We currently rely on Taiwan Semiconductor Manufacturing Corporation, or TSMC, and Global Foundries, or GF, to produce a majority of all of our chipsets. We rely on Advanced Semiconductor Engineering, Inc., or ASE, to assemble, package and test substantially all of our products. These third-party manufacturers may allocate capacity to the production of other companies' products while reducing product deliveries or the provision of services to us on short notice or they may increase the prices of the products and services they provide to us with little or no notice. In particular, other clients that are larger and better financed or that have long-term agreements with ASE, TSMC or GF may cause any or all of them to reallocate capacity to those clients, decreasing the capacity available to us.

If we fail to effectively manage our relationships with the third-party manufacturers, if we are unable to secure sufficient capacity at our third-party manufacturers' facilities or if any of them should experience delays, disruptions, technical or quality control problems in their manufacturing operations our ability to ship products to our customers could be delayed. Further, if we were required to change or add additional third-party manufacturers or contract manufacturing sites, our relationships with our customers could be harmed and our market share and operating results would suffer. If our third-party manufacturers' pricing increases and we are unable to pass along such increases to our customers, our operating results could be adversely affected. The addition of manufacturing locations or third-party subcontractors would increase the complexity of our supply chain management. Moreover, all of our product manufacturing, assembly and packaging is performed in Asian countries and is therefore subject to risks associated with doing business in these countries such as quarantines or closures of manufacturing facilities due to the outbreak of viruses such as swine flu, SARS, avian flu or any similar outbreaks. Each of these factors could harm our business and negatively impact financial results.

**In the event we seek or are required to use a new manufacturer to fabricate or to assemble and test all or a portion of our chipset products, we may not be able to bring new manufacturers on-line rapidly enough, which could damage our relationships with our customers, decrease our sales and limit our growth.**

We use two main wafer foundries, and to a lesser extent, one additional foundry, to manufacture a substantial majority of our products. Moreover, we use a single source to assemble and test substantially all of our products. This practice exposes us to a substantial risk of delay, increased costs and customer dissatisfaction in the event our third-party manufacturers are unable to supply us with our chipset requirements. Particularly, during times when semiconductor capacity is limited, we may seek to, and in the event that our current foundry were to stop producing wafers for us altogether, we would be required to, qualify one or more additional wafer foundries to meet our requirements. This may be time consuming and costly. In order to bring any new foundries on-line, we would need to qualify their facilities, which could take several months. Once qualified, each new foundry would then require an additional number of months to begin producing chipsets to meet our needs, at which point our perceived need for additional capacity may have passed, or the opportunities we have previously identified may be lost to our competitors. Similarly, qualifying a new provider of assembly, packaging and testing services would be a lengthy and costly process and, in both cases, could prove to be less reliable than utilizing our existing manufacturers. If we switch to a new third party manufacturer, we may experience increased costs and expenses, as well as significant delays in the delivery of our products to customers.

**We may not be able to effectively manage our growth or develop our financial and managerial reporting systems, or we may need to incur significant expenditures to address the additional operational and control requirements of our growth, either of which could harm our business and operating results.**

To continue to grow, we must continue to expand and improve our operational, engineering, accounting and financial systems, procedures, controls and other internal management systems. This may require substantial managerial and financial resources and our efforts may not be successful. Our current systems, procedures and controls may not be adequate to support our future operations. If we fail to adequately manage our growth or to improve our operational, financial and management information systems, the quality of our products and the management of our operations could suffer, which could adversely affect our operating results.

**Our ability to develop, market and sell products could be harmed if we are unable to retain or hire key personnel.**

Our future success depends upon our ability to recruit and retain the services of key executive, engineering, finance and accounting, sales, marketing and support personnel. Our Chief Executive Officer has served in that role for us for over thirty years and the loss of his services could have a negative impact on our operations. The supply of highly qualified individuals, in particular engineers in very specialized technical areas, or sales people specializing in the semiconductor industry, is limited and competition for such individuals is intense. As part of our restructuring efforts



in fiscal 2013, 2014, and 2015 we terminated a significant number of employees and also imposed work furloughs. Our remaining employees, many of whom are highly qualified engineers, may be discomfited by these actions and may choose to seek alternative employment opportunities. The majority of our officers and key employees are not bound by an employment agreement for any specific term. The loss of the services of any of our key employees, the inability to attract or retain key personnel in the future or delays in hiring required personnel to fill existing vacancies, particularly engineers and sales personnel, and the complexity and time involved in hiring and training new employees, could delay the development and introduction of new products, and negatively impact our ability to market, sell or support our existing products.

**Litigation due to stock price volatility or other factors could cause us to incur substantial costs and divert our attention and resources.**

Securities class action litigation has often been brought against a company following periods of volatility in the market price of its securities. Companies in the semiconductor industry are particularly vulnerable to this kind of litigation due to the high volatility of their stock prices. While we are not aware of any such contemplated class action litigation against us, we may in the future be a party to such securities litigation. Any future lawsuits to which we may become a party will likely be expensive and time consuming to investigate, defend and resolve. Such costs, which include investigation and defense, the diversion of our attention and resources and any losses resulting from these claims, could significantly increase our expenses and adversely affect our profitability and cash flow.

**Our business is subject to seasonality, which may cause our revenue to fluctuate.**

Our business is subject to seasonality as a result of our target markets, particularly the Connected Smart TV Platforms market, which historically has peaked in the third quarter. We sell a number of our semiconductor products to our customers who manufacture products for the consumer electronics market. Our customers who manufacture products for the consumer electronics market typically experience seasonality in the sales of their products which in turn may affect the timing and volume of orders for our chipsets. We expect to experience lower sales in our first and/or fourth fiscal quarters and higher sales in our second and/or third fiscal quarters as a result of the seasonality of demand associated with the consumer electronics markets. For example, we expect that our Connected Smart TV Platforms market may experience seasonality typical of the consumer electronics markets, resulting in slower Connected Smart TV Platforms sales in the first and fourth quarter of each calendar year and strongest Connected Smart TV Platforms sales in the third calendar quarter. As a result of the potential seasonality in our business, our operating results may vary significantly from quarter to quarter.

**Regional instability in Israel may adversely affect business conditions and may disrupt our operations and negatively affect our revenues and profitability.**

As a result of our acquisition of CopperGate in November 2009, we have engineering facilities, administrative and sales support operations and, as of January 28, 2017, we had 46 employees located in Israel. Accordingly, political, economic and military conditions in Israel may directly affect our business. Since the establishment of the State of Israel in 1948, a number of armed conflicts have taken place between Israel and its neighbors, as well as incidents of civil unrest. In addition, in the past, Israel and companies doing business with Israel has been the subject of economic boycotts. Although Israel has entered into various agreements with Egypt, Jordan and the Palestinian Authority, Israel has been and is subject to civil unrest and terrorist activity, with varying levels of severity since September 2000. Recently, there has been an increase in civil unrest and political instability in the Middle East, including the recent escalation of conflict in Syria and between armed forces of the Israeli and the Palestinian Authority. Business stoppages for affected areas were and may be necessary. Any future armed conflicts, civil unrest or political instability in the region may negatively affect business conditions and adversely affect our results of operations.

In addition, our business insurance does not cover losses that may occur as a result of events associated with the security situation in the Middle East. Although the Israeli government currently covers the reinstatement value of direct damages that are caused by terrorist attacks or acts of war, we cannot assure you that this government coverage will be maintained. Any losses or damages incurred by us could have a material adverse effect on our business and financial results.

**Regional instability in Vietnam may adversely affect business conditions and may disrupt our operations and negatively affect our revenue and profitability.**

We have a research and development facility and, as of January 28, 2017, we had 85 employees located in Vietnam. Accordingly, political conditions in Vietnam may directly affect our business. The bilateral relations between China and Vietnam have been, and continue to be, turbulent. For example, in May 2014, China dispatched an oil rig to a contested area of the South China Sea which is claimed by both China and Vietnam. As a response, violent protests erupted in Vietnam resulting in collateral damage to factories and infrastructure. Consequently, business stoppages for affected businesses may be necessary. Any future protests due to political conflicts in the region may negatively impact business conditions and adversely affect our results of operations.

In addition, our business insurance does not cover losses that may occur as a result of events associated with the security situation brought on due to political instability in Vietnam. Although the Vietnamese government is proactively taking steps to protect against potential damages to factories and infrastructure and curtail business stoppages, there can be no assurance of their success. Any losses or damages incurred by us could have a material adverse effect on our business and financial results.

**The income tax benefits in Israel to which we are currently entitled from our approved enterprise program may be reduced or eliminated by the Israeli government in the future and may require us to satisfy certain specified conditions. If they are reduced or if we fail to satisfy these conditions, we may be required to pay increased taxes and may be denied these benefits in the future.**

The Investment Center of the Ministry of Industry, Trade and Labor has granted “approved and/or beneficiary enterprise” status to certain product development programs at our facility in Tel Aviv. Commencing calendar year 2014, Sigma Designs Israel’s taxable income from the approved and beneficiary enterprise program was subject to a reduced tax rate for eight years, depending on the percentage of Sigma Designs Israel’s share capital held by non-Israelis. The Israeli government may reduce, or eliminate in the future, tax benefits available to approved enterprise programs. Our approved and beneficiary programs and the resulting tax benefits may not continue in the future at their current levels or at any level. The termination or reduction of these tax benefits would likely increase our tax liability. Additionally, the benefits available to an approved and beneficiary enterprise program are dependent upon the fulfillment of conditions stipulated under applicable law and in the certificate of approval. If we fail to comply with these conditions, in whole or in part, we may be required to pay additional taxes for the period in which we benefited from the tax exemption or reduced tax rates and would likely be denied these benefits in the future. In either case, the amount by which our taxes would increase will depend on the difference between the then applicable tax rate for non-approved enterprises and the rate of tax, if any, that we would otherwise pay as an approved enterprise, and the amount of any taxable income that we may earn in the future. The current maximum enterprise tax rate in Israel is 25%.

**Failure to maintain effective internal control over financial reporting may cause us to delay filing our periodic reports with the SEC, affect our NASDAQ listing and adversely affect our stock price.**

The SEC, as directed by Section 404 of the Sarbanes-Oxley Act of 2002, adopted rules requiring public companies to include a report of management on internal control over financial reporting in their annual reports on Form 10-K. Our management is responsible for maintaining internal control over financial reporting designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with GAAP. Our management assessed the effectiveness of our internal control over financial reporting as of January 28, 2017 and concluded that our internal control over financial reporting was effective. Although we routinely review our internal control over financial reporting in order to ensure compliance with the Section 404 requirements, a failure to maintain adequate internal controls over financial reporting could result in an adverse reaction in the financial marketplace owed to a loss of investor confidence in the reliability of our financial statements, which could negatively impact our stock price.

**Our headquarters, certain of our other facilities, and some of our suppliers and third-party manufacturers are located in active earthquake zones. Our suppliers, manufacturers and we may face earthquakes, tsunamis, floods or other types of natural disasters, which could cause resource shortages and production delays, which in turn may disrupt and harm our business, results of operations and financial condition.**

We are headquartered in the San Francisco Bay Area, have a research and development and sales office in Japan and outsource most of our manufacturing to Taiwan. Each of these areas is an active earthquake zone, and certain of our suppliers and third-party manufacturers conduct operations in the same regions or in other locations that are susceptible to natural disasters. The occurrence of a natural disaster, such as an earthquake, tsunami or flood, or localized extended outages of critical utilities or transportation systems, or any critical resource shortages, affecting us, our suppliers or our third-party manufacturers could cause a significant interruption in our production, business, damage or destroy our facilities or those of our suppliers and cause us to incur significant costs or result in limitations on the availability of our raw materials, any of which could harm our business, financial condition and results of operations.

**We rely significantly on information technology to operate our business and any failure, inadequacy, breach, interruption or security failure of that technology or any misappropriation of any data could harm our reputation or our ability to operate our business.**

We rely on our information technology systems and networks, including the Internet and third-party hosted services (“information technology systems”), for product design, production, forecasting, ordering, manufacturing, transportation, and sales, as well as for processing financial information for external and internal reporting purposes. The failure of these systems to operate effectively, problems with transitioning to upgraded or replacement systems, or a breach in security of these systems could cause delays in product fulfillment and reduced efficiency of our

operations, could require significant resources to remediate the problem, and may have an adverse effect on our reputation, results of operations and financial condition.

We also use information technology systems to process financial information and results of operations for internal reporting purposes and to comply with regulatory financial reporting, legal and tax requirements. In the event our information technology systems suffer severe damage, disruption or shutdown and our business continuity plans do not effectively resolve the issues in a timely manner, we could experience delays in reporting our financial results, which could result in damage to our reputation and could cause our stock price to decline.

In addition, any breach of our network by data thieves or hackers may result in the loss of valuable business data, our customers' or employees' personal information or a disruption of our business, which could give rise to unwanted media attention, damage our customer relationships and reputation and result in lost sales, fines or potential lawsuits. In addition, we must comply with increasingly complex regulatory standards enacted to protect our business and personal data. An inability to maintain compliance with these regulatory standards could subject us to legal risks.

## Risks Related to Our Common Stock

**Our operating results are subject to significant fluctuations due to many factors and any of these factors could adversely impact our stock price.**

Our operating results have fluctuated in the past and may continue to fluctuate in the future due to a number of factors, including:

- failure to reduce our expenses sufficiently to achieve profitability at current revenue levels;
- the loss of one or more significant customers;
- changes in our pricing models and product sales mix;
- unexpected reductions in unit sales and average selling prices, particularly if they occur precipitously;
- new product introductions by us and our competitors;
- the level of acceptance of our products by our customers and acceptance of our customers' products by their end user customers;
- an interrupted or inadequate supply of semiconductor chips or other materials included in our products;
- availability of third-party manufacturing capacity for production of certain products;
- shifts in demand for the technology embodied in our products and those of our competitors;
- the timing of, and potential unexpected delays in, our customer orders and product shipments;
- the impairment and associated write-down of strategic investments that we may make from time-to-time;

- write-downs of accounts receivable;

- inventory obsolescence;

- a significant increase in our effective tax rate in any particular period as a result of the exhaustion, disallowance or accelerated recognition of our net operating loss carry-forwards or otherwise;

- technical problems in the development, production ramp up and manufacturing of products, which could cause shipping delays;

- the impact of potential economic instability in the United States and Asia-Pacific region, including the continued effects of the recent worldwide economic slowdown;

- expenses related to implementing and maintaining a new enterprise resource management system and other information technologies; and

- expenses related to our compliance efforts with Section 404 of the Sarbanes-Oxley Act of 2002.

In addition, the market prices of securities of semiconductor and other technology companies have been, and continue to remain, volatile. This volatility has significantly impacted the market price of securities of many technology companies. Accordingly, shareholders may not be able to resell their shares of common stock at or above the price they have paid.

**Our stock price has demonstrated continued volatility in the stock market and our operating performance may cause further fluctuations in our stock price.**

The market for our common stock has been subject to significant volatility which is expected to continue. For example, during the fiscal year ended January 28, 2017, the closing sale price per share of our common stock on the NASDAQ Global Market ranged from a high of \$8.38 on September 15, 2016 to a low of \$5.60 on December 7, 2016. This volatility may be related or proportionate to our operating performance. Our operating performance, as well as general economic and market conditions, could cause the market price of our common stock to decline.

**If securities or industry analysts do not publish research or reports about our business or if they issue an adverse opinion regarding our stock, our stock price and trading volume could decline.**

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about our company or our business. If one or more of the analysts who cover us issue an adverse opinion regarding our stock, our stock price may decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets which could cause our stock price or trading volume to decline.

**Provisions in our organizational documents and California law could delay or prevent a change in control of Sigma that our shareholders may consider favorable.**

Our articles of incorporation and bylaws contain provisions that could limit the price that investors may be willing to pay in the future for shares of our common stock. Our Board of Directors can authorize the issuance of preferred stock that can be created and issued by our Board of Directors without prior shareholder approval, commonly referred to as "blank check" preferred stock, with rights senior to those of our common stock. The rights of the holders of our common stock will be subject to, and may be adversely affected by, the rights of the holders of any preferred stock that we may issue in the future. The issuance of preferred stock may have the effect of delaying, deterring or preventing a change in control and could adversely impact the voting power of certain shares. In addition, provisions of California law may make it more difficult for a third party to acquire a majority of our outstanding voting stock by discouraging a hostile bid or delaying or deterring a merger, acquisition or tender offer in which our shareholders could receive a premium for their shares.

#### **ITEM 1B. UNRESOLVED STAFF COMMENTS**



None.

## **ITEM 2. PROPERTIES**

We currently lease an approximately 43,000 square foot facility in Fremont, California that is used as our corporate headquarters. The lease on this facility carries a term of 81 calendar months commencing on January 1, 2015, for which payments began in October 2015. We also lease an approximately 24,000 square foot facility in Tel-Aviv, Israel that is used for our Israel-based operations. We have the right to renew the lease for the Israel facility until December 31, 2018. We also lease facilities for sales and sales support in South Korea, Japan, Shenzhen and Hong Kong. Additionally, we lease facilities for research and development in Shanghai, Vietnam, Singapore, Germany, France and The Netherlands, and facilities for sales and research and development in Taiwan and Denmark.

## **ITEM 3. LEGAL PROCEEDINGS**

Information with respect to this item may be found in Note 10, “Commitments and Contingencies—Litigations” to the Consolidated Financial Statements in Item 8, which is incorporated herein by reference.

## **ITEM 4. MINE SAFETY DISCLOSURES**

None.

**PART II****ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED SHAREHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES**

Our common stock trades on The NASDAQ Global Select under the trading symbol "SIGM." The following table sets forth the high and low sales prices per share of our common stock for each quarter in the last two fiscal years.

	<b>Fiscal 2017</b>		<b>Fiscal 2016</b>	
	<b>High</b>	<b>Low</b>	<b>High</b>	<b>Low</b>
First fiscal quarter	\$8.14	\$5.41	\$8.49	\$6.25
Second fiscal quarter	7.58	5.92	12.83	7.57
Third fiscal quarter	8.60	6.53	11.47	6.36
Fourth fiscal quarter	8.35	5.20	10.19	5.42

As of March 15, 2017, we had approximately 121 shareholders of record of our common stock.

We have never paid cash dividends on our common stock and we currently do not plan to pay cash dividends to our common shareholders in the foreseeable future.

For information about securities authorized for issuance under our equity compensation plans, please refer to Item 12 of Part III of this Form 10-K and Note 12 to our consolidated financial statements included in Item 8 of this report.

**Stock Performance Graph**

The following graph shows the value of a \$100 cash investment on the last business day of fiscal year 2012 in (i) our common stock, (ii) the NASDAQ Composite Index, and (iii) the NASDAQ Electronic Components Index. All values assume reinvestments of all dividends, if any and are calculated as of the last day of each of our fiscal years. Note that historic stock price performance shown on the graph below is not necessarily indicative of future stock price performance.



**ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA**

The following selected consolidated financial data (presented in thousands, except per share amounts) should be read in conjunction with our consolidated financial statements, the notes related thereto, and Management's Discussion and Analysis of Financial Condition and Results of Operations. The consolidated statements of operations data for the years ended January 28, 2017, January 30, 2016, and January 31, 2015, and the consolidated balance sheets data as of January 28, 2017, and January 30, 2016 have been derived from and should be read in conjunction with our audited consolidated financial statements and the notes thereto included elsewhere in this Annual Report on Form 10-K. The consolidated statements of operations data for the years ended February 1, 2014 and February 2, 2013 and the consolidated balance sheets data as of January 31, 2015, February 1, 2014, and February 2, 2013 are derived from audited consolidated financial statements which are not included herein.

	<b>Fiscal Years Ended</b>				
	<b>January 28, 2017</b>	<b>January 30, 2016</b>	<b>January 31, 2015</b>	<b>February 1, 2014</b>	<b>February 2, 2013</b>
<b>Consolidated Statements of Operations Data:</b>					
Net revenue	\$220,544	\$227,250	\$188,313	\$199,193	\$216,613
Loss from operations	\$(11,322)	\$(1,155)	\$(17,877)	\$(9,572)	\$(83,346)
Net (loss) income	\$(18,315)	\$158	\$(21,701)	\$(11,049)	\$(101,768)
Basic net (loss) income per share	\$(0.49)	\$0.00	\$(0.63)	\$(0.32)	\$(3.06)
Diluted net (loss) income per share	\$(0.49)	\$0.00	\$(0.63)	\$(0.32)	\$(3.06)

	<b>January 28, 2017</b>	<b>January 30, 2016</b>	<b>January 31, 2015</b>	<b>February 1, 2014</b>	<b>February 2, 2013</b>
	<b>Consolidated Balance Sheets Data:</b>				
Working capital	\$97,569	\$92,478	\$98,326	\$91,870	\$96,628
Total assets	\$201,774	\$216,669	\$205,333	\$215,775	\$220,831
Other long-term obligations	\$6,225	\$4,023	\$2,822	\$7,058	\$449
Total shareholders' equity	\$143,546	\$152,805	\$143,290	\$158,391	\$162,018

The following table presents details of the total stock-based compensation expense, excluding tender offer payments associated with the adjustments to measurement dates for option grants, that is included in the consolidated statements of operations data above:

**Fiscal Years Ended**

	<b>January 28, 2017</b>	<b>January 30, 2016</b>	<b>January 31, 2015</b>	<b>February 1, 2014</b>	<b>February 2, 2013</b>
<b>Stock-based Compensation Expense:</b>					
Cost of revenue	\$294	\$227	\$190	\$267	\$487
Research and development	3,452	3,241	3,147	3,381	5,740
Sales and marketing	1,197	1,151	979	1,275	1,811
General and administrative	1,562	1,940	1,963	1,891	2,557
	<b>\$6,505</b>	<b>\$6,559</b>	<b>\$6,279</b>	<b>\$6,814</b>	<b>\$10,595</b>

## **ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

*You should read the following discussion in conjunction with our consolidated financial statements and related notes in this Form 10-K. Except for historical information, the following discussion contains forward-looking statements within the meaning of Section 27A of the Securities Exchange Act of 1933 and Section 21E of the Securities Exchange Act of 1934. In some cases, you can identify forward-looking statements by terms such as "may," "might," "will," "objective," "intend," "should," "could," "can," "would," "expect," "believe," "estimate," "predict," "potential," "plan," or the negative of these terms, and similar expressions intended to identify forward-looking statements. These forward-looking statements, include, but are not limited to: statements about our capital resources and needs, including the adequacy of our current cash reserves; the expectation that our revenue from the IoT Devices market will likely increase in the foreseeable future; anticipated deployments and design wins in the Connected Smart TV Platforms target market, if any; anticipated seasonality associated with our Connected Smart TV Platforms and IoT Devices target markets; any expectations related to the integration of or impact on our product offerings as a result of our acquisition of Bretelon; and our expectations that our gross margin will vary from period to period. These forward-looking statements involve risks and uncertainties. Our actual results may differ significantly from those projected in the forward-looking statements. Factors that might cause future results to differ materially from those discussed in the forward-looking statements include, but are not limited to, those discussed under Part I, Item 1A "Risk Factors" in this Form 10-K as well as other information found in the documents we file from time to time with the Securities and Exchange Commission. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this Form 10-K. Unless required by U.S. federal securities laws, we do not intend to update any of these forward-looking statements to reflect circumstances or events that occur after the statement is made.*

### **Overview**

We are a global integrated system-on-chip ("SoC") solutions provider offering intelligent platforms for use in a variety of home entertainment and home control appliances. Our goal is to ensure that our chipsets serve as the foundation for some of the world's leading consumer products, including televisions, media connectivity, smart home, and mobile Internet of Things ("IoT") products. Our business generates revenue primarily by delivery of relevant, cost-effective semiconductors that are targeted toward end-product manufacturers, Original Equipment Manufacturers, or OEMs, and Original Design Manufacturers, or ODMs. We also derive a portion of our revenue from other products and services, including technology licenses, software development kits, and engineering support services for hardware and software.

### **Our chipset products and target markets**

We consider the majority of our semiconductor products to be chipsets because each of our products is comprised of multiple semiconductors. We believe our chipsets enable our customers to efficiently bring consumer multimedia devices to market. We design our highly integrated products to significantly improve performance, lower power consumption and reduce cost.

We sell our products into two target markets: Connected Smart TV Platforms and IoT Devices. Connected Smart TV Platforms products consist of a range of platforms that are based on highly integrated chips, embedded software, and hardware reference designs. These products include all of our products that are sold into digital televisions, connected media processors and players delivering IP streaming video, including hybrid versions of these products, and wired home networking controller chipsets that are designed to provide connectivity solutions between various home entertainment products and incoming video streams. IoT Devices consist of our wireless Z-Wave chipsets, modules and mobile IoT cellular solutions.

We are organized as, and operate in, one reportable segment. Starting with the first quarter of fiscal 2017, we have combined certain previously reported target markets commensurate with changes taking effect in our industry as a whole. Specifically, we combined the Smart TV, Media Connectivity and Set-top Box markets into one target market, which we refer to as the Connected Smart TV Platforms target market. This target market is intended to include all of our products sold into or supporting the digital television experience including products designed for video-post processing, delivering of IP streaming video, audio, VoIP, or data and the equipment intended to connect these various home entertainment products.

We have historically and continue to operate under the belief that the Smart TV, Set-top Box and Media Connectivity products complement their respective value propositions to the markets into which we sell. This combination is intended to present this value proposition as a holistic solution or platform for the anticipated convergence of IP-video, audio and data delivery across any device within the connected home. All previously reported amounts in prior periods have been adjusted retrospectively to reflect our target market changes. Our IoT Devices market product categorizations remain unchanged, and beginning in the fourth quarter of fiscal 2016 includes amounts from our acquisition of Bretelon.

### *Connected Smart TV Platforms Market*

The Connected Smart TV Platforms market (previously reported as three separate target markets of Smart TV, Media Connectivity and Set-top Box) consists of all products that are sold into digital televisions as well as other adjacent markets using chipset products that are designed for video post-processing, products delivering IP streaming video, including hybrid versions of these products and communication devices that use a standard protocol to connect equipment inside the home and stream IP-based video and audio, VoIP, or data through wired or wireless connectivity. We serve this market with our media processor chips, dedicated post-processing products and home networking controllers.

### *IoT Devices Market*

The IoT Devices market consists of both smart home applications (including gateways and automated consumer devices) and mobile IoT applications (primarily tracking tags). Our smart home product line is marketed under our Z-Wave brand of wireless chips, modules and Z-Wave mesh networking protocol.

### *License and Other Markets*

The license and other markets includes other products and services, including technology licenses, software development kits, and engineering support services for hardware and software.

### **Critical accounting policies and estimates**

Management's discussion and analysis of financial condition and results of operations are based on our consolidated financial statements, which have been prepared in accordance with United States generally accepted accounting principles, or GAAP. The preparation of consolidated financial statements and related disclosures requires us to make judgments that affect the reported amounts and disclosures of the assets and liabilities at the date of the consolidated financial statements and also revenue and expenses during the period reported. By their nature, these estimates and judgments are subject to an inherent degree of uncertainty. The primary areas that require significant estimates and judgments by management include, but are not limited to, revenue recognition, allowances for doubtful accounts, sales returns, warranty obligations, inventory valuation, stock-based compensation expense, purchased intangible asset valuations, strategic investments, deferred income tax asset valuation allowances, uncertain tax positions, tax contingencies, restructuring costs, litigation and other loss contingencies. Management bases its estimates and judgments on historical experience, market trends and other factors that are believed to be reasonable under the



circumstances. These estimates form the basis for judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from what we anticipate and different assumptions or estimates about the future could change our reported results. We believe the critical accounting policies as disclosed in Note 1, "Organization and summary of significant accounting policies," of the Notes to consolidated financial statements of this Form 10-K included in Item 8 of this report, reflect the more significant judgments and estimates used in preparation of our consolidated financial statements.

**Restructuring charges:** Our restructuring charges include primarily payments to employees for severance, asset impairment charges, termination fees associated with leases and other contracts and other costs related to the closure of facilities. Accruals are recorded when management has approved a plan to restructure operations and a liability has been incurred. The restructuring accruals are based upon management estimates at the time they are recorded. These estimates can change depending upon changes in facts and circumstances subsequent to the date the original liability was recorded. During fiscal 2016 and 2015, we recorded restructuring charges of less than \$0.1 million and \$1.1 million, respectively. We incurred no restructuring charges in fiscal 2017.

**Short and long-term marketable securities:** Short-term marketable securities represent highly liquid investments with a remaining maturity date at the end of each reporting period of greater than 90 days but less than one year and are stated at fair value. Long-term marketable securities represent securities with contractual maturities greater than one year from the date of purchase. We classify our marketable securities as available-for-sale because the sale of such securities may be required prior to maturity. Management determines the appropriate classification of its investments at the time of purchase and reevaluates the designations at each balance sheet date.

The difference between amortized cost (cost adjusted for amortization of premiums and accretion of discounts, which is recognized as an adjustment to interest income) and fair value, representing unrealized holding gains or losses, are recorded separately as a component of accumulated other comprehensive income (loss) within shareholders' equity. Any gains and losses on the sale of marketable securities are determined based on the specific identification method.

We monitor all of our marketable securities for impairment and if these securities are reported to have a decline in fair value, we use significant judgment to identify events or circumstances that would likely have a significant adverse effect on the future value of each investment including: (i) the nature of the investment; (ii) the cause and duration of any impairment; (iii) the financial condition and future prospects of the issuer; (iv) for securities with a reported decline in fair value, our ability to hold the security for a period of time sufficient to allow for any anticipated recovery of fair value; (v) the extent to which fair value may differ from cost; and (vi) a comparison of the income generated by the securities compared to alternative investments. We recognize an impairment charge if a decline in the fair value of our marketable securities is judged to be other-than-temporary. No such impairment charges were recorded in fiscal 2017, 2016 or 2015.

**Accounts receivable and allowances:** We defer recognition of revenue and the related receivable when we cannot estimate whether collectability is reasonably assured at the time products and services are delivered to our customers. We also provide allowances for bad debt and sales returns. In establishing the allowance for bad debt, in cases where we are aware of circumstances that may impair a specific customer's ability to meet its financial obligations subsequent to the original sale, we will record an allowance against amounts due, and thereby reduce the net recognized receivable to the amount we reasonably believe will be collected. For all other customers, we recognize allowances for doubtful accounts based on the length of time the receivables are past due, industry and geographic concentrations, the current business environment and our historical experience.

In establishing the allowance for sales returns, we make estimates of potential future returns of products for which revenue has been recognized in the current period, including analyzing historical returns, current economic trends and changes in customer demand and acceptance of our products. Our allowance for sales returns, discounts and bad debt was \$1.6 million and \$2.0 million at January 28, 2017 and January 30, 2016, respectively. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments, or future product returns increased, additional allowances may be required.

**Inventory:** Inventory consists of wafers and other purchased materials, work in process and finished goods and is stated at the lower of standard cost, which approximates actual cost on a first-in, first-out basis, or market value. We evaluate our ending inventory for excess quantities and obsolescence on a quarterly basis. This evaluation includes analysis of historical and estimated future unit sales by product as well as product purchase commitments that are not cancelable. We develop our demand forecasts based, in part, on discussions with our customers about their forecasted supply needs. However, our customers generally only provide us with firm purchase commitments for the month and quarter and not our entire forecasted period. Additionally, our sales and marketing personnel provide estimates of future sales to prospective customers based on actual and expected design wins. A provision is recorded for inventory in excess of estimated future demand.

We write-off inventory that is obsolete. Obsolescence is determined from several factors, including competitiveness of product offerings, market conditions and product life cycles. Provisions for excess and obsolete inventory are charged to cost of revenue. At the time of the loss recognition, a new, lower-cost basis for that inventory is established and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis. If this lower-cost inventory is subsequently sold, we will realize higher gross margins for those products.

Inventory write-downs inherently involve assumptions and judgments as to amount of future sales and selling prices. As a result of our inventory valuation reviews, we charged provisions for excess and obsolete inventory of approximately \$2.0 million, \$3.2 million and \$4.3 million to cost of revenue for fiscal 2017, 2016 and 2015, respectively. We have sold through \$0.3 million, \$0.9 million and \$0.6 million of inventory that we had previously recorded as excess and obsolete in fiscal 2017, 2016 and 2015, respectively. Although we believe that the assumptions we use in estimating inventory write-downs are reasonable, significant future changes in these assumptions could produce a significantly different result. There can be no assurances that future events and changing market conditions will not result in significant inventory write-downs.

**Warranty:** Our products typically carry a one-year limited warranty that products will be free from defects in materials and workmanship. Warranty cost is estimated at the time revenue is recognized, based on historical activity and additionally for any specific known product warranty issues. Accrued warranty cost includes hardware repair and/or replacement and software support costs and is included in accrued liabilities in the consolidated balance sheets. Although we engage in extensive product quality programs and processes, our warranty obligation has been and may in the future be affected by product failure rates, product recalls, repair or replacement costs and additional development costs incurred in correcting any product failure. Should actual costs differ from our initial estimates, we record the difference in the period they are identified. Actual claims are charged against the warranty reserve.

**Software, equipment and leasehold improvements:** Software, equipment and leasehold improvements are stated at cost. Depreciation and amortization for software, equipment and leasehold improvements is computed using the straight-line method based on the useful lives of the assets (one to five years) or the remaining lease term if shorter. Any allowance for leasehold improvements received from the landlord for improvements to our facilities is amortized using the straight-line method over the lesser of the remaining lease term or the useful life of the leasehold improvements. Repairs and maintenance costs are expensed as incurred.

**Business combinations:** The purchase accounting method applied to business combinations requires us to allocate the purchase price of acquired companies to the identifiable tangible and intangible assets acquired and liabilities assumed, based on their estimated fair values. Such valuations require us to make significant estimates and assumptions, especially with respect to intangible assets. The significant purchased intangible assets recorded by us include developed technology, customer relationships, purchased IP, non-compete agreements and trademarks. Critical estimates and assumptions used in valuing these assets include but are not limited to: future expected cash flows from acquired products, customer relationships and acquired developed technologies and patents; assumptions regarding brand awareness and market position, and assumptions about the period of time the brand will continue to be used in our product portfolio; and assumptions about discount rates. The estimated fair values are based upon assumptions that we believe to be reasonable but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates.

**Intangible and other long-lived assets:** The amounts and useful lives assigned to intangible and other long-lived assets acquired, other than goodwill, impact the amount and timing of future amortization. Intangible assets include those acquired through business combinations and intellectual property that we purchase for incorporation into our product designs. We begin amortizing such intellectual property at the time that we begin shipment of the associated products into which it is incorporated. We amortize the intellectual property over the estimated useful life of the associated products, generally two to three years.

Goodwill is recorded as the difference, if any, between the aggregate consideration paid for an acquisition and the fair value of the net tangible and intangible assets acquired. Other intangible assets primarily represent purchased developed technology, customer relationships, purchased IP, non-compete agreements and trademarks. We currently amortize our intangible assets with definitive lives over periods ranging from three to ten years using a method that reflects the pattern in which the economic benefits of the intangible assets are consumed or otherwise used or, if that pattern cannot be reliably determined, using a straight-line amortization method.

**Impairment of goodwill and other long-lived assets:** We test long-lived assets, including purchased intangible assets, for impairment whenever events or changes in circumstances, such as a change in technology, indicate that the carrying value of these assets may not be recoverable. If indicators of impairment exist, we determine whether the carrying value of an asset or asset group is recoverable, based on comparisons to undiscounted expected future cash flows that the assets are expected to generate. If an asset is not recoverable, we record an impairment loss equal to the amount by which the carrying value of the asset exceeds its fair value. We primarily use the income valuation approach to determine the fair value of our long-lived assets and purchased intangible assets.

We evaluate goodwill on an annual basis as of the last day of our fiscal year and whenever events or changes in circumstances indicate the carrying value may not be recoverable. We first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If we conclude that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, we conduct a two-step quantitative goodwill impairment test. The first step requires identifying the reporting units and comparing the fair value of each reporting unit to its net book value, including goodwill. We have identified that we operate as

one reporting unit and the fair value of our operating unit is determined to be equal to our market capitalization as determined through quoted market prices, adjusted for a reasonable control premium. We estimate the control premium based on a review of acquisitions of comparable semiconductor companies that were completed during the last four years. If the carrying amount of a reporting unit exceeds the reporting unit's fair value, we perform the second step of the goodwill impairment test. The second step of the goodwill impairment test involves comparing the implied fair value of the affected reporting unit's goodwill with the carrying value of that goodwill. The amount by which the carrying value of the goodwill exceeds its implied fair value, if any, is recognized as an impairment loss.

Determining the fair value of a reporting unit is judgmental in nature and involves the use of significant estimates and assumptions. These estimates and assumptions include forecasts of revenue and operating margins used to calculate projected future cash flows, risk-adjusted discount rates, future economic and market conditions and a determination of appropriate market comparables. We base our fair value estimates on assumptions we believe to be reasonable at that time, however, actual future results may differ from those estimates. Future competitive, market and economic conditions could negatively impact key assumptions including our market capitalization, actual control premiums or the carrying value of our net assets, which could require us to realize an additional impairment.

***Long-term investments:*** Investments in private equity securities of less than 20% owned companies are accounted for using the cost method unless we can exercise significant influence or the investee is economically dependent upon us, in which case the equity method is used. We evaluate our long-term investments for impairment annually or whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable.

**Revenue recognition:** We derive our revenue primarily from product sales which comprised approximately 97%, 99% and 97% of total net revenue during fiscal 2017, 2016 and 2015, respectively. Our products, which we refer to as chipsets, consist of highly integrated chips and embedded software that enables real-time processing of digital video and audio content; and in the case of our IoT Devices, establishes a mesh network protocol that provides an interoperable platform for automation and monitoring solutions, all of which we refer to as embedded software. We do not deliver software as a separate product in connection with product sales. We recognize revenue for product sales when persuasive evidence of an arrangement exists, delivery has occurred, the fee is fixed or determinable and collectability is reasonably assured. These criteria are usually met at the time of product shipment. We record reductions of revenue for estimated product returns and pricing adjustments, such as rebates, in the same period that the related revenue is recorded. The amount of these reductions is based on historical sales returns, analysis of credit memo data, specific criteria included in the agreements, and other factors known at the time. We accrue 100% of potential returns at the time of sale when there is not sufficient historical sales data and recognize revenue when the right of return expires. We also accrue 100% of potential rebates at the time of sale and do not apply a breakage factor. We reverse the accrual for unclaimed rebate amounts as specific rebate programs contractually end and when we believe unclaimed rebates are no longer subject to payment and will not be paid. See Note 6, "Supplemental financial information," of the Notes to consolidated financial statements of this Form 10-K included in Item 8 of this report for a summary of our rebate activity.

On occasion, we derive revenue from the license of our internally developed intellectual property ("IP"). IP licensing agreements that we enter into generally provide licensees the right to incorporate our IP components in their products with terms and conditions that vary by licensee. Our license fee arrangements generally include multiple deliverables and we are required to determine whether there is more than one unit of accounting. To the extent that the deliverables are separable into multiple units of accounting, we allocate the total fee on such arrangements to the individual units of accounting using management's best estimate of selling price ("ESP"), if third party evidence ("TPE") or vendor specific objective evidence ("VSOE") does not exist. We defer revenue recognition for consideration that is contingent upon future performance or other contractual terms.

Our process for determining our ESP for deliverables without VSOE or TPE considers multiple factors that may vary depending upon the unique facts and circumstances related to each deliverable. The key factors that we consider in developing the ESPs include the nature and complexity of the licensed technologies, our cost to provide the deliverables, the availability of substitute technologies in the marketplace and our historical pricing practices. We then recognize revenue for each unit of accounting depending on the nature of the deliverable(s) comprising the unit of accounting in accordance with the revenue recognition criteria mentioned above. Fees under these agreements generally include (a) license fees relating to our IP, (b) engineering services, and (c) support services. Historically, each of these elements has standalone value and therefore each are treated as separate units of accounting. Any future licensing arrangements will be analyzed based on the specific facts and circumstances which may be different than our historical licensing arrangements.

For deliverables related to licenses of our technology that involve significant engineering services, we recognize revenue in accordance with the provisions of the proportional performance method or milestone method, as applicable. We determine costs associated with engineering services using actual labor dollars incurred and estimate other direct or incremental costs allocated based on the percentage of time the engineer(s) spent on the project. These

costs are deferred until revenue recognition criteria have been met, at which time they are reclassified as cost of revenue.

Licensing revenue deliverables are generally recognized using the milestone method. Under the milestone method, we recognize revenue that is contingent upon the achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. To be considered substantive, the consideration earned by achieving the milestone should be (a) commensurate with either (i) the vendor's performance to achieve the milestone or (ii) to the enhancement of the value of the item delivered as a result of a specific outcome resulting from the vendor's performance to achieve the milestone (b) the consideration should relate solely to past performance, and (c) the consideration should be reasonable relative to all deliverables and payment terms in the arrangement. Other milestones that do not fall under the definition of a milestone under the milestone method are recognized under the authoritative guidance concerning revenue recognition.

We derive a portion of our revenues in the form of fees from members of a wholly-owned entity dedicated to the marketing, development and proliferation of the Z-Wave brand. Membership fees vary based on level and are generally billed on an annual basis with no obligation to renew. Revenue from membership dues is recognized in the month earned. Membership dues received in advance are included in deferred revenues and recognized as revenue ratably over the appropriate period, which is generally twelve months or less. The monthly dues are generally structured to cover the administrative costs and membership services. Membership revenue was approximately \$1.9 million, \$1.9 million and \$0.9 million during fiscal 2017, 2016 and 2015, respectively.

We defer revenue when payments are received from customers in advance of revenue recognition. Deferred revenue at both January 28, 2017 and January 30, 2016 was \$0.4 million, and is included in accrued liabilities in the accompanying consolidated balance sheets.

**Income taxes:** Income taxes are accounted for under an asset and liability approach. Deferred income taxes reflect the net tax effects of any temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts reported for income tax purposes, and any operating losses and tax credit carry-forwards. Deferred tax liabilities are recognized for future taxable amounts and deferred tax assets are recognized for future deductions, net of any valuation allowance, to reduce deferred tax assets to amounts that are considered more likely than not to be realized.

The impact of an uncertain income tax position on the income tax return must be recognized as the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained.

**Stock-based compensation:** We have in effect stock incentive plans under which incentive stock options, restricted stock units, restricted stock awards and non-qualified stock options have been granted to employees and members of the Board of Directors. We also have an employee stock purchase plan for all eligible employees. We measure and recognize compensation expense for all stock-based payment awards made to employees based on the closing fair market value of the Company's common stock on the date of grant. Stock option awards are measured using the Black-Scholes-Merton option pricing model. The value of the portion of the award that is ultimately expected to vest is recognized as expense on a ratable basis over the requisite service period for time-based awards and on a graded basis for performance-based awards in our consolidated statements of operations. We estimate forfeitures, based on historical experience, at the time of grant and revise our estimates, if necessary, in subsequent periods if actual forfeitures differ from those estimates. We recognize a benefit from stock-based compensation in the consolidated statements of shareholders' equity if an excess tax benefit is realized. Further information regarding stock-based compensation can be found in Note 12, "Equity incentive plans and employee benefits," of the Notes to consolidated financial statements of this Form 10-K included in Item 8 of this report.



## Results of operations

The following table is derived from our consolidated statements of operations and sets forth our historical operating results as a percentage of net revenue for each of the fiscal years indicated (in thousands, except percentages):

	Fiscal Years Ended						
	January	% of		January	% of		
	28, 2017	Net		30, 2016	Net	31, 2015	
	Revenue		Revenue	Revenue		Revenue	
<b>Net revenue</b>	\$220,544	100 %		\$227,250	100 %	\$188,313	100 %
Cost of revenue	114,565	52 %		114,090	50 %	92,967	49 %
<b>Gross profit</b>	105,979	48 %		113,160	50 %	95,346	51 %
<b>Operating expenses</b>							
Research and development	73,993	33 %		68,784	30 %	67,482	36 %
Sales and marketing	23,300	11 %		22,877	10 %	22,290	12 %
General and administrative	18,860	8 %		20,862	9 %	19,641	10 %
Restructuring costs	-	-		9	-	999	1 %
Impairment of IP, mask sets and design tools	1,148	1 %		1,783	1 %	2,811	1 %
Total operating expenses	117,301	53 %		114,315	50 %	113,223	60 %
<b>Loss from operations</b>	(11,322 )	(5 %)		(1,155 )	-	(17,877 )	(9 %)
Gain on sale of development project	-	-		7,551	3 %	-	-
Impairment of privately-held investments, net of gain on sale	(885 )	-		159	-	(602 )	(1 %)
Interest and other income, net	539	-		794	-	1,771	1 %
<b>(Loss) income before income taxes</b>	(11,668 )	(5 %)		7,349	3 %	(16,708 )	(9 %)
Provision for income taxes	6,647	3 %		7,191	3 %	4,993	3 %
<b>Net (loss) income</b>	\$(18,315 )	(8 %)		\$158	-	\$(21,701 )	(12 %)

### Net revenue

Our net revenue for fiscal 2017 decreased \$6.7 million, or 3%, compared to fiscal 2016. The decrease was primarily due to a \$5.3 million and \$1.6 million decline within the Connected Smart TV Platforms market and the IoT Devices market, respectively, partially offset by an increase in our license and other revenue of \$0.2 million. Sales of our chipsets remained largely consistent compared to fiscal 2016 and accounted for approximately 97%, 99% and 97% of our net revenue for fiscal 2017, 2016 and 2015, respectively.

Our net revenue for fiscal 2016 increased \$38.9 million, or 21%, compared to fiscal 2015. The increase was primarily due to a \$28.6 million and \$16.1 million increase within the Connected Smart TV Platforms market and the IoT Devices market, respectively, partially offset by a decline in our license and other revenue of \$5.8 million.

### **Net revenue by target market**

We sell our products into two primary target markets, which are the Connected Smart TV Platforms market, and the IoT Devices market. From time to time, we also receive license revenue from the licensing of our technology to various third parties, which is included in license and other markets. We are organized as, and operate in, one reportable segment. Starting with the first quarter of fiscal 2017, we have combined certain previously reported target markets commensurate with changes taking effect in our industry as a whole. Specifically, we combined the Smart TV, Media Connectivity and Set-top Box markets into one target market, which we refer to as the Connected Smart TV Platforms target market. This target market is intended to include all of our products sold into or supporting the digital television experience including products designed for video-post processing, delivering of IP streaming video, audio, VoIP, or data and the equipment intended to connect these various home entertainment products. We have historically and continue to operate under the belief that the Smart TV, Set-top Box and Media Connectivity products complement their respective value propositions to the markets into which we sell. This combination is intended to present this value proposition as a holistic solution or platform for the anticipated convergence of IP-video, audio and data delivery across any device within the connected home. All previously reported amounts in prior periods have been adjusted retrospectively to reflect our target market changes. Our IoT Devices market product categorizations remain unchanged, and beginning in the fourth quarter of fiscal 2016 includes amounts from our acquisition of Bretelon.

The following table sets forth our net revenue by target market and the percentage of net revenue represented by our product sales to each of those markets (in thousands, except percentages):

	<b>Fiscal Years Ended</b>						
	<b>January 28,</b>	<b>% of Net</b>	<b>January 30,</b>	<b>% of Net</b>	<b>January 31,</b>	<b>% of Net</b>	
	<b>2017</b>	<b>Revenue</b>	<b>2016</b>	<b>Revenue</b>	<b>2015</b>	<b>Revenue</b>	
Connected Smart TV Platforms	\$175,085	79	% \$180,360	79	% \$151,775	81	%
IoT Devices	45,159	21	% 46,792	21	% 30,667	16	%
License and other	300	-	% 98	-	% 5,871	3	%
<b>Net revenue</b>	<b>\$220,544</b>	<b>100</b>	<b>% \$227,250</b>	<b>100</b>	<b>% \$188,313</b>	<b>100</b>	<b>%</b>

**Connected Smart TV Platforms:** Net revenue for our Connected Smart TV Platforms market in fiscal 2017 decreased by \$5.3 million, or 3%, compared to fiscal 2016. We experienced a decrease of 21% in units shipped, partially offset by an increase of 23% in average selling price (“ASP”). The volume decline in our Connected Smart TV Platforms market resulted primarily from the continued decline of demand for our older legacy products, many of which are now approaching end-of-life. In addition, our wired home networking controller chipsets contributed significantly to this volume decline primarily due to reduced demand due to the continued expansion of wireless technologies in the market impacting our existing product offerings. The increase in ASP is primarily the result of continued penetration by our new product offerings in the market, which have higher ASPs for chipsets used in ultra-high definition televisions, also known as Ultra-HD televisions. The Smart TV market transition, and consequently, anticipated demand of Ultra-HD is bolstering the demand for our new generation products.

In September 2016, we entered into a joint collaboration agreement with Telechips Inc. (“Telechips”) to develop and commercialize a set-top box microprocessor SoC solution. Martin Manniche, a member of our board of directors, also serves on the board of directors of Telechips. We receive a marketing service fee in an amount equal to 50% of the net profit from the collaboration agreement, which is included in net revenue. The marketing service fee is recognized when products are shipped and all risks and rewards of ownership have been transferred to third-party customers, minus the cost of production and related operating expenses incurred by Telechips. Net loss from this collaborative arrangement was \$0.3 million in fiscal 2017.

Our Connected Smart TV Platforms revenue was derived mainly from the Asia region. We typically expect our strongest Connected Smart TV Platforms sales in the third calendar quarter and declining Connected Smart TV Platforms sales in the first and fourth quarter of each calendar year. We expect our net revenue from the Connected Smart TV Platforms market to continue to be a significant percentage of net revenue but will fluctuate in future periods as we continue to develop and introduce new products for this market and as a result of seasonality typically experienced in the consumer electronics market.

Net revenue for our Connected Smart TV Platforms market in fiscal 2016 increased by \$28.6 million, or 19%, compared to fiscal 2015. We experienced an increase in ASP, partially offset by a decrease in units shipped. The increase in ASP is primarily the result of continued penetration by our new product offerings in the market, which have higher ASPs for chipsets used in ultra-high definition, also known as Ultra-HD televisions. The Connected Smart TV Platforms market transition, and consequently, anticipated demand of Ultra-HD is bolstering the demand for our new generation products. The volume decline in our Connected Smart TV Platforms market resulted primarily from the continued decline of demand for our older legacy products, many of which are now approaching end-of-life. Our wired home networking controller chipsets also contributed significantly to this volume decline primarily due to reduced demand due to the continued expansion of wireless technologies in the market impacting our existing product offerings. Our connected media processors and players experienced declines in unit shipments primarily to the Asian region as IPTV service providers are pending transition from our MIPS-based products to the newer generation ARM-based products.

**IoT Devices:** Net revenue for our IoT Devices market in fiscal 2017 decreased \$1.6 million, or 3%, compared to fiscal 2016. The decrease was primarily the result of lower demand due to inventory adjustments undergone by our security and protection services and telecommunication customers, evidenced by a decrease of 14% in units shipped primarily to the Asia region. During fiscal 2017, we derived a portion of our IoT Devices revenue from the achievement of a milestone under a development agreement in connection with our acquisition of Bretelon of \$5.0 million.

We believe we have compelling products for our IoT Devices market and we continue to target large operators who are introducing home control and automation products primarily in these regions. We expect our acquisition of Bretelon to bolster our existing IoT product offerings in the near future by expanding the total addressable market to include products with outdoor applications, which are an ideal complement to our Z-Wave product line that covers indoor applications. We expect our revenue from the IoT Devices market to increase in the foreseeable future.

Net revenue for our IoT Devices market in fiscal 2016 increased \$16.1 million, or 53%, compared to fiscal 2015. The increase was primarily the result of increased demand in the IoT Devices market, evidenced by increases of 86% in unit shipments primarily to the Asian and North American regions as customers in security and protection services, telecommunication services and E-retailers continue to adopt our home automation solutions. These increases were partially offset by a decline in ASP of 20% due to fluctuations in terms negotiated with service providers.

**License and Other:** Our license and other revenue consists primarily of technology license revenue and revenue from other ancillary markets. Net revenue for fiscal 2017 increased \$0.2 million, or 206%, compared to fiscal 2016. The increase in revenue was attributable to one license agreement pursuant to which we licensed our technology to third parties for which we were able to recognize revenue. Our obligations under the aforementioned license arrangement was completed during the second quarter of fiscal 2017. We do not expect our license and other revenue to be a significant source of revenue, but this may fluctuate in future periods if we enter into a license agreement in the future. We do not have a sales program based around licensing our technology. However, we continue to evaluate opportunities as they arise in the future.

Net revenue for fiscal 2016 decreased \$5.8 million, or 98%, compared to fiscal 2015. The license revenue in fiscal 2015 was primarily attributable to two license agreements pursuant to which we licensed our technology to third parties. Our obligations under these license arrangements were completed during the second quarter of fiscal 2015 contributing to the decline.

### Net revenue by geographic region

The following table sets forth net revenue for each geographic region based on the ship-to location of customers (in thousands, except percentages):

	Fiscal Years Ended						
	January 28,	% of Net	January 30,	% of Net	January 31,	% of Net	
	2017	Revenue	2016	Revenue	2015	Revenue	
Asia	\$180,104	82	% \$172,773	76	% \$152,571	81	%
North America	32,732	15	% 42,335	19	% 20,746	11	%
Europe	7,692	3	% 10,292	4	% 12,012	6	%
Other Regions	16	-	% 1,850	1	% 2,984	2	%
<b>Net revenue</b>	<b>\$220,544</b>	<b>100</b>	<b>% \$227,250</b>	<b>100</b>	<b>% \$188,313</b>	<b>100</b>	<b>%</b>

**Asia:** Our net revenue increased \$7.3 million, or 4%, for fiscal 2017 compared to fiscal 2016. The increase was largely attributable to the increasing deployments of new generation products by our customers within the Connected Smart TV Platforms market, partially offset by a decrease in the IoT Devices market resulting from inventory adjustments undergone by our security and protection services and telecommunication customers. Net revenue from the Asia region as a percentage of our total net revenue during fiscal 2017 increased 6 percentage points, compared to fiscal 2016. This increase was primarily due to the significant decrease in revenue in North America. China (including Hong Kong), Taiwan and Thailand represented 61%, 28% and 5%, respectively, of the total net revenue generated from Asia in fiscal 2017.

Our net revenue increased \$20.2 million, or 13%, for fiscal 2016 compared to fiscal 2015. The increase was largely attributable to the increasing deployments of new generation products by our customers within the Connected Smart TV Platforms market, partially offset by reduced demand for our wired home networking controller chipsets. In Asia, we also experienced increases in the IoT Devices market due to increasing demand of home control products by an increasing number of operators leveraging these technologies in their service offerings to end users. Net revenue from the Asia region as a percentage of our total net revenue during fiscal 2016 decreased five percentage points, compared to fiscal 2015. This decrease was primarily due to the significant increase in revenue in North America. China (including Hong Kong), Taiwan and Thailand represented 54%, 29% and 8%, respectively, of the total net revenue generated from Asia in fiscal 2016.

**North America:** Our net revenue from North America decreased \$9.6 million, or 23%, for fiscal 2017 compared to fiscal 2016. This decrease was mainly attributable to the fluctuating deployments of newer generation products used in digital televisions by our customers within the Connected Smart TV Platforms market. The decrease was compounded by reduced demand for our wired home networking controller chipsets due to the continued expansion of wireless technologies in the market impacting our existing product offerings. Net revenue from North America as a percentage of our total net revenue during fiscal 2017 decreased 4 percentage points compared to fiscal 2016 primarily due to the decrease described above in the Connected Smart TV Platforms target market.

Our net revenue from North America increased \$21.6 million, or 104%, for fiscal 2016 compared to fiscal 2015. This increase was primarily attributable to the increasing deployments of newer generation products by our customers within the Connected Smart TV Platforms market and increases in the IoT Devices market due to increasing demand of home control and automation products by an increasing number of operators leveraging these technologies in their service offerings to end users. These increases were partially offset by lower revenue recorded in the license and other revenue market. The obligations under license agreements with two main customers in the North American region were completed during the second quarter of fiscal 2015. Net revenue from North America as a percentage of our total net revenue during fiscal 2016 increased eight percentage points compared to fiscal 2015 primarily due to the increasing IoT Devices market base and increased deployments of products within the Connected Smart TV Platforms market.

**Europe:** Our net revenue from Europe decreased \$2.6 million, or 25%, for fiscal 2017 compared to fiscal 2016. Net revenue from Europe as a percentage of our total net revenue for fiscal 2017 decreased 1 percentage point compared to fiscal 2016. These decreases were primarily the result of a decrease in shipments to our Connected Smart TV Platforms market, primarily in Germany and The Netherlands, as we continued to experience a shift away from legacy products with no corresponding adoption of newer generation Connected Smart TV Platforms products within this region.

Our net revenue from Europe decreased \$1.7 million, or 14%, for fiscal 2016 compared to fiscal 2015. Net revenue from Europe as a percentage of our total net revenue for fiscal 2016 decreased two percentage points compared to fiscal 2015. These decreases were primarily the result of a decrease in shipments to our Connected Smart TV Platforms market, primarily in Germany, as we continue to experience a shift away from legacy products with no corresponding adoption of newer generation Connected Smart TV Platforms products within this region.

**Other regions:** Our net revenue from other regions decreased \$1.8 million, or 99%, for fiscal 2017 compared to fiscal 2016; and decreased \$1.1 million, or 38%, compared to fiscal 2015. The decreases were primarily the result of a decrease in demand for our wired home networking controller chipsets in Brazil.

## **Major customers**

The following table sets forth the major direct customers that accounted for 10% or more of our net revenue:

	<b>Fiscal Years Ended</b>			
	<b>January</b>	<b>January</b>	<b>January</b>	
	<b>28,</b>	<b>30,</b>	<b>31,</b>	
	<b>2017</b>	<b>2016</b>	<b>2015</b>	
Sunjet Components Corps	20%	16	%	*
Silicon Application	13%	*		*
Arris Global	14%	*		*
Benchmark Electronics	*	*	13	%

\*Accounted for less than 10% of our net revenue.

Net revenue from each of the aforementioned major direct customers was primarily generated through the Connected Smart TV Platforms market.



## Gross profit and gross margin

The following table sets forth gross profit and gross margin (in thousands, except percentages):

	Fiscal Years Ended		January		January	
	January	%	January	%	January	
	28,		30,		31,	
	2017	Change	2016	Change	2015	
Gross profit	\$105,979	(6 )%	\$113,160	19 %	\$95,346	
Gross margin %	48.1 %		49.8 %		50.6 %	

Gross profit decreased \$7.2 million, or 6%, for fiscal 2017 compared to fiscal 2016. The decrease was primarily due to lower sales volumes within the Connected Smart TV Platforms and IoT Devices markets. Our gross margin declined 1.7 percentage points for fiscal 2017 primarily due to unfavorable shifts in the product mix within the Connected Smart TV Platforms market.

Our future gross margin could be impacted by our product mix and could be adversely affected by further growth in sales of products that have lower gross margins. Our gross margin may also be impacted by the geographic mix of our revenue and may be adversely affected by increased sales discounts, rebates, royalties, and product pricing attributable to competitive factors. Additionally, our manufacturing-related costs may be negatively impacted by constraints in our supply chain, which in turn could negatively affect gross margin. If any of the preceding factors that in the past have negatively impacted our gross margin arises in the future, our gross margin could decline.

Gross profit increased \$17.8 million, or 19%, for fiscal 2016 compared to fiscal 2015. The increase was primarily due to higher gross profit per unit for chipsets used in Ultra-HD televisions within the Connected Smart TV Platforms market with a related impact of \$31.8 million and increases in sales volumes within the IoT Devices market with a related impact of \$14.5 million. Gross profit was negatively impacted by ASP declines and a decrease in sales volumes for our wired home networking controller chipsets with related impacts of \$16.7 million and \$3.2 million, respectively. We also experienced \$5.8 million of lower sales in license technology, which has very little cost of revenue. The combined effect of these items was a negative impact to our gross margin of 0.8 percentage points for fiscal 2016. During fiscal 2016, we benefitted from the sale of \$0.9 million of inventory that had been previously written-down.

## Research and development expense

Research and development expense consists of compensation and benefits costs including variable compensation expense, development and design costs such as mask, prototyping, testing and subcontracting costs, depreciation of our equipment costs, amortization of our engineering design tools and third-party licensed technology, stock-based compensation expense, and other expenses such as costs for facilities and travel. During certain periods, research and development expense may fluctuate relative to product development phases and project timing. The following table sets forth our research and development expense and the related change (in thousands, except percentages):

	<b>Fiscal Years Ended</b>			<b>Fiscal 2017 vs 2016</b>		<b>Fiscal 2016 vs 2015</b>	
	<b>January 28, 2017</b>	<b>January 30, 2016</b>	<b>January 31, 2015</b>	<b>\$</b>	<b>%</b>	<b>\$</b>	<b>%</b>
				<b>Change</b>	<b>Change</b>	<b>Change</b>	<b>Change</b>
Research and development expense	\$73,993	\$68,784	\$67,482	\$5,209	8 %	\$1,302	2 %

Research and development expense increased \$5.2 million, or 8%, in fiscal 2017 compared to fiscal 2016. The increase was primarily due to an increase of \$3.6 million in our third-party engineering services contributing to certain research and development activities and \$3.1 million in compensation and benefits resulting from our acquisition of Bretelon during the fourth quarter of fiscal 2016. These expenses were partially offset by a decrease of \$1.5 million in depreciation and amortization expense. We had 517 employees in research and development at the end of fiscal 2017 compared to 516 employees at the end of fiscal 2016.

Research and development expense increased \$1.3 million, or 2%, in fiscal 2016 compared to fiscal 2015. The increase was primarily due to increases of \$1.2 million in compensation and benefits. We also hired additional employees during the latter half of fiscal 2016 to contribute to the development of emerging technologies within the Connected Smart TV Platforms market contributing to an average annual increased base of employees of approximately 3.9%. We had 516 employees in research and development at the end of fiscal 2016 compared to 489 employees at the end of fiscal 2015.

### Sales and marketing expense

Sales and marketing expense consists primarily of compensation and benefits costs, including commissions to our direct sales force, stock-based compensation expense, trade shows, travel and entertainment expenses and external commissions. Our sales and marketing expense is summarized as follows (in thousands, except percentages):

	Fiscal Years Ended			Fiscal 2017 vs 2016		Fiscal 2016 vs 2015	
	January 28, 2017	January 30, 2016	January 31, 2015	\$ Change	% Change	\$ Change	% Change
Sales and marketing expense	\$23,300	\$22,877	\$22,290	\$423	2 %	\$587	3 %

Sales and marketing expense increased \$0.4 million, or 2%, in fiscal 2017 compared to fiscal 2016 primarily due to increases of \$0.7 million in marketing programs and other outside services engaged to support the development of emerging technologies within our target markets, partially offset by a reduction of compensation and benefits and other miscellaneous costs. We had 99 employees in sales and marketing at the end of fiscal 2017 compared to 102 employees at the end of fiscal 2016.

Sales and marketing expense increased \$0.6 million, or 3%, in fiscal 2016 compared to fiscal 2015 primarily due to increases of \$0.9 million in marketing programs and tradeshow costs, partially offset by a reduction of compensation and benefits and other miscellaneous costs. We had 102 employees in sales and marketing at the end of both fiscal 2016 and fiscal 2015.

### General and administrative expense

General and administrative expense consists primarily of compensation and benefits costs, stock-based compensation expense, legal, accounting and other professional fees and facilities expenses. Our general and administrative expense is summarized as follows (in thousands, except percentages):

	Fiscal Years Ended		Fiscal 2017 vs 2016		Fiscal 2016 vs 2015	
			%	%		

	<b>January 28,  2017</b>	<b>January 30,  2016</b>	<b>January 31,  2015</b>	<b>\$ Change</b>	<b>Change</b>	<b>\$ Change</b>	<b>Change</b>
General and administrative expense	\$18,860	\$20,862	\$19,641	\$(2,002)	(10	%)	\$1,221 6 %

General and administrative expense decreased \$2.0 million, or 10%, in fiscal 2017 compared to fiscal 2016. The decrease was primarily due to lower professional fees of \$1.7 million associated with legal and other outside services and \$0.3 million in facility related cost. These decreases were partially offset by an increase in compensation and benefits. We had 78 employees in general and administrative at the end of fiscal 2017 compared to 74 employees at the end of fiscal 2016.

General and administrative expense increased \$1.2 million, or 6%, in fiscal 2016 compared to fiscal 2015. The increase was primarily due to higher professional fees of \$1.0 million, associated with legal, audit and tax activities and other outside services. We also experienced an increase in expense related to compensation and benefits of \$0.4 million despite the number of employees remaining largely flat. The increase was primarily the result of one-time incentive compensation activities. These increases were partially offset by decreases in depreciation and amortization expenditures. We had 74 employees in general and administrative at the end of fiscal 2016 compared to 73 employees at the end of fiscal 2015.

### **Restructuring costs**

In fiscal 2013, as a result of significant expansion in our infrastructure and operational activities in connection with purchases and acquisitions that took place between fiscal years 2008 and 2013, and in response to certain redundancies, underperforming operations and delays in programs and product releases, we implemented a restructuring program to realign our global operating expenses with our new business conditions, and to improve efficiency, competitiveness and profitability. The restructuring plan was completed in fiscal 2016. Expenses recognized for restructuring activities impacting our operating expenses are included in "Restructuring costs" in the consolidated statements of operations.

### **Impairment of long-lived assets**

We test long-lived assets, including our purchased intangible assets, for impairment whenever events or changes in circumstances, such as a change in technology, indicate that the carrying value of these assets may not be recoverable. If indicators of impairment exist, we determine whether the carrying value of an asset or asset group is recoverable, based on comparisons to undiscounted expected future cash flows that the assets are expected to generate. If an asset is not recoverable, we record an impairment loss equal to the amount by which the carrying value of the asset exceeds its fair value. We primarily use the income valuation approach to determine the fair value of our long-lived assets and purchased intangible assets. We also periodically review our current assets for other-than-temporary declines in fair-value based on the specific identification method and write-down the carrying value when an other-than temporary decline has occurred.

Our business requires investment in purchased intellectual properties, mask sets and design tools that are technologically advanced but can quickly become significantly underutilized or rendered obsolete by rapid changes in demand in the semiconductor industry. We periodically review our purchased intellectual properties, mask sets and design tools for possible impairment or whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. During fiscal 2017, the results of this review indicated certain purchased IP licenses and mask sets related to the Connected Smart TV Platforms market was impaired; as a result, we recorded impairment charges for purchased IP of \$0.8 million and mask set of \$0.3 million in operating expenses in the accompanying consolidated statements of operations. We recorded a total impairment of \$1.1 million in operating expenses in fiscal 2017.

During fiscal 2016, we identified that certain purchased IP licenses, mask sets and design tools associated with discontinued products primarily related to the Connected Smart TV Platforms market were impaired; as a result, we recorded impairment charges for purchased IP, mask sets and design tools of \$0.4 million, \$1.3 million and less than \$0.1 million, respectively. We recorded a total impairment of \$1.7 million related to these discontinued products in operating expenses in fiscal 2016.

During fiscal 2015, we identified that certain purchased IP licenses, mask sets and design tools associated with discontinued products primarily related to the Connected Smart TV Platforms market were impaired; as a result, we recorded impairment charges for purchased IP, mask sets and design tools of \$0.7 million, \$1.8 million and \$0.3 million, respectively. We recorded a total impairment of \$2.8 million related to these discontinued products in operating expenses in fiscal 2015.

The following table presents the amortization of intangible assets in the accompanying consolidated statements of operations (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January</b>	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>	<b>31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Cost of revenue	\$7,267	\$ 7,586	\$ 7,922
Operating expenses	2,586	1,722	1,418
<b>Total intangible amortization expense</b>	<b>\$9,853</b>	<b>\$ 9,308</b>	<b>\$ 9,340</b>

Intangible assets subject to amortization were as follows as of January 28, 2017 (in thousands, except for years):

	<b>January 28, 2017</b>				<b>Weighted</b>
	<b>Gross</b>	<b>Impairment</b>	<b>Accumulated</b>	<b>and Effect of</b>	<b>Average</b>
	<b>Value</b>		<b>Amortization</b>	<b>Net</b>	<b>Remaining</b>
			<b>Currency</b>	<b>Value</b>	<b>Amortization</b>
			<b>Translation</b>		<b>Period</b>
					<b>(Years)</b>
Acquired intangible assets:					
Developed technology	\$85,427	\$ (24,614 )	\$ (52,854 )	\$7,959	7.4
Customer relationships	54,505	(30,486 )	(20,897 )	3,122	5.8
Trademarks and other	4,078	-	(3,858 )	220	1.9
Purchased IP - amortizing	36,007	(5,516 )	(23,057 )	7,434	2.3
<b>Total amortizing</b>	<b>180,017</b>	<b>(60,616 )</b>	<b>(100,666 )</b>	<b>18,735</b>	<b>5.0</b>
Purchased IP - not yet deployed	16,449	(4,440 )	-	12,009	
<b>Total intangibles</b>	<b>\$196,466</b>	<b>\$ (65,056 )</b>	<b>\$ (100,666 )</b>	<b>\$30,744</b>	

**Stock-based compensation expense**

The following table sets forth stock-based compensation expense that is included in each functional line item in the consolidated statements of operations (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January</b>	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>	<b>31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Cost of revenue	\$294	\$ 227	\$ 190
Research and development	3,452	3,241	3,147
Sales and marketing	1,197	1,151	979
General and administrative	1,562	1,940	1,963
<b>Total stock-based compensation</b>	<b>\$6,505</b>	<b>\$ 6,559</b>	<b>\$ 6,279</b>

The expensing of employee stock-based payment awards will continue to have an adverse impact on our results of operations. As of January 28, 2017, the unrecorded stock-based compensation balance related to stock options and restricted stock units outstanding excluding estimated forfeitures was \$1.5 million and \$9.8 million, respectively, which will be recognized over an estimated weighted average amortization period of 3.0 years. The amortization period is based on the expected vesting term of the awards. The stock-based compensation expense for fiscal 2017 remained flat compared to fiscal 2016.

**Sale of development project**

On March 8, 2013, we entered into an Asset Purchase Agreement with a third party (the “Buyer”) to sell certain development projects (intellectual property) and long-lived assets related to the connectivity technology over coaxial cable market, including the transfer of 21 employees to the Buyer. Under the terms of the Asset Purchase Agreement, if certain technical milestones were met by September 30, 2013 as a result of further development of the transferred technology by the Buyer, we were to be paid an additional \$5.0 million in cash.

The Buyer advised us that it did not believe the milestones had been met by the deadline of September 30, 2013. On May 19, 2014, the parties amended the Asset Purchase Agreement to require the use of Judicial Arbitration and Mediations Services (“JAMS”) for arbitration to settle the dispute between the parties. We pursued our rights to the milestone consideration payment through the alternative dispute resolution provisions set forth in the amendment. On September 5, 2014, the Buyer filed counterclaims in response to our claims arising from the Asset Purchase

Agreement. Arbitration regarding this dispute took place on June 1, 2015. In August 2015, we prevailed on all of the claims we asserted against the Buyer, and all of the Buyer's counterclaims against us were denied. We were awarded \$5.0 million plus reimbursement of reasonable legal and other associated costs and interest. We have recovered \$2.6 million in legal costs, interest and other associated expenses from the Buyer, for a total recovery of \$7.6 million, which was recorded as other income in our consolidated statements of operations in fiscal 2016.

### Impairment of investment

In fiscal 2017, 2016 and 2015, we recorded approximately \$0.9 million, \$0.4 million and \$0.6 million, respectively, in other-than temporary impairment charges from our privately-held investments.

### Interest and other income, net

The following table sets forth our net interest and other income and related percentage change (in thousands, except percentages):

	Fiscal Years Ended			Fiscal 2017 vs 2016		Fiscal 2016 vs 2015	
	January 28, 2017	January 30, 2016	January 31, 2015	\$	%	\$	%
				Change	Change	Change	Change
Interest and other income, net	\$ 539	\$ 794	\$ 1,771	\$(255)	(32 %)	\$(977)	(55 %)

Interest and other income primarily consist of interest income from marketable securities, income from refundable research and development credits, gains or losses on foreign exchange transactions, gains or losses on sales of marketable securities, gains or losses on currency hedging activities and gains or losses on disposals of software, equipment and leasehold improvements. The decrease in interest and other income of \$0.3 million, or 32%, in fiscal 2017 compared to fiscal 2016 was primarily due to lower interest income resulting from a lower average marketable security balance and unfavorable changes in foreign currency fluctuations.

The decrease in interest and other income of \$1.0 million, or 55%, in fiscal 2016 compared to fiscal 2015 was primarily due to \$0.8 million of unfavorable foreign currency fluctuations due to the weakening of the US Dollar over other currencies in which we operate.





## Provision for income taxes

We recorded an income tax provision of \$6.6 million, \$7.2 million and \$5.0 million in fiscal 2017, 2016 and 2015, respectively. The fiscal 2017, 2016 and 2015 effective tax rates were approximately (57%), 98%, and (30%), respectively. Our fiscal 2017 effective tax rate differs from the federal statutory rate of 35% primarily due to changes in US valuation allowances, uncertain tax positions, nondeductible compensation and foreign operations. Our fiscal 2016 effective tax rate differs from the federal statutory rate of 35% primarily due to changes in US valuation allowances, uncertain tax positions, nondeductible compensation, acquisition related adjustments and foreign operations. Our fiscal 2015 effective tax rate differs from the federal statutory rate of 35% primarily due to the tax impact of R&D tax credits, tax audit settlements, nondeductible compensation, and foreign operations as most of our net losses were in a foreign tax jurisdiction with a zero tax rate where no tax benefit could be realized.

## Liquidity and capital resources

The following table sets forth the working capital, cash and cash equivalents and short-term marketable securities as of January 28, 2017 and January 30, 2016 (in thousands):

	<b>January 28, 2017</b>	<b>January 30, 2016</b>
Working capital	\$97,569	\$92,478
Cash and cash equivalents	\$66,425	\$63,790
Short-term marketable securities	4,781	4,805
	<b>\$71,206</b>	<b>\$68,595</b>

We believe our existing balances of cash, cash equivalents and marketable securities will be sufficient to satisfy our working capital needs, capital asset purchases, outstanding commitments and other liquidity requirements associated with existing operations over the next 12 months.

As of January 28, 2017, our principal sources of liquidity consisted of cash and cash equivalents and short-term marketable securities of \$71.2 million. This represents approximately \$1.87 per share of outstanding common stock, which is the same as at January 30, 2016. We expect cash flow to fluctuate in future periods with varying levels of sustainability.

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The following table sets forth the primary net cash inflows and outflows for fiscal 2017, 2016 and 2015 (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January 28,</b>	<b>January 30,</b>	<b>January 31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Net cash provided by (used in):			
Operating activities	\$11,718	\$782	\$15,676
Investing activities	(11,513)	(23,713)	1,795
Financing activities	2,854	3,562	2,083
Effect of foreign exchange rate changes on cash and cash equivalents	(424 )	(343 )	(378 )
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>\$2,635</b>	<b>\$(19,712)</b>	<b>\$19,176</b>

### **Cash flows from operating activities**

Net cash provided by operating activities of \$11.7 million for fiscal 2017 was primarily due to \$11.8 million of net income after non-cash adjustments of \$30.1 million, such as stock-based compensation expense, depreciation and amortization. The increase in cash flow from operating activities during 2017 as compared to fiscal 2016, was primarily due to an increase in the net change in operating assets and liabilities of \$27.6 million. This was partially offset by a net loss of \$18.3 million in fiscal 2017 compared to a net income of \$0.2 million in fiscal 2016. The favorable changes in operating assets and liabilities were primarily driven by lower media processor wafer purchases resulting in a decrease of inventory, a deposit refund from a contract manufacturer for non-fulfillment of inventory and reimbursement of costs related to purchased IP and research and development services. These increases were partially offset by increased cash used in accounts payable due to the timing of payments.

Net cash provided by operating activities of \$0.8 million for fiscal 2016 represents a \$14.9 million decrease from the cash provided by operating activities during fiscal 2015. The change was largely attributable to changes in operating assets and liabilities of \$27.7 million, partially offset by the increase in net income of \$12.8 million after adjusting for non-cash items. We experienced an increase in cash used for inventory in anticipation of seasonal customer demand and expanding opportunities in our target markets. The change in accounts receivable from fiscal 2015 was primarily the result of increased revenue as well as the timing of product shipments and collections. Cash used in accrued liabilities, compensation and related benefits was primarily the result of timing of payments and higher rebates payments. Cash used in other non-current assets was primarily the result of larger commitments for purchases of IP for use in future product offerings. Increases in cash used in accounts payable were primarily the result of timing of payments and the assumption and subsequent payments of liabilities from our acquisition of Bretelon in the fourth quarter of fiscal 2016. The change in other long-term liabilities from fiscal 2015 primarily resulted from larger commitments for purchases of IP for use in future product offerings. The increase in cash used in prepaid expenses and other current assets was primarily the result of increases in tax prepayments.

Cash flows from our operating activities will continue to fluctuate based upon our ability to grow net revenues while reducing our costs and managing the timing of payments to us from customers and to vendors from us, the timing of inventory purchases and subsequent manufacture and sale of our products.

### **Cash flows from investing activities**

Net cash used in investing activities was \$11.5 million for fiscal 2017, which was primarily due to purchases of IP and software, equipment and leasehold improvements of \$8.3 million and \$10.7 million, respectively, partially offset by proceeds from the maturities of marketable securities and reimbursement of costs related to purchased IP of \$3.6 million and \$3.0 million, respectively. Purchases of intangible and tangible property were primarily to support the development and advancement of emerging technologies within our target markets.

Net cash used in investing activities of \$11.5 million for fiscal 2017 represents a \$12.2 million decrease from the amount of cash used in investing activities from fiscal 2016. The decrease was primarily due to net cash paid in connection with our acquisition of Bretelon of \$19.3 million, partially offset by proceeds from our sale of a development project of \$7.6 million during fiscal 2016 with no corresponding amounts in fiscal 2017.

Net cash used in investing activities of \$23.7 million for fiscal 2016 represents a \$25.5 million decrease from the amount of cash provided by investing activities from fiscal 2015. The decrease was primarily due to our acquisition of Bretelon in the fourth quarter of fiscal 2016 for a total cash consideration of \$19.3 million. We received proceeds from the sale and maturities of marketable securities of \$24.7 million during fiscal 2016 as compared to \$15.6 million of sales or maturities during fiscal 2015. Conversely, we purchased similar securities of \$22.6 million during fiscal 2016 as compared to \$3.1 million during fiscal 2015. Our proceeds from our sale of a development project and privately-held investment of \$7.6 million and \$0.5 million, respectively, partially offset the decrease from cash provided in fiscal 2015.

### **Cash flows from financing activities**

Net cash provided by financing activities was \$2.9 million for fiscal 2017, which was due to the proceeds from the exercise of employee stock options and stock purchase rights, partially offset by employee payroll taxes paid related to net share settlement of restricted stock units. The decrease of \$0.7 million from the corresponding period in fiscal 2016 was primarily the result of lower exercise activity related to stock options and higher employee payroll taxes paid related to net share settlement of restricted stock units.

Net cash provided by financing activities was \$3.6 million for fiscal 2016, which was due to the net proceeds from the exercise of employee stock options and employee stock purchases. The increase of \$1.5 million from fiscal 2015 was primarily the result of higher exercise activity related to stock options in the current year.

As of January 28, 2017, \$53.3 million of the \$71.2 million of our cash, cash equivalents and marketable securities was held by our foreign subsidiaries. If these funds are needed for our operations in the U.S., we would be required to accrue and pay U.S. taxes to repatriate these funds. However, our intent is to permanently reinvest these funds outside of the U.S. and our current plans do not demonstrate a need to repatriate them to fund our U.S. operations. We are not aware of any trends, demands or uncertainties as a result of this policy that are reasonably likely to have a material effect on our business, as a whole or that may be relevant to our financial flexibility.

Our marketable securities primarily include corporate bonds, fixed income mutual funds and money market funds. We monitor all of our marketable securities for impairment and if these securities are reported to have had a decline in fair value, we may need to use significant judgment to identify events or circumstances that would likely have a significant adverse effect on the future value of each investment including: (i) the nature of the investment; (ii) the cause and duration of any impairment; (iii) the financial condition and near term prospects of the issuer; (iv) for securities with a reported decline in fair value, our ability to hold the security for a period of time sufficient to allow for any anticipated recovery of fair value; (v) the extent to which fair value may differ from cost; and (vi) a comparison of the income generated by the securities compared to alternative investments. If a decline in the fair value of our marketable securities is judged to be other-than-temporary, we would recognize an impairment charge.

### **Off-Balance Sheet Arrangements**

As of January 28, 2017, we did not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

## Contractual obligations and commitments

We generally do not have guaranteed price or quantity commitments from any of our suppliers. Additionally, we generally acquire products for sale to our customers based on purchase orders received as well as forecasts from such customers. Purchase orders with delivery dates greater than twelve weeks are typically cancelable without penalty to our customers. We currently place non-cancelable orders to purchase semiconductor wafers, other materials and finished goods from our suppliers on an eight to twelve week lead-time basis. For further discussion, refer to Note 10, "Commitments and contingencies" of the Notes to consolidated financial statements of this Form 10-K included in Item 8 of this report.

The following table sets forth the amounts of payments due under specified contractual obligations, excluding liabilities related to uncertain tax positions as we are unable to reasonably estimate the ultimate amount or time of settlement as of January 28, 2017 (in thousands):

	Payments due by Period				Total
	Fiscal 2018	Fiscal 2019 - 2020	Fiscal 2021 - 2022	Thereafter	
Operating leases	\$3,803	\$2,992	\$1,173	\$ -	\$7,968
Third-party licensed IP	4,845	1,500	-	-	6,345
Design tools	3,226	4,090	-	-	7,316
Non-cancelable purchase obligations	16,074	-	-	-	16,074
<b>Total contractual obligations</b>	<b>\$27,948</b>	<b>\$8,582</b>	<b>\$1,173</b>	<b>\$ -</b>	<b>\$37,703</b>

## Privately-held investments

We have investments in privately-held companies, which we review annually to determine if they should be accounted for as variable interest entities. For the year ended January 28, 2017, we evaluated our investments in these privately-held companies and concluded that we are not the primary beneficiary of any variable interest from investment entities. As a result, we account for these investments on a cost basis and do not consolidate the activity of these investee entities. Certain events can require a reassessment of our investments in privately-held companies to determine if they meet the criteria for variable interest entities and to determine which stakeholders in such entities will be the primary beneficiary. In the event of a reassessment, we may be required to make additional disclosures or consolidate these entities in future periods.

## Recent accounting pronouncements

See “Recent accounting pronouncements,” under Note 1, “Organization and summary of significant accounting policies” of the Notes to consolidated financial statements of this Form 10-K included in Item 8 of this report.



## ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The following discussion about our market risk disclosures involves forward-looking statements. Actual results could differ materially from those projected in the forward-looking statements. We face exposure to market risk from adverse movements in interest rates and foreign currency exchange rates, which could impact our operations and financial condition. In the past, to mitigate some of the foreign currency exchange rate risk, we utilized derivative financial instruments to hedge certain foreign currency exposures. However, we discontinued this practice in fiscal 2015 as we determined the balance sheet exposure to be relatively low based on the factors described below.

**Interest rate sensitivity:** As of January 28, 2017 and January 30, 2016, we held approximately \$71.2 million and \$72.1 million, respectively, of cash, cash equivalents and short-term and long-term marketable securities. If short-term interest rates were to decrease by 10%, the decreased interest income associated with these cash, cash equivalents and marketable securities would not have a significant impact on our net loss and cash flows.

**Foreign currency exchange rate sensitivity:** We transact our revenue in U.S. dollars. The U.S. dollar is our reporting currency and is our functional currency except for our subsidiaries in China, Denmark, Japan, Taiwan, South Korea, Vietnam, France, Germany, and The Netherlands where the Chinese Yuan, Danish krone, Japanese yen, Taiwanese dollar, Korean won, Vietnamese dong and the Euro are the functional currencies, respectively. Additionally, significant portions of our Israel subsidiary's expenses are payroll-related and are denominated in Israeli shekels. This foreign currency exposure gives rise to market risk associated with exchange rate movements of the U.S. dollar against the Israeli shekel. To the extent the U.S. dollar weakens against the Israeli shekel, our Israeli subsidiary will experience a negative impact on its results of operations.

As of January 28, 2017 and January 30, 2016, we did not have any foreign exchange forward contracts to hedge certain balance sheet exposures and inter-company balances against future movements in foreign exchange rates.

We maintain certain cash balances denominated in the Chinese Yuan, Danish krone, Euro, Japanese yen, Hong Kong dollar, Israeli shekel, Singapore dollar, Taiwanese dollar, Korean won and Vietnamese dong. If foreign exchange rates were to weaken against the U.S. dollar immediately and uniformly by 10% from the exchange rates at January 28, 2017 and January 30, 2016, the fair value of these foreign currency amounts would decline and we would record a charge of approximately \$0.8 million and \$0.6 million, respectively.

**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders

Sigma Designs, Inc.

Fremont, CA

We have audited the accompanying consolidated balance sheets of Sigma Designs, Inc. and subsidiaries (the “Company”) as of January 28, 2017 and January 30, 2016, and the related consolidated statements of operations, comprehensive loss, shareholders’ equity, and cash flows for each of the fiscal years in the three-year period ended January 28, 2017. We also have audited the Company’s internal control over financial reporting as of January 28, 2017, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Our audits also included the financial statement schedule listed in the Index at Part IV, Item 15. The Company's management is responsible for these consolidated financial statements and schedule, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report on Internal Control over Financial Reporting, appearing under Item 9A. Our responsibility is to express an opinion on these consolidated financial statements and schedule and an opinion on the Company’s internal control over financial reporting based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance

with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of January 28, 2017 and January 30, 2016, and the results of its operations and its cash flows for each of the fiscal years in the three-year period ended January 28, 2017 in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the related financial statement schedule for each of the fiscal years in the three-year period ended January 28, 2017, when considered in relation to the consolidated financial statements as a whole, presents fairly in all material respects the information set forth therein. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of January 28, 2017, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

/s/ ARMANINO LLP

San Ramon, California

March 30, 2017

**SIGMA DESIGNS, INC.****CONSOLIDATED BALANCE SHEETS****(In thousands, except share and per share data)**

	<b>January 28, 2017</b>	<b>January 30, 2016</b>
<b>ASSETS</b>		
<b>Current assets</b>		
Cash and cash equivalents	\$66,425	\$63,790
Short-term marketable securities	4,781	4,805
Restricted cash	303	900
Accounts receivable, net of allowances of \$1,630 as of January 28, 2017 and \$2,002 as of January 30, 2016	35,860	30,362
Inventory	18,147	26,709
Prepaid expenses and other current assets	8,017	14,085
<b>Total current assets</b>	<b>133,533</b>	<b>140,651</b>
Long-term marketable securities	-	3,527
Software, equipment and leasehold improvements, net	18,523	14,086
Intangible assets, net	30,744	37,050
Goodwill	10,594	11,068
Deferred tax assets	625	911
Long-term investments	2,000	2,884
Other non-current assets	5,755	6,492
<b>Total assets</b>	<b>\$201,774</b>	<b>\$216,669</b>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
<b>Current liabilities</b>		
Accounts payable	\$14,230	\$26,181
Accrued compensation and related benefits	8,127	7,360
Accrued liabilities	13,607	14,632
<b>Total current liabilities</b>	<b>35,964</b>	<b>48,173</b>
Income taxes payable	15,752	11,351
Deferred tax liabilities	287	317
Other long-term liabilities	6,225	4,023
<b>Total liabilities</b>	<b>58,228</b>	<b>63,864</b>
Commitments and contingencies (Note 10)		
<b>Shareholders' equity</b>		
Preferred stock; no par value, 2,000,000 shares authorized; none issued and outstanding	-	-

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Common stock and additional paid-in capital; no par value; 100,000,000 shares authorized; 42,806,279 issued and 38,130,530 outstanding as of January 28, 2017 and 41,424,377 issued and 36,748,628 outstanding as of January 30, 2016	513,168	503,809
Treasury stock, at cost, 4,675,749 shares as of January 28, 2017 and January 30, 2016	(88,336 )	(88,336 )
Accumulated other comprehensive loss	(2,178 )	(1,875 )
Accumulated deficit	(279,108)	(260,793)
<b>Total shareholders' equity</b>	143,546	152,805
<b>Total liabilities and shareholders' equity</b>	\$201,774	\$216,669

*See the accompanying Notes to Consolidated Financial Statements*

**SIGMA DESIGNS, INC.****CONSOLIDATED STATEMENTS OF OPERATIONS**

(In thousands, except per share data)

	<b>Fiscal Years Ended</b>		
	<b>January 28,</b>	<b>January 30,</b>	<b>January 31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
<b>Net revenue</b>	\$220,544	\$227,250	\$188,313
Cost of revenue	114,565	114,090	92,967
<b>Gross profit</b>	105,979	113,160	95,346
<b>Operating expenses</b>			
Research and development	73,993	68,784	67,482
Sales and marketing	23,300	22,877	22,290
General and administrative	18,860	20,862	19,641
Restructuring costs	-	9	999
Impairment of IP, mask sets and design tools	1,148	1,783	2,811
Total operating expenses	117,301	114,315	113,223
<b>Loss from operations</b>	(11,322 )	(1,155 )	(17,877 )
Gain on sale of development project	-	7,551	-
Impairment of privately-held investments, net of gain on sale	(885 )	159	(602 )
Interest and other income, net	539	794	1,771
<b>(Loss) income before income taxes</b>	(11,668 )	7,349	(16,708 )
Provision for income taxes	6,647	7,191	4,993
<b>Net (loss) income</b>	\$(18,315 )	\$158	\$(21,701 )
<b>Net (loss) income per common share:</b>			
Basic	\$(0.49 )	\$0.00	\$(0.63 )
Diluted	\$(0.49 )	\$0.00	\$(0.63 )
<b>Shares used in computing net (loss) income per share:</b>			
Basic	37,429	35,890	34,693
Diluted	37,429	36,669	34,693

**SIGMA DESIGNS, INC.****CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS**

(In thousands)

	<b>Fiscal Years Ended</b>		
	<b>January 28,</b>	<b>January 30,</b>	<b>January 31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Net (loss) income	\$(18,315)	\$ 158	\$(21,701)
Other comprehensive loss:			
Change in currency translation adjustments, net of tax	(336 )	(583 )	(1,586 )
Change in unrealized gains (losses) on marketable securities, net of tax	33	(181 )	(176 )
Other comprehensive loss	(303 )	(764 )	(1,762 )
<b>Comprehensive loss</b>	<b>\$(18,618)</b>	<b>\$ (606 )</b>	<b>\$(23,463)</b>

*See the accompanying Notes to Consolidated Financial Statements*



## SIGMA DESIGNS, INC.

## CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(In thousands, except shares)

	Common Stock		Treasury Stock		Accumulated Other Comprehensive Income			Total Shareholders' Equity
	Shares	Amount	Shares	Amount	(Loss) Gain	Cumulative Translation Adjustment	Accumulated Deficit	
<b>Balance, February 1, 2014</b>	39,083,961	\$485,188	(4,659,143)	\$(88,198)	\$149	\$ 502	\$(239,250 )	\$ 158,391
Unrealized loss on marketable securities	-	-	-	-	(176)	-	-	(176 )
Currency translation adjustments	-	-	-	-	-	(1,586 )	-	(1,586 )
Stock-based compensation expense	-	6,279	-	-	-	-	-	6,279
Net share settlement of equity awards	-	(231 )	-	-	-	-	-	(231 )
Net proceeds from common stock issued under share plans	889,728	2,314	-	-	-	-	-	2,314
Net loss	-	-	-	-	-	-	(21,701 )	(21,701 )
<b>Balance, January 31, 2015</b>	39,973,689	493,550	(4,659,143)	(88,198)	(27 )	(1,084 )	(260,951 )	143,290
Unrealized loss on marketable securities	-	-	-	-	(181)	-	-	(181 )
Currency translation adjustments	-	-	-	-	-	(583 )	-	(583 )

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Stock-based compensation expense	-	6,559	-	-	-	-	-	6,559
Net share settlement of equity awards	-	(81 )	(16,606 )	(138 )	-	-	-	(219 )
Net proceeds from common stock issued under share plans	1,450,688	3,781	-	-	-	-	-	3,781
Net income	-	-	-	-	-	-	158	158
<b>Balance, January 30, 2016</b>	41,424,377	503,809	(4,675,749)	(88,336)	(208)	(1,667 )	(260,793 )	152,805
Unrealized gain on marketable securities	-	-	-	-	33	-	-	33
Currency translation adjustments	-	-	-	-	-	(336 )	-	(336 )
Stock-based compensation expense	-	6,505	-	-	-	-	-	6,505
Net share settlement of equity awards	-	(635 )	-	-	-	-	-	(635 )
Net proceeds from common stock issued under share plans	1,381,902	3,489	-	-	-	-	-	3,489
Net loss	-	-	-	-	-	-	(18,315 )	(18,315 )
<b>Balance, January 28, 2017</b>	42,806,279	\$513,168	(4,675,749)	\$(88,336)	\$(175)	\$(2,003 )	\$(279,108 )	\$ 143,546

See the accompanying Notes to Consolidated Financial Statements

**SIGMA DESIGNS, INC.****CONSOLIDATED STATEMENTS OF CASH FLOWS****(In thousands)**

	<b>Fiscal Years Ended</b>		
	<b>January 28,  2017</b>	<b>January 30,  2016</b>	<b>January 31,  2015</b>
<b>Cash flows from operating activities</b>			
Net (loss) income	\$(18,315)	\$158	\$(21,701)
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Depreciation and amortization	20,739	21,972	21,708
Stock-based compensation	6,505	6,559	6,279
Provision for excess and obsolete inventory	2,004	3,157	4,267
(Recovery of) Provision for sales returns, discounts, and doubtful accounts	(372 )	500	1,202
Deferred income taxes	258	2,355	342
Gain on sale of development project	-	(7,551 )	-
Impairment of intangibles, IP, mask sets, and design tools	1,148	1,783	2,811
Impairment (gain on sale) of privately-held investments	885	(136 )	602
Other non-cash activities	(1,019 )	(277 )	239
Changes in operating assets and liabilities:			
Accounts receivable	(5,126 )	(4,447 )	30
Inventory	6,558	(9,420 )	(4,310 )
Prepaid expenses and other current assets	4,365	(4,851 )	(1,288 )
Other non-current assets	(302 )	(4,868 )	3,124
Accounts payable	(12,046)	392	3,672
Accrued liabilities, compensation and related benefits	2,428	(5,294 )	6,750
Income taxes payable	4,190	757	(2,134 )
Other long-term liabilities	(182 )	(7 )	(5,917 )
<b>Net cash provided by operating activities</b>	<b>11,718</b>	<b>782</b>	<b>15,676</b>
<b>Cash flows from investing activities</b>			
Restricted cash	597	(500 )	1,375
Purchases of marketable securities	-	(22,622)	(3,079 )
Sales and maturities of marketable securities	3,584	24,705	15,603
Purchases of software, equipment and leasehold improvements	(10,708)	(6,862 )	(8,722 )
Purchases of IP	(8,283 )	(7,193 )	(3,612 )
Reimbursement of costs related to purchased IP	3,008	-	-
Proceeds from sale of development project, net of transaction fees	-	7,551	-
Proceeds from sale of privately-held investment	-	518	-
Net cash received (paid) in connection with acquisition	289	(19,310)	-
Repayment of note receivable	-	-	230

<b>Net cash (used in) provided by investing activities</b>	(11,513)	(23,713)	1,795
<b>Cash flows from financing activities</b>			
Net proceeds from exercise of employee stock options and stock purchase rights	3,489	3,781	2,314
Net share settlement of equity awards issued to employees	(635 )	(219 )	(231 )
<b>Net cash provided by financing activities</b>	2,854	3,562	2,083
Effect of foreign exchange rate changes on cash and cash equivalents	(424 )	(343 )	(378 )
Net increase (decrease) in cash and cash equivalents	2,635	(19,712)	19,176
<b>Cash and cash equivalents, beginning of period</b>	63,790	83,502	64,326
<b>Cash and cash equivalents, end of period</b>	\$66,425	\$63,790	\$83,502
<b>Supplemental disclosure of cash flow information:</b>			
Cash paid for income taxes	\$2,516	\$7,004	\$6,085

*See the accompanying Notes to Consolidated Financial Statements*

**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**1. Organization and summary of significant accounting policies**

**Organization and nature of operations:** Sigma Designs, Inc. (referred to collectively in these consolidated financial statements as “Sigma,” “we,” “our,” “the Company” and “us”) is a provider of intelligent platforms for use in a variety of home entertainment and home control appliances. We sell our products into two primary target markets which are the Connected Smart TV Platforms and Internet of Things (“IoT”) Devices markets. Our integrated system-on-chip (“SoC”) solutions serve as the foundation for some of the world’s leading consumer products, including televisions, media connectivity, smart home, and mobile IoT products. A majority of our primary products are semiconductors that are targeted toward end-product manufacturers, Original Equipment Manufacturers, or OEMs, and Original Design Manufacturers, or ODMs. We derive a portion of our revenue from licensing and other activities, including licensing of our software development kits, and engineering support services for hardware and software.

**Basis of presentation:** The consolidated financial statements include the accounts of Sigma Designs, Inc. and its wholly-owned subsidiaries. All significant intercompany balances and transactions have been eliminated. In November 2015, we completed our acquisition of Bretelon, Inc. (“Bretelon”). The consolidated financial statements include the results of operations of Bretelon commencing as of the acquisition date.

**Accounting period:** We follow a 52 or 53-week fiscal reporting calendar ending on the Saturday closest to January 31 each year. Our most recent fiscal year, fiscal 2017, ended on January 28, 2017, included 52 weeks. The fiscal years 2016 and 2015, ended January 30, 2016 and January 31, 2015 each included 52 weeks. Our next fiscal year, ending on February 3, 2018, will include 53 weeks.

**Use of estimates in the preparation of consolidated financial statements:** The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”). The preparation of the consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the reporting period. The primary areas that require significant estimates and judgments by management include, but are not limited to, revenue recognition, allowances for doubtful accounts, sales returns, warranty obligations, inventory valuation, stock-based compensation expense, purchased intangible asset valuations, strategic investments, deferred income tax asset valuation allowances, uncertain tax positions, tax contingencies, restructuring costs, litigation and other loss contingencies. Our estimates and related judgments and assumptions are continually evaluated based on historical experience and various other factors that we believe to be reasonable under the circumstances, however, actual results could differ from those estimates, and such differences may be material to our consolidated financial statements.

**Restructuring charges:** Our restructuring charges include primarily payments to employees for severance, asset impairment charges, termination fees associated with leases and other contracts and other costs related to the closure of facilities. Accruals are recorded when management has approved a plan to restructure operations and a liability has been incurred. The restructuring accruals are based upon management estimates at the time they are recorded. These estimates can change depending upon changes in facts and circumstances subsequent to the date the original liability was recorded. During fiscal 2016 and 2015, we recorded restructuring charges of less than \$0.1 million and \$1.1 million, respectively. We incurred no restructuring charges in fiscal 2017.

**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**Fair value of financial instruments:** We measure and disclose certain financial assets and liabilities at fair value defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. ASC Topic 820 also establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The standard describes three levels of inputs that may be used to measure fair value:

- Level 1 – Quoted prices in active markets for identical assets or liabilities
- Level 2 – Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices 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.
- Level 3 – Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

For certain of our assets and liabilities, including cash and cash equivalents, accounts receivable, accounts payable and other current liabilities, the carrying amounts approximate their fair value due to the relatively short maturity of these items. Marketable securities consist of available-for-sale securities that are reported at fair value with the related unrealized gains and losses included in accumulated other comprehensive income (loss), a component of shareholders' equity. The fair value of cash equivalents and certain marketable securities is determined based on "Level 1" inputs, which consist of quoted prices in active markets for identical assets.

In accordance with the fair value accounting requirements, companies may choose to measure eligible financial instruments and certain other items at fair value. We have not elected the fair value option for any eligible financial instruments.

**Derivative financial instruments:** We are exposed to certain foreign currency risk. Prior to fiscal 2015, we used foreign exchange contracts to hedge certain existing and anticipated foreign currency denominated transactions in the normal course of business and may do so in the future. We account for our financial derivatives as either assets or liabilities and carry them at fair value. We do not use derivative financial instruments for speculative or trading purposes, nor do we hold or issue leveraged derivative financial instruments. Unrealized gains and losses arising from the effective portion of foreign exchange contracts that are designated as cash flow hedging instruments are recorded in accumulated other comprehensive income (loss) and are subsequently reclassified into earnings in the same period or periods during which the underlying transactions affect earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. Gains and losses arising from changes in the fair values of foreign exchange contracts that are not

designated as hedging instruments are recognized in current earnings.

**Cash and cash equivalents:** All highly liquid investments with remaining maturity date at the end of each reporting period of 90 days or less are classified as cash equivalents.

**Short and long-term marketable securities:** Short-term marketable securities represent highly liquid investments with a remaining maturity date at the end of each reporting period of greater than 90 days but less than one year and are stated at fair value. Long-term marketable securities represent securities with contractual maturities greater than one year from the date of purchase. We classify our marketable securities as available-for-sale because the sale of such securities may be required prior to maturity. Management determines the appropriate classification of its investments at the time of purchase and reevaluates the designations at each balance sheet date.

The difference between amortized cost (cost adjusted for amortization of premiums and accretion of discounts, which is recognized as an adjustment to interest income) and fair value, representing unrealized holding gains or losses, are recorded separately as a component of accumulated other comprehensive income (loss) within shareholders' equity. Any gains and losses on the sale of marketable securities are determined based on the specific identification method.

We monitor all of our marketable securities for impairment and if these securities are reported to have a decline in fair value, we use significant judgment to identify events or circumstances that would likely have a significant adverse effect on the future value of each investment including: (i) the nature of the investment; (ii) the cause and duration of any impairment; (iii) the financial condition and future prospects of the issuer; (iv) for securities with a reported decline in fair value, our ability to hold the security for a period of time sufficient to allow for any anticipated recovery of fair value; (v) the extent to which fair value may differ from cost; and (vi) a comparison of the income generated by the securities compared to alternative investments. We recognize an impairment charge if a decline in the fair value of our marketable securities is judged to be other-than-temporary. No such impairment charges were recorded in fiscal 2017, 2016 or 2015.



**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**Accounts receivable and allowances:** We defer recognition of revenue and the related receivable when we cannot estimate whether collectability is reasonably assured at the time products and services are delivered to our customers. We also provide allowances for bad debt and sales returns. In establishing the allowance for bad debt, in cases where we are aware of circumstances that may impair a specific customer's ability to meet its financial obligations subsequent to the original sale, we will record an allowance against amounts due, and thereby reduce the net recognized receivable to the amount we reasonably believe will be collected. For all other customers, we recognize allowances for doubtful accounts based on the length of time the receivables are past due, industry and geographic concentrations, the current business environment and our historical experience.

In establishing the allowance for sales returns, we make estimates of potential future returns of products for which revenue has been recognized in the current period, including analyzing historical returns, current economic trends and changes in customer demand and acceptance of our products. Our allowance for sales returns, discounts and bad debt was \$1.6 million and \$2.0 million at January 28, 2017 and January 30, 2016, respectively. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments, or future product returns increased, additional allowances may be required.

**Inventory:** Inventory consists of wafers and other purchased materials, work in process and finished goods and is stated at the lower of standard cost, which approximates actual cost on a first-in, first-out basis, or market value. We evaluate our ending inventory for excess quantities and obsolescence on a quarterly basis. This evaluation includes analysis of historical and estimated future unit sales by product as well as product purchase commitments that are not cancelable. We develop our demand forecasts based, in part, on discussions with our customers about their forecasted supply needs. However, our customers generally only provide us with firm purchase commitments for the month and quarter and not our entire forecasted period. Additionally, our sales and marketing personnel provide estimates of future sales to prospective customers based on actual and expected design wins. A provision is recorded for inventory in excess of estimated future demand.

We write-off inventory that is obsolete. Obsolescence is determined from several factors, including competitiveness of product offerings, market conditions and product life cycles. Provisions for excess and obsolete inventory are charged to cost of revenue. At the time of the loss recognition, a new, lower-cost basis for that inventory is established and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis. If this lower-cost inventory is subsequently sold, we will realize higher gross margins for those products.

Inventory write-downs inherently involve assumptions and judgments as to amount of future sales and selling prices. As a result of our inventory valuation reviews, we charged provisions for excess and obsolete inventory of

approximately \$2.0 million, \$3.2 million and \$4.3 million to cost of revenue for fiscal 2017, 2016 and 2015, respectively. We have sold through \$0.3 million, \$0.9 million and \$0.6 million of inventory that we had previously recorded as excess and obsolete in fiscal 2017, 2016 and 2015, respectively. Although we believe that the assumptions we use in estimating inventory write-downs are reasonable, significant future changes in these assumptions could produce a significantly different result. There can be no assurances that future events and changing market conditions will not result in significant inventory write-downs.

**Warranty:** Our products typically carry a one-year limited warranty that products will be free from defects in materials and workmanship. Warranty cost is estimated at the time revenue is recognized, based on historical activity and additionally for any specific known product warranty issues. Accrued warranty cost includes hardware repair and/or replacement and software support costs and is included in accrued liabilities in the consolidated balance sheets. Although we engage in extensive product quality programs and processes, our warranty obligation has been and may in the future be affected by product failure rates, product recalls, repair or replacement costs and additional development costs incurred in correcting any product failure. Should actual costs differ from our initial estimates, we record the difference in the period they are identified. Actual claims are charged against the warranty reserve.

**Software, equipment and leasehold improvements:** Software, equipment and leasehold improvements are stated at cost. Depreciation and amortization for software, equipment and leasehold improvements is computed using the straight-line method based on the useful lives of the assets (one to five years) or the remaining lease term if shorter. Any allowance for leasehold improvements received from the landlord for improvements to our facilities is amortized using the straight-line method over the lesser of the remaining lease term or the useful life of the leasehold improvements. Repairs and maintenance costs are expensed as incurred.

**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**Business combinations:** The purchase accounting method applied to business combinations requires us to allocate the purchase price of acquired companies to the identifiable tangible and intangible assets acquired and liabilities assumed, based on their estimated fair values. Such valuations require us to make significant estimates and assumptions, especially with respect to intangible assets. The significant purchased intangible assets recorded by us include developed technology, customer relationships, purchased IP, non-compete agreements and trademarks. Critical estimates and assumptions used in valuing these assets include but are not limited to: future expected cash flows from acquired products, customer relationships and acquired developed technologies and patents; assumptions regarding brand awareness and market position, and assumptions about the period of time the brand will continue to be used in our product portfolio; and assumptions about discount rates. The estimated fair values are based upon assumptions that we believe to be reasonable but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates.

**Intangible and other long-lived assets:** The amounts and useful lives assigned to intangible and other long-lived assets acquired, other than goodwill, impact the amount and timing of future amortization. Intangible assets include those acquired through business combinations and intellectual property that we purchase for incorporation into our product designs. We begin amortizing such intellectual property at the time that we begin shipment of the associated products into which it is incorporated. We amortize the intellectual property over the estimated useful life of the associated products, generally two to three years.

Goodwill is recorded as the difference, if any, between the aggregate consideration paid for an acquisition and the fair value of the net tangible and intangible assets acquired. Other intangible assets primarily represent purchased developed technology, customer relationships, purchased IP, non-compete agreements and trademarks. We currently amortize our intangible assets with definitive lives over periods ranging from three to ten years using a method that reflects the pattern in which the economic benefits of the intangible assets are consumed or otherwise used or, if that pattern cannot be reliably determined, using a straight-line amortization method.

**Impairment of goodwill and other long-lived assets:** We test long-lived assets, including purchased intangible assets, for impairment whenever events or changes in circumstances, such as a change in technology, indicate that the carrying value of these assets may not be recoverable. If indicators of impairment exist, we determine whether the carrying value of an asset or asset group is recoverable, based on comparisons to undiscounted expected future cash flows that the assets are expected to generate. If an asset is not recoverable, we record an impairment loss equal to the amount by which the carrying value of the asset exceeds its fair value. We primarily use the income valuation approach to determine the fair value of our long-lived assets and purchased intangible assets.

We evaluate goodwill on an annual basis as of the last day of our fiscal year and whenever events or changes in circumstances indicate the carrying value may not be recoverable. We first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If we conclude that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, we conduct a two-step quantitative goodwill impairment test. The first step requires identifying the reporting units and comparing the fair value of each reporting unit to its net book value, including goodwill. We have identified that we operate as one reporting unit and the fair value of our operating unit is determined to be equal to our market capitalization as determined through quoted market prices, adjusted for a reasonable control premium. We estimate the control premium based on a review of acquisitions of comparable semiconductor companies that were completed during the last four years. If the carrying amount of a reporting unit exceeds the reporting unit's fair value, we perform the second step of the goodwill impairment test. The second step of the goodwill impairment test involves comparing the implied fair value of the affected reporting unit's goodwill with the carrying value of that goodwill. The amount by which the carrying value of the goodwill exceeds its implied fair value, if any, is recognized as an impairment loss.

Determining the fair value of a reporting unit is judgmental in nature and involves the use of significant estimates and assumptions. These estimates and assumptions include forecasts of revenue and operating margins used to calculate projected future cash flows, risk-adjusted discount rates, future economic and market conditions and a determination of appropriate market comparables. We base our fair value estimates on assumptions we believe to be reasonable at that time, however, actual future results may differ from those estimates. Future competitive, market and economic conditions could negatively impact key assumptions including our market capitalization, actual control premiums or the carrying value of our net assets, which could require us to realize an additional impairment.

**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**Long-term investments:** Investments in private equity securities of less than 20% owned companies are accounted for using the cost method unless we can exercise significant influence or the investee is economically dependent upon us, in which case the equity method is used. We evaluate our long-term investments for impairment annually or whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable.

**Revenue recognition:** We derive our revenue primarily from product sales which comprised approximately 97%, 99% and 97% of total net revenue during fiscal 2017, 2016 and 2015, respectively. Our products, which we refer to as chipsets, consist of highly integrated chips and embedded software that enables real-time processing of digital video and audio content; and in the case of our IoT Devices, establishes a mesh network protocol that provides an interoperable platform for automation and monitoring solutions, all of which we refer to as embedded software. We do not deliver software as a separate product in connection with product sales. We recognize revenue for product sales when persuasive evidence of an arrangement exists, delivery has occurred, the fee is fixed or determinable and collectability is reasonably assured. These criteria are usually met at the time of product shipment. We record reductions of revenue for estimated product returns and pricing adjustments, such as rebates, in the same period that the related revenue is recorded. The amount of these reductions is based on historical sales returns, analysis of credit memo data, specific criteria included in the agreements, and other factors known at the time. We accrue 100% of potential returns at the time of sale when there is not sufficient historical sales data and recognize revenue when the right of return expires. We also accrue 100% of potential rebates at the time of sale and do not apply a breakage factor. We reverse the accrual for unclaimed rebate amounts as specific rebate programs contractually end and when we believe unclaimed rebates are no longer subject to payment and will not be paid. See Note 6 for a summary of our rebate activity.

On occasion, we derive revenue from the license of our internally developed intellectual property ("IP"). IP licensing agreements that we enter into generally provide licensees the right to incorporate our IP components in their products with terms and conditions that vary by licensee. Our license fee arrangements generally include multiple deliverables and we are required to determine whether there is more than one unit of accounting. To the extent that the deliverables are separable into multiple units of accounting, we allocate the total fee on such arrangements to the individual units of accounting using management's best estimate of selling price ("ESP"), if third party evidence ("TPE") or vendor specific objective evidence ("VSOE") does not exist. We defer revenue recognition for consideration that is contingent upon future performance or other contractual terms.

Our process for determining our ESP for deliverables without VSOE or TPE considers multiple factors that may vary depending upon the unique facts and circumstances related to each deliverable. The key factors that we consider in developing the ESPs include the nature and complexity of the licensed technologies, our cost to provide the deliverables, the availability of substitute technologies in the marketplace and our historical pricing practices. We then recognize revenue for each unit of accounting depending on the nature of the deliverable(s) comprising the unit of

accounting in accordance with the revenue recognition criteria mentioned above. Fees under these agreements generally include (a) license fees relating to our IP, (b) engineering services, and (c) support services. Historically, each of these elements has standalone value and therefore each are treated as separate units of accounting. Any future licensing arrangements will be analyzed based on the specific facts and circumstances which may be different than our historical licensing arrangements.

For deliverables related to licenses of our technology that involve significant engineering services, we recognize revenue in accordance with the provisions of the proportional performance method or milestone method, as applicable. We determine costs associated with engineering services using actual labor dollars incurred and estimate other direct or incremental costs allocated based on the percentage of time the engineer(s) spent on the project. These costs are deferred until revenue recognition criteria have been met, at which time they are reclassified as cost of revenue.

Licensing revenue deliverables are generally recognized using the milestone method. Under the milestone method, we recognize revenue that is contingent upon the achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. To be considered substantive, the consideration earned by achieving the milestone should be (a) commensurate with either (i) the vendor's performance to achieve the milestone or (ii) to the enhancement of the value of the item delivered as a result of a specific outcome resulting from the vendor's performance to achieve the milestone (b) the consideration should relate solely to past performance, and (c) the consideration should be reasonable relative to all deliverables and payment terms in the arrangement. Other milestones that do not fall under the definition of a milestone under the milestone method are recognized under the authoritative guidance concerning revenue recognition.

**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

We derive a portion of our revenues in the form of fees from members of a wholly-owned entity dedicated to the marketing, development and proliferation of the Z-Wave brand. Membership fees vary based on level and are generally billed on an annual basis with no obligation to renew. Revenue from membership dues is recognized in the month earned. Membership dues received in advance are included in deferred revenue and recognized as revenue ratably over the appropriate period, which is generally twelve months or less. The monthly dues are generally structured to cover the administrative costs and membership services. Membership revenue was approximately \$1.9 million, \$1.9 million and \$0.9 million during fiscal 2017, 2016 and 2015, respectively.

We defer revenue when payments are received from customers in advance of revenue recognition. Deferred revenue at both January 28, 2017 and January 30, 2016 was \$0.4 million, and is included in accrued liabilities in the accompanying consolidated balance sheets.

**Cost of revenue:** Cost of revenue is comprised of the cost of our media processors and chipset solutions, which consists of the cost of purchasing finished silicon wafers manufactured by independent foundries, costs associated with our purchase of assembly, test and quality assurance services and packaging materials, as well as royalties paid to vendors for use of their technology. Also included in cost of revenue is the amortization of purchased IP, manufacturing overhead, including costs of personnel and equipment associated with manufacturing support, product warranty costs, provisions for excess and obsolete inventory, and stock-based compensation expense for personnel engaged in manufacturing support.

**Foreign currency:** The functional currency of our foreign subsidiaries is either the U.S. dollar or the local currency of each country. Monetary assets and liabilities denominated in foreign currencies are remeasured at exchange rates in effect at the end of each period, and non-monetary assets, such as inventory, property, plant and equipment, and liabilities are recorded at historical rates. Gains and losses from these remeasurements as well as other transaction gains and losses are included in interest and other income, net, in the consolidated statements of operations. Our subsidiaries that utilize foreign currency as their functional currency translate such currency into U.S. dollars using (i) the exchange rate on the balance sheet dates for assets and liabilities, and (ii) the average exchange rates prevailing during the period for revenues and expenses. Any translation adjustments resulting from this process are shown separately as a component of accumulated other comprehensive income (loss) within shareholders' equity. Foreign currency transaction gains and losses resulted in net losses of approximately \$0.1 million, \$0.2 million and \$1.0 million in fiscal 2017, 2016 and 2015, respectively.

**Concentration of credit risk:** Financial instruments which potentially subject us to concentrations of credit risk consist primarily of cash and cash equivalents, short-term and long-term marketable securities, restricted cash,

long-term investments and accounts receivable. Our cash, cash equivalents, short-term and long-term marketable securities and restricted cash are on deposit with major financial institutions, as specified in our investment policy guidelines. Such deposits may be in excess of insured limits. We believe that the financial institutions that hold our cash, cash equivalents, short-term and long-term marketable securities and restricted cash are financially sound and, accordingly, minimal credit risk exists with respect to these balances. We have not experienced any investment losses due to institutional failure or bankruptcy.

Sales to our recurring and new customers are generally made on open account, a prepaid or letter of credit basis. We perform ongoing credit evaluations of our customers and generally do not require collateral for sales on credit. We review our accounts receivable balances to determine if any receivables will potentially be uncollectible and include any amounts that are determined to be uncollectible in our allowance for doubtful accounts.

**Loss Contingencies:** In determining loss contingencies, we consider the likelihood of a loss of an asset or the incurrence of a liability as well as the ability to reasonably estimate the amount of such loss or liability. An estimated loss from a loss contingency is accrued and charged to expense when the information available indicates that it is probable that an asset has been impaired or a liability has been incurred, and when the amount of the loss can be reasonably estimated.

**Income taxes:** Income taxes are accounted for under an asset and liability approach. Deferred income taxes reflect the net tax effects of any temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts reported for income tax purposes, and any operating losses and tax credit carry-forwards. Deferred tax liabilities are recognized for future taxable amounts and deferred tax assets are recognized for future deductions, net of any valuation allowance, to reduce deferred tax assets to amounts that are considered more likely than not to be realized.

The impact of an uncertain income tax position on the income tax return must be recognized as the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained.



**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**Stock-based compensation:** We have in effect stock incentive plans under which incentive stock options, restricted stock units, restricted stock awards and non-qualified stock options have been granted to employees and members of the Board of Directors. We also have an employee stock purchase plan for all eligible employees. We measure and recognize compensation expense for all stock-based payment awards made to employees based on the closing fair market value of the Company's common stock on the date of grant. Stock option awards are measured using the Black-Scholes-Merton option pricing model. The value of the portion of the award that is ultimately expected to vest is recognized as expense on a ratable basis over the requisite service period for time-based awards and on a graded basis for performance-based awards in our consolidated statements of operations. We estimate forfeitures, based on historical experience, at the time of grant and revise our estimates, if necessary, in subsequent periods if actual forfeitures differ from those estimates. We recognize a benefit from stock-based compensation in the consolidated statements of shareholders' equity if an excess tax benefit is realized. Further information regarding stock-based compensation can be found in Note 12, "Equity incentive plans and employee benefits."

**Research and development costs:** Costs incurred in the research and development of our products are expensed as incurred.

**Advertising costs:** Advertising costs are expensed as incurred and are included as an element of sales and marketing expense in the accompanying consolidated statements of operations. Advertising expenses incurred were \$0.2 million, \$0.2 million and \$0.1 million in fiscal 2017, 2016 and 2015, respectively.

**Comprehensive income (loss):** Comprehensive income (loss) consists of net income (loss) and other comprehensive income (loss). Other comprehensive income (loss) includes certain changes in equity that are excluded from results of operations; specifically, foreign currency translation adjustments and unrealized gains or losses on marketable securities.

**Recent accounting pronouncements:** Recent accounting pronouncements expected to impact our operations that are not yet effective are summarized as follows:

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash ("ASU 2016-18"). The update provides guidance on the presentation of restricted cash or restricted cash equivalents in the statement of cash flows. ASU 2016-18 is effective for us beginning in the first quarter of fiscal 2019 and early adoption is permitted.

In October 2016, the FASB issued ASU No. 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory (“ASU 2016-16”), which requires the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. ASU 2016-16 is effective for us beginning in the first quarter of fiscal 2019 and early adoption is permitted. We are currently evaluating the impact that this ASU will have on our consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-09, Compensation-Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting (“ASU 2016-09”). The amendment simplifies several aspects of the accounting for share-based payments, including immediate recognition of all excess tax benefits and deficiencies in the income statement, changing the threshold to qualify for equity classification up to the employees’ maximum statutory tax rates, allowing an entity-wide accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures as they occur, and clarifying the classification on the statement of cash flows for the excess tax benefit and employee taxes paid when an employer withholds shares for tax-withholding purposes. ASU 2016-09 is effective for us beginning in the first quarter of fiscal 2018. We are currently evaluating the impact that this ASU will have on our consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842) (“ASU 2016-02”), which requires lessees to recognize all leases, including operating leases, on the balance sheet as a lease asset or lease liability, unless the lease is a short-term lease. ASU 2016-02 also requires additional disclosures regarding leasing arrangements. ASU 2016-02 is effective for us beginning in the first quarter of fiscal 2020 and early adoption is permitted. We are currently evaluating the impact, and expect the ASU will have a material impact on our consolidated financial statements, primarily to the consolidated balance sheets and related disclosures.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606) (“ASU 2014-09”), which amends the existing accounting standards for revenue recognition. ASU 2014-09 is based on principles that govern the recognition of revenue at an amount an entity expects to be entitled when products or services are transferred to customers. ASU 2014-09 is effective for us beginning in the first quarter of fiscal 2019 and early adoption is permitted.

Subsequently, the FASB has issued the following standards related to ASU 2014-09: ASU No. 2016-08, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (“ASU 2016-08”); ASU No. 2016-10, Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing (“ASU 2016-10”); ASU No. 2016-12, Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients (“ASU 2016-12”) and ASU No. 2016-20, Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers (“ASU 2016-20”). We must adopt ASU 2016-08, ASU 2016-10, ASU 2016-12 and ASU 2016-20 with ASU 2014-09 (collectively, the “new revenue standards”). We currently expect to adopt Topic 606 as of February 4, 2018, using the modified retrospective transition method applied to those contracts which were not completed as of that date. Upon adoption, we will recognize the cumulative effect of adopting this guidance as an adjustment to our opening balance of retained earnings. Prior periods will not be retrospectively adjusted. We expect the adoption of Topic 606 will not have a material impact to our consolidated financial statements.



## SIGMA DESIGNS, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 2. Cash, cash equivalents and marketable securities

As of January 28, 2017 and January 30, 2016, we had \$0.3 million and \$0.9 million, respectively, of restricted cash. As of January 28, 2017, restricted cash was related to an office-space operating lease and other transactions and as of January 30, 2016, this amount also included an escrow withholding in association with our acquisition of Bretelon, which is not included in the amounts below. Cash, cash equivalents and marketable securities consist of the following (in thousands):

	January 28, 2017			January 30, 2016		
	Net			Net		
	Book	Unrealized	Fair	Book	Unrealized	Fair
	Value	Gains	Value	Value	Gains	Value
		(Losses)			(Losses)	
Money market funds	\$3,715	\$ -	\$3,715	\$88	\$ -	\$88
Corporate bonds	3,506	(1 )	3,505	7,052	(7 )	7,045
Fixed income mutual funds	1,280	(4 )	1,276	1,255	32	1,287
<b>Total cash equivalents and marketable securities</b>	<b>\$8,501</b>	<b>\$ (5 )</b>	<b>8,496</b>	<b>\$8,395</b>	<b>\$ 25</b>	<b>8,420</b>
Cash on hand held in the United States			9,378			4,141
Cash on hand held overseas			53,332			59,561
<b>Total cash on hand</b>			<b>62,710</b>			<b>63,702</b>
<b>Total cash, cash equivalents and marketable securities</b>			<b>\$71,206</b>			<b>\$72,122</b>
<b>Reported as:</b>						
Cash and cash equivalents			\$66,425			\$63,790
Short-term marketable securities			4,781			4,805
Long-term marketable securities			-			3,527
			<b>\$71,206</b>			<b>\$72,122</b>

The amortized cost and estimated fair value of cash equivalents and marketable securities, by contractual maturity, are as follows (in thousands):

	<b>January 28, 2017</b>		<b>January 30, 2016</b>	
	<b>Book Value</b>	<b>Fair Value</b>	<b>Book Value</b>	<b>Fair Value</b>
Due in one year or less	\$8,501	\$8,496	\$4,863	\$4,893
Due in greater than one year	-	-	3,532	3,527
<b>Total</b>	<b>\$8,501</b>	<b>\$8,496</b>	<b>\$8,395</b>	<b>\$8,420</b>

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****3. Fair values of assets and liabilities***Determination of fair value*

Our cash equivalents and marketable securities are classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. The types of marketable securities valued based on quoted market prices in active markets include most U.S. government and agency securities, sovereign government obligations, money market securities and certain corporate obligations with high credit ratings and an ongoing trading market.

The tables below present the balances of our assets and liabilities measured at fair value on a recurring basis (in thousands):

	<b>January 28, 2017</b>			
	<b>Quoted</b>			
	<b>Prices</b>			
	<b>in</b>	<b>Significant</b>	<b>Significant</b>	
	<b>Active</b>	<b>Observable</b>	<b>Unobservable</b>	
	<b>Markets</b>	<b>Inputs</b>	<b>Inputs (Level</b>	
	<b>for</b>	<b>(Level 2)</b>	<b>3)</b>	
	<b>Identical</b>			
	<b>Assets</b>			
	<b>(Level 1)</b>			
	<b>Fair</b>			
	<b>Value</b>			
Money market funds	\$3,715	\$ 3,715	\$ -	\$ -
Corporate bonds	3,505	3,505	-	-
Fixed income mutual funds	1,276	1,276	-	-
<b>Total cash equivalents and marketable securities</b>	<b>8,496</b>	<b>8,496</b>	<b>-</b>	<b>-</b>
Restricted cash	303	303	-	-
<b>Total assets measured at fair value</b>	<b>\$8,799</b>	<b>\$ 8,799</b>	<b>\$ -</b>	<b>\$ -</b>

	January 30, 2016			
	Quoted Prices			
		in Active	Significant	Significant
	Fair Value	Markets for	Observable	Unobservable
		Identical Assets	Inputs (Level 2)	Inputs (Level 3)
		(Level 1)		
Money market funds	\$88	\$ 88	\$ -	\$ -
Corporate bonds	7,045	7,045	-	-
Fixed income mutual funds	1,287	1,287	-	-
<b>Total cash equivalents and marketable securities</b>	<b>8,420</b>	<b>8,420</b>	<b>-</b>	<b>-</b>
Restricted cash	900	900	-	-
<b>Total assets measured at fair value</b>	<b>\$9,320</b>	<b>\$ 9,320</b>	<b>\$ -</b>	<b>\$ -</b>

*Assets measured and recorded at fair value on a non-recurring basis*

Our non-marketable preferred stock investments in privately-held venture capital funded technology companies are recorded at cost and are adjusted to fair value only in the event that they become other-than-temporarily impaired. As of January 28, 2017, we held an equity investment in one privately-held venture capital funded technology company with a carrying value of \$2.0 million. We did not identify any events or changes in circumstances that may have had a significant adverse effect on the fair value of this investment as of January 28, 2017. During fiscal 2017, 2016 and 2015, we recorded impairment charges of \$0.8 million, \$0.4 million and \$0.6 million, respectively, in connection with our privately-held investments as we concluded the impairment to be other-than-temporary. Each of these equity investments in privately-held companies constituted less than a 20% ownership position. Furthermore, we do not believe that we have the ability to exert significant influence over any of these companies.

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****4. Derivative financial instruments**

Foreign exchange contracts are recognized either as assets or as liabilities on the balance sheet at fair value at the end of each reporting period.

We have used foreign currency derivatives such as forward and option contracts as hedges against certain anticipated transactions denominated in Israeli shekels, or NIS. We do not assess derivative contracts for hedge effectiveness and thus such contracts do not qualify for hedge accounting. Therefore, we recognize all gains and losses from changes in the fair value of these derivative contracts immediately into earnings. Changes in fair value of the derivatives are recorded as interest and other income, net.

As of January 28, 2017 and January 30, 2016, we had no foreign exchange contracts. In interest and other income, net as a result of foreign exchange contracts, we recognized zero in both fiscal 2017 and 2016 and a loss of less than \$0.1 million in fiscal 2015.

**5. Investments in privately-held companies**

The following table sets forth the value of investments in and notes receivable from privately-held companies (in thousands):

	<b>January 28, 2017</b>	<b>January 30, 2016</b>
<b>Investments</b>		
Issuer A	\$ 2,000	\$ 2,000
Issuer B	-	750
Issuer C	-	134
<b>Total investments</b>	<b>\$ 2,000</b>	<b>\$ 2,884</b>



During fiscal 2009, we purchased shares of preferred stock in a privately-held venture capital funded technology company (“Issuer A”) at a total investment cost of \$1.0 million. In the fourth quarter of fiscal 2010, we purchased additional shares of preferred stock in Issuer A at a cost of \$1.0 million. In November 2010, we loaned \$1.0 million to Issuer A and received a secured promissory note. During the second quarter of fiscal 2015, the note receivable from Issuer A was fully repaid.

In the third quarter of fiscal 2011, we purchased shares of preferred stock in a privately-held technology company (“Issuer B”) at a total investment cost of \$1.0 million. In the fourth quarter of fiscal 2016 and the first and second quarter of fiscal 2017, we recorded impairment charges of \$0.3 million, \$0.3 million and \$0.4 million, respectively, on this investment as we concluded the impairment to be other-than-temporary, effectively nullifying any value from this investment as of January 28, 2017.

In the third quarter of fiscal 2012, we made an equity investment of \$0.1 million in a privately-held joint venture (“Issuer C”). In the second quarter of fiscal 2017, we recorded impairment charges of \$0.1 million on this investment as we concluded the impairment to be other-than-temporary, effectively nullifying any value from this investment as of January 28, 2017.

We made the above-described investments because we viewed the issuer as either having strategic technology or a business that would complement our technological capabilities or help create an opportunity for us to sell our chipset solutions. We analyze each investment quarterly for evidence of impairment.

Our President and Chief Executive Officer is a member of the Board of Directors of both Issuer A and Issuer B. In the case of Issuer B, the investment transaction was negotiated without the personal involvement of the executive officer who had a personal interest in the transaction.

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****6. Supplemental financial information**

Inventory consists of the following (in thousands):

	<b>January 28, 2017</b>	<b>January 30, 2016</b>
Wafers and other purchased materials	\$8,595	\$15,440
Work-in-process	2,780	2,885
Finished goods	6,772	8,384
<b>Total inventory</b>	<b>\$18,147</b>	<b>\$26,709</b>

Prepaid expenses and other current assets consist of the following (in thousands):

	<b>January 28, 2017</b>	<b>January 30, 2016</b>
Prepayments for taxes	\$ 3,421	\$3,357
Non-operating receivable	955	-
Prepayments for royalties	776	741
Prepayments for inventory	442	3,725
Deposits	202	3,200
Other current assets	2,221	3,062
<b>Total prepaid expenses and other current assets</b>	<b>\$ 8,017</b>	<b>\$14,085</b>

Software, equipment and leasehold improvements consist of the following (in thousands):

**Estimated**

	<b>Useful Lives</b>	<b>January 28,</b>	<b>January 30,</b>
	<b>(years)</b>	<b>2017</b>	<b>2016</b>
Software	3 - 5	\$49,915	\$40,411
Mask sets	3	18,209	14,130
Equipment	3	7,719	8,088
Office equipment and furniture	3 - 5	7,857	7,705
Leasehold improvements	1 - 5	2,108	2,089
<b>Total</b>		85,808	72,423
Less: Accumulated depreciation and amortization		(67,285)	(58,337)
<b>Total software, equipment and leasehold improvements, net</b>		\$18,523	\$14,086

Software, equipment and leasehold improvement depreciation and amortization expense for fiscal 2017, 2016 and 2015 was \$10.9 million, \$12.6 million and \$12.4 million, respectively.

We recorded impairment charges of \$0.3 million, \$1.4 million and \$2.1 million during fiscal 2017, 2016, and 2015, respectively, related to mask sets and software related to design tools associated with discontinued products which were recorded in operating expenses in the accompanying consolidated statements of operations.

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

Accrued liabilities consist of the following (in thousands):

	<b>January 28, 2017</b>	<b>January 30, 2016</b>
License fees	\$5,578	\$5,181
Income taxes payable, current portion	2,094	2,305
Rebates	1,585	2,864
Royalties	1,378	1,469
Warranties	783	959
Deferred revenue	350	407
Other accrued liabilities	1,839	1,447
<b>Total accrued liabilities</b>	<b>\$13,607</b>	<b>\$14,632</b>

The following table summarizes activity related to accrued rebates (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January 28, 2017</b>	<b>January 30, 2016</b>	<b>January 31, 2015</b>
Beginning balance	\$2,864	\$9,599	\$3,587
Charged as a reduction of revenue	4,121	11,724	17,845
Reversal of unclaimed rebates	(224 )	(1,028 )	-
Payments	(5,176)	(17,431)	(11,833)
Ending balance	\$1,585	\$2,864	\$9,599

Other long-term liabilities consist of the following (in thousands):

	<b>January 28, 2017</b>	<b>January 30, 2016</b>
License fees	\$ 5,400	\$ 3,000
Deferred rent obligations	769	964
Other long-term liabilities	56	59
<b>Total other long-term liabilities</b>	<b>\$ 6,225</b>	<b>\$ 4,023</b>

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****7. Business combination, Goodwill and Intangible Assets***Business Combination*

In fiscal 2016, we completed the acquisition of Bretelon, Inc. (“Bretelon”) for a purchase consideration of \$19.4 million. We recorded approximately \$11.1 million in goodwill, \$12.6 million in intangibles and assumed \$4.3 million in net liabilities. In fiscal 2017, we recorded a \$0.5 million decrease in goodwill as part of the purchase price allocation adjustment.

*Goodwill*

As of January 28, 2017, we had \$10.6 million in goodwill relating to the Bretelon acquisition. There were no goodwill impairments in fiscal 2017 and 2016. We will continue to evaluate goodwill on an annual basis as of the last day of our fiscal year and whenever events or changes in circumstances indicate the carrying value may not be recoverable.

*Intangible Assets*

The table below presents the balances of our intangible assets (in thousands):

	<b>January 28, 2017</b>	<b>January 30, 2016</b>
Acquired intangible assets	\$88,910	\$88,910
Purchased IP	42,500	38,956
<b>Total</b>	<b>131,410</b>	<b>127,866</b>
Accumulated amortization	(100,666)	(90,816)

<b>Intangible assets, net</b>	\$30,744	\$37,050
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Acquired intangible assets represent intangible assets acquired through business combinations. Purchased intellectual property (“Purchased IP”) represents intangible assets acquired through direct purchases of licensed technology from vendors, which is incorporated into our products.

Purchased IP not yet deployed relates to Purchased IP from third parties for our products that are currently in development. We begin amortizing such intellectual property upon the earlier of the beginning of the term of the license agreement, as appropriate, or at the time we begin shipment of the associated products into which such intellectual property is incorporated.

#### *Impairment of intangible assets*

We test long-lived assets, including purchased intangible assets, for impairment whenever events or changes in circumstances, such as a change in technology, indicate that the carrying value of these assets may not be recoverable.

During fiscal 2017, we continued to streamline our operations to further align our operating expenses with our business, industry and revenue outlook. In connection with our continued efforts, we performed impairment reviews of our intangible assets by comparing undiscounted expected future cash flows with the carrying values of the underlying assets. The review during fiscal 2017 indicated that certain purchased IP licenses were impaired; as a result, we recorded impairment charges for purchased IP of \$0.8 million which was recorded in operating expenses in the accompanying consolidated statements of operations.

The review during fiscal 2016 and 2015 indicated certain purchased IP licenses incorporated into discontinued products primarily related to the Connected Smart TV Platforms market were impaired; as a result, we recorded impairment charges for purchased IP of \$0.4 million and \$0.7 million, respectively, which was recorded in operating expenses in the accompanying consolidated statements of operations.

## SIGMA DESIGNS, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Intangible assets, subject to amortization, were as follows (in thousands, except for years):

	<b>January 28, 2017</b>				<b>Weighted</b>
			<b>Accumulated</b>		<b>Average</b>
	<b>Gross</b>	<b>Impairment</b>	<b>Amortization</b>	<b>Net</b>	<b>Remaining</b>
	<b>Value</b>		<b>and Effect of</b>	<b>Value</b>	<b>Amortization</b>
			<b>Currency</b>		<b>Period</b>
			<b>Translation</b>		<b>(Years)</b>
Acquired intangible assets:					
Developed technology	\$85,427	\$ (24,614 )	\$ (52,854 )	\$7,959	7.4
Customer relationships	54,505	(30,486 )	(20,897 )	3,122	5.8
Trademarks and other	4,078	-	(3,858 )	220	1.9
Purchased IP - amortizing	36,007	(5,516 )	(23,057 )	7,434	2.3
<b>Total amortizing</b>	<b>180,017</b>	<b>(60,616 )</b>	<b>(100,666 )</b>	<b>18,735</b>	<b>5.0</b>
Purchased IP - not yet deployed	16,449	(4,440 )	-	12,009	
<b>Total intangibles</b>	<b>\$196,466</b>	<b>\$ (65,056 )</b>	<b>\$ (100,666 )</b>	<b>\$30,744</b>	

	<b>January 30, 2016</b>				<b>Weighted</b>
			<b>Accumulated</b>		<b>Average</b>
	<b>Gross</b>	<b>Impairment</b>	<b>Amortization</b>	<b>Net</b>	<b>Remaining</b>
	<b>Value</b>		<b>and Effect of</b>	<b>Value</b>	<b>Amortization</b>
			<b>Currency</b>		<b>Period</b>
			<b>Translation</b>		<b>(Years)</b>
Acquired intangible assets:					
Developed technology	\$85,427	\$ (24,614 )	\$ (48,824 )	\$11,989	6.5
Customer relationships	54,505	(30,486 )	(19,557 )	4,462	5.7
Trademarks and other	4,078	-	(3,739 )	339	2.9



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Purchased IP - amortizing	32,838	(5,516 )	(18,696 )	8,626	2.9
<b>Total amortizing</b>	176,848	(60,616 )	(90,816 )	25,416	5.1
Purchased IP - not yet deployed	15,774	(4,140 )	-	11,634	
<b>Total intangibles</b>	\$192,622	\$ (64,756 )	\$ (90,816 )	\$37,050	

The following table presents the amortization of intangible assets in the accompanying consolidated statements of operations (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January</b>	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>	<b>31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Cost of revenue	\$7,267	\$ 7,586	\$ 7,922
Operating expenses	2,586	1,722	1,418
<b>Total intangible amortization expense</b>	<b>\$9,853</b>	<b>\$ 9,308</b>	<b>\$ 9,340</b>

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

As of January 28, 2017, we expect the amortization expense in future periods to be as follows (in thousands):

<b>Fiscal years</b>	<b>Purchased IP- Amortizing</b>	<b>Developed Technology</b>	<b>Customer Relationships</b>	<b>Trademarks and other</b>	<b>Total</b>
2018	\$ 3,513	\$ 1,544	\$ 543	\$ 120	\$5,720
2019	2,616	1,060	543	100	4,319
2020	1,230	1,060	543	-	2,833
2021	75	970	543	-	1,588
2022	-	700	543	-	1,243
Thereafter	-	2,625	407	-	3,032
<b>Total</b>	<b>\$ 7,434</b>	<b>\$ 7,959</b>	<b>\$ 3,122</b>	<b>\$ 220</b>	<b>\$18,735</b>

**8. Restructuring costs**

In fiscal 2013, as a result of significant expansion in our infrastructure and operational activities in connection with purchases and acquisitions that took place between fiscal years 2008 and 2013, and in response to certain redundancies, underperforming operations and delays in programs and product releases, we implemented a restructuring program to realign our global operating expenses with our new business conditions, and to improve efficiency, competitiveness and profitability.

The restructuring plan was completed in fiscal 2016. Expenses recognized for restructuring activities impacting our operating expenses are included in “Restructuring costs” in the consolidated statements of operations.

**9. Sale of development project**

On March 8, 2013, we entered into an Asset Purchase Agreement with a third party (the “Buyer”) to sell certain development projects (intellectual property) and long-lived assets related to the connectivity technology over coaxial cable market, including the transfer of 21 employees to the Buyer. Under the terms of the Asset Purchase Agreement, if certain technical milestones were met by September 30, 2013 as a result of further development of the transferred technology by the Buyer, we were to be paid an additional \$5.0 million in cash.

The Buyer advised us that it did not believe the milestones had been met by the deadline of September 30, 2013. On May 19, 2014, the parties amended the Asset Purchase Agreement to require the use of Judicial Arbitration and Mediations Services (“JAMS”) for arbitration to settle the dispute between the parties. We pursued our rights to the milestone consideration payment through the alternative dispute resolution provisions set forth in the amendment. On September 5, 2014, the Buyer filed counterclaims in response to our claims arising from the Asset Purchase Agreement. Arbitration regarding this dispute took place on June 1, 2015. In August 2015, we prevailed on all of the claims we asserted against the Buyer, and all of the Buyer’s counterclaims against us were denied. We were awarded \$5.0 million plus reimbursement of reasonable legal and other associated costs and interest. We have recovered \$2.6 million in legal costs, interest and other associated expenses from the Buyer, for a total recovery of \$7.6 million, which was recorded as other income in our consolidated statements of operations in fiscal 2016.

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****10. Commitments and contingencies***Commitments**Operating Leases*

Our primary facility in Fremont, California is leased under a non-cancelable lease. The lease carries a term of 81 calendar months commencing on January 1, 2015 for which payments began in October 2015.

We also lease facilities in San Diego, Shanghai, Shenzhen, Hong Kong, Taiwan, Vietnam, South Korea, Japan, Singapore, Israel, Germany, France, Denmark and The Netherlands and have vehicles in Israel under non-cancelable leases.

Aggregate future minimum annual payments under all operating leases are as follows (in thousands):

<b>Fiscal Years</b>	<b>Operating Leases</b>
2018	\$ 3,803
2019	1,825
2020	1,167
2021	710
2022	463
Thereafter	-
<b>Total minimum lease payments</b>	<b>\$ 7,968</b>

Rent expense, recorded on a straight-line basis, was \$3.7 million, \$4.0 million and \$4.4 million for fiscal 2017, 2016 and 2015, respectively.

*Purchase commitments*

We place non-cancelable orders to purchase semiconductor products from our suppliers on an eight to twelve week lead-time basis. As of January 28, 2017, the total amount of outstanding non-cancelable purchase orders was approximately \$16.1 million.

*Third-party licensed technology*

In October 2015, we entered into an agreement with a vendor to purchase \$6.1 million of licensed technology for integration into future iterations of our products. Payments under this agreement are being made on an annual basis from December 2015 through December 2018. As of January 28, 2017, remaining payments under this agreement totaled \$3.0 million. In addition to this agreement, we have entered into other purchase arrangements for certain licensed technology; remaining payments under these agreements totaled \$3.3 million as of January 28, 2017. Payments under these arrangements are being made through fiscal 2018. We have fully accrued these amounts as of January 28, 2017.

*Design tools*

In June 2016, we entered into an agreement with a vendor to purchase \$7.8 million of design tools. Payments under this agreement are being made on a quarterly basis from August 2016 through May 2019. As of January 28, 2017, remaining payments under this agreement totaled \$6.5 million. In addition to this agreement, we have entered into other purchase arrangements for certain design tools; remaining payments under these agreements totaled \$0.8 million as of January 28, 2017. Payments under these arrangements are being made through fiscal 2019. We have fully accrued these amounts as of January 28, 2017.

*Royalties*

We pay royalties for the right to sell certain products under various license agreements. During fiscal 2017, 2016 and 2015, we recorded gross royalty expense of \$5.0 million, \$4.2 million and \$2.5 million, respectively, in cost of revenue in the consolidated statements of operations.

Our wholly-owned subsidiary, Sigma Designs Israel SDI Ltd. (formerly CopperGate Communications, Ltd.), participated in programs sponsored by the Office of the Chief Scientist of Israel's Ministry of Industry, Trade and

Labor, or the OCS, for the support of research and development activities that we conducted in Israel. Through January 28, 2017, we had obtained grants from the OCS aggregating to \$5.2 million of our research and development projects in Israel. We completed the most recent of these projects in 2013. We are obligated to pay royalties to the OCS, amounting up to 4.5% of the sales of certain products up to an amount equal to the grants received, plus LIBOR-based interest. As of January 28, 2017, our remaining potential obligation under these programs was approximately \$1.2 million.

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)***Contingencies**Product Warranty*

In general, we sell products with a one-year limited warranty that our products will be free from defects in material and workmanship. Warranty cost is estimated at the time revenue is recognized based on historical activity, and additionally, for any specific known product warranty issues. Accrued warranty cost includes hardware repair and/or replacement and is included in accrued liabilities in the accompanying consolidated balance sheets.

Details of the change in accrued warranty for fiscal 2017, 2016 and 2015 are as follows (in thousands):

Fiscal Years	Balance Beginning of Period	Additions	Deductions	Balance End of Period
2015	\$ 620	\$ 763	\$ (519 )	\$ 864
2016	\$ 864	\$ 828	\$ (733 )	\$ 959
2017	\$ 959	\$ 493	\$ (669 )	\$ 783

*Litigation*

From time to time, we are involved in claims and legal proceedings that arise in the ordinary course of business. We expect that the number and significance of these matters will increase as our business expands. In particular, we could face an increasing number of patent and other intellectual property claims as the number of products and competitors in our industry grows. Any claims or proceedings against us, whether meritorious or not, could be time consuming, result in costly litigation, require significant amounts of management time, result in the diversion of significant operational resources or cause us to enter into royalty or licensing agreements which, if required, may not be available on terms favorable to us. If an unfavorable outcome were to occur against us, there exists the possibility of a material

adverse impact on our financial position and results of operations for the period in which the unfavorable outcome occurs and, potentially, in future periods.

*Advanced Micro Device, Inc. Litigation:* On January 23, 2017, Advanced Micro Devices, Inc. and ATI Technologies ULC (collectively “AMD”), filed suit against us and many other named defendants, including VIZIO, Mediatek and LG in the United States District Court for the District of Delaware asserting infringement of U.S. Patent Nos. 7,633,506 and 7,796,133. On January 24, 2017, AMD instituted proceedings in the United States International Trade Commission (“ITC”) asserting infringement of U.S. Patent Nos. 7,633,506 and 7,796,133. The Delaware and ITC complaint seek unspecified monetary damages and injunctive relief. At this time, we are unable to determine the outcome of this matter and, accordingly, cannot estimate the potential financial impact this action could have on our business, operating results, cash flows or financial position.

*Broadcom Corporation Litigation:* On March 7, 2017, Broadcom Corporation (“Broadcom”), filed suit against us in the United States District Court for the Central District of California asserting infringement of U.S. Patent No. 7,310,104. On March 8, 2017, Broadcom instituted proceedings in the United States ITC asserting infringement of U.S. Patent Nos. 8,284,844, 7,590,059, 8,068,171 and 7,342,967. The California and ITC complaint seek unspecified monetary damages and injunctive relief. At this time, we are unable to determine the outcome of this matter and, accordingly, cannot estimate the potential financial impact this action could have on our business, operating results, cash flows or financial position.

### *Indemnifications*

In certain limited circumstances, we have agreed and may agree in the future to indemnify certain customers against intellectual property infringement claims from third parties related to the use of our technology. In these limited circumstances, the terms and conditions of sale or our standing agreement with such customers generally limit the scope of the available remedies to a variety of industry-standard methods including, but not limited to, a right to control the defense or settlement of any claim, procure the right for continued usage, and a right to replace or modify the infringing products to render them non-infringing. To date, we have not incurred or accrued any costs related to any claims under such indemnification provisions.

Our articles of incorporation and bylaws require that we indemnify our officers and directors against expenses, judgments, fines, settlements and other amounts actually and reasonably incurred in connection with any proceedings arising out of their services to us. In addition, we have entered into separate indemnification agreements with each of our directors and executive officers, which provide for indemnification of these individuals under similar circumstances and under additional circumstances. The indemnification obligations are more fully described in our charter documents and the form of indemnification agreement filed with our SEC reports. We purchase insurance to cover claims or a portion of the claims made against our directors and officers. Since a maximum obligation is not explicitly stated in our charter documents or in our indemnification agreements and will depend on the facts and circumstances that arise out of any future claims, if any, the overall maximum amount of the obligations cannot be reasonably estimated.





**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

*Third-party licensed technology*

We regularly license technology from various third party licensors and incorporate that technology into our product offerings. Some technology licenses require us to pay royalties directly to the licensor, while others require us to report sales activities to our licensors so that royalties may be collected from our customers. From time to time, we are audited by our licensors for compliance with the terms of our license agreements. On February 10, 2017, we received a letter from one of our licensors notifying us of their intent to audit our compliance with the terms of the license agreements. We have not yet begun the audit proceedings, but intend to cooperate with the licensor to bring the audit process to a resolution.

We may be required to make additional payments as a result of future compliance audits. For license agreements where we have royalty obligations, we charge any settlement-related payments that we make in connection with compliance audits to cost of revenue. For license agreements where we have reporting obligations, we treat any settlement-related payments as penalties, and charge the amounts to operating expenses in sales and marketing. As of the date of this filing, we believe we are substantially in compliance with the terms of our license agreements.

**11. Earnings per share**

Basic net (loss) income per share is computed by dividing net (loss) income by the weighted-average number of common shares outstanding for the fiscal period. Diluted net loss per share is the same as basic net loss per share as the inclusion of potentially issuable shares is anti-dilutive. Diluted net income per share is computed by adjusting outstanding shares, assuming any dilutive effects of stock incentive awards calculated using the treasury stock method. Under the treasury stock method, an increase in the fair market value of our common stock results in a greater dilutive effect from outstanding stock options, restricted stock units and stock purchase rights. Additionally, the exercise of employee stock options and stock purchase rights and the vesting of restricted stock units results in a further dilutive effect on net income per share.

The following table sets forth the basic and diluted net (loss) income per share computed for fiscal 2017, 2016 and 2015 (in thousands, except per share amounts):

	<b>Fiscal Years Ended</b>		
	<b>January 28,</b>	<b>January 30,</b>	<b>January 31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Numerator:			
Net (loss) income, as reported	\$(18,315)	\$ 158	\$(21,701)
Denominator:			
Weighted-average common shares outstanding- basic	37,429	35,890	34,693
Dilutive effect of employee stock plans	-	779	-
Weighted-average common shares outstanding- diluted	37,429	36,669	34,693
Net (loss) income per share - basic	\$(0.49 )	\$ 0.00	\$(0.63 )
Net (loss) income per share - diluted	\$(0.49 )	\$ 0.00	\$(0.63 )

The weighted-average number of shares outstanding used in the computation of basic and diluted net (loss) income per share does not include the effect of the following potential outstanding shares of common stock. The effects of these potentially outstanding shares were not included in the calculation of basic and diluted net (loss) income per share because the effect would have been anti-dilutive (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January 28,</b>	<b>January 30,</b>	<b>January 31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Stock options	2,379	2,367	3,908
Restricted stock units and awards	514	232	166

**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**12. Equity incentive plans and employee benefits**

*Equity incentive plans*

We have adopted equity incentive plans that provide for the grant of stock awards to employees, directors and consultants that are designed to encourage and reward their long-term contributions to us and provide an incentive for them to remain with us. These plans are also intended to align our employees' interest with the creation of long-term shareholder value. On July 10, 2015, the Board of Directors of the Company approved, subject to shareholder approval, the Company's 2015 Stock Incentive Plan (the "2015 Plan"), which was approved by the Company's shareholders at the 2015 annual meeting of shareholders held on August 20, 2015. The 2015 Plan is the successor to and continuation of the Company's 2001 Stock Plan (the "2001 Plan"), and the Amended and Restated 2009 Stock Incentive Plan (the "2009 Plan" and together with the 2001 Plan, the "Prior Plans").

Our 2015 Plan provides for the grant of stock options, restricted stock, restricted stock units, and other stock-related and performance awards that may be settled in cash, stock or other property. The total number of shares of the Company's common stock reserved for issuance under the 2015 Plan consists of 3,000,000 shares plus the number of shares subject to stock awards outstanding under the Prior Plans that terminate prior to exercise and would otherwise be returned to the share reserves under the Prior Plans up to a maximum of 5,000,000 shares.

As of January 28, 2017, there were 1,914,637 shares available for future grants under the 2015 Plan. Additionally, up to 2,380,734 shares of common stock subject to stock awards outstanding under the Prior Plans may become available for issuance under the 2015 Plan. As of September 23, 2009 and August 20, 2015, the 2001 Plan and the 2009 Plan were closed for future grants, respectively; however, these plans will continue to govern all outstanding awards that we originally granted from each plan.

The majority of restricted stock units and restricted stock awards that vested during fiscal 2017, 2016 and 2015 were net-share settled such that the Company withheld shares with value equivalent to the employees' minimum statutory obligation for the applicable income and other employment taxes, and remitted the cash to the appropriate taxing authorities. The total shares withheld were approximately 85,465, 42,654 and 34,356 during fiscal 2017, 2016 and 2015, respectively, and were based on the value of the RSUs on their respective vesting dates as determined by our closing stock price. Total payments for the employees' tax obligations to taxing authorities were \$1.5 million, \$1.5 million and \$0.3 million during fiscal 2017, 2016 and 2015, respectively, and are reflected as a financing activity in

the accompanying consolidated statements of cash flows.

### *Stock Options*

The total stock option activities and balances of our stock option plans are summarized as follows:

	<b>Number of Options Outstanding</b>	<b>Weighted Average Exercise Price per Share</b>	<b>Weighted Average Remaining Contractual Term (Years)</b>	<b>Aggregate Intrinsic Value</b>
<b>As of February 1, 2014</b>	4,094,621	\$ 11.24	4.8	
Granted (Weighted average fair value of \$1.80)	467,400	4.54		
Cancelled	(734,702 )	9.52		
Exercised	(59,261 )	4.59		
<b>As of January 31, 2015</b>	3,768,058	10.86	4.9	
Granted (Weighted average fair value of \$3.64)	104,200	8.74		
Cancelled	(415,146 )	10.39		
Exercised	(523,441 )	6.83		
<b>As of January 30, 2016</b>	2,933,671	11.57	4.2	
Granted (Weighted average fair value of \$3.14)	483,400	6.87		
Cancelled	(556,616 )	11.41		
Exercised	(194,884 )	4.75		
<b>As of January 28, 2017</b>	2,665,571	\$ 11.25	4.5	\$ 566,742
Ending vested and expected to vest	2,621,451	\$ 11.33	4.4	\$ 565,667
Ending exercisable	2,131,470	\$ 12.35	3.3	\$ 513,643

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The aggregate intrinsic value, as of January 28, 2017, in the table above represents the total pretax intrinsic value, based on our closing stock price of \$6.40 on that date which would have been received by the option holders had all options holders exercised their options as of that date. The aggregate exercise date intrinsic value of options that were exercised under our stock plans during fiscal 2017, 2016 and 2015 were \$0.6 million, \$1.6 million and \$0.1 million, respectively, determined as of the exercise date. The total fair value of options which vested during fiscal 2017, 2016 and 2015 was \$0.5 million, \$1.3 million and \$2.1 million, respectively.

The options outstanding and currently exercisable as of January 28, 2017 were in the following exercise price ranges:

**Options Outstanding and Exercisable**

<b>Range of Exercise Prices</b>	<b>Number Outstanding</b>	<b>Weighted Average Remaining Contractual Term (Years)</b>	<b>Weighted Average Exercise Price Per Share</b>	<b>Number Exercisable</b>	<b>Weighted Average Exercise Price Per Share</b>
\$0.92 - \$4.98	297,053	6.95	\$ 4.60	260,579	\$ 4.55
\$5.76 - \$6.48	335,539	8.34	6.36	95,155	6.08
\$6.49 - \$7.30	294,240	7.56	6.80	171,982	6.60
\$7.44 - \$10.51	209,083	7.29	8.39	74,098	9.28
\$10.59 - \$10.59	318,700	2.97	10.59	318,700	10.59
\$10.87 - \$10.87	300,600	1.74	10.87	300,600	10.87
\$11.07 - \$11.09	353,934	2.39	11.08	353,934	11.08
\$11.47 - \$15.25	348,422	2.15	13.23	348,422	13.23
\$15.64 - \$41.58	164,000	1.29	33.83	164,000	33.83
\$45.83 - \$45.83	44,000	0.77	45.83	44,000	45.83
	2,665,571	4.48	\$ 11.25	2,131,470	\$ 12.35

As of January 28, 2017, the unrecorded stock-based compensation balance related to stock options outstanding excluding estimated forfeitures was \$1.5 million and will be ratably recognized over an estimated weighted average amortization period of 3.0 years. The amortization period is based on the expected remaining vesting term of the options.

*Restricted Stock Awards*

Restricted stock awards, or RSAs, may be granted under our 2015 Plan and will reduce shares available to grant under the plan by one share for every one share of restricted stock granted. Historically, RSAs were granted under our 2009 Plan and consisted of time-based restricted shares, which shares were subject to forfeiture until vested if length of service requirements had not been met. These RSAs had a contractual term of ten years and generally vested over one to five years according to the terms specified in the individual grants. As of January 28, 2017 and January 30, 2016, there was no unrecognized stock-based compensation balance related to RSAs as all previously outstanding RSAs have vested. As of January 31, 2015, the shares of RSAs outstanding was 44,189 with a weighted average grant date fair value per award of \$8.75.

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)***Restricted Stock Units*

We value restricted stock units, or RSUs, using the quoted market price of the underlying stock on the date of grant. RSUs are granted under our 2015 Plan and have a contractual term of ten years and generally vest over four years, based on continued employment, and are settled upon vesting in shares of the Company's common stock on a one-for-one basis. Each share issued with respect to RSUs granted under the 2015 Plan reduces the number of shares available for grant under the plan by one share. RSUs cancelled and shares withheld to satisfy tax withholding obligations increase the number of shares available for grant under the 2015 Plan utilizing a factor of one times the number of RSUs cancelled or shares withheld. All awards generally provide for accelerated vesting upon a change in control or normal or early retirement (as defined in the applicable stock incentive plan).

During the fourth quarter of fiscal 2016, the Company granted 299,971 performance-based RSUs to certain employees, the vesting of which is contingent upon the achievement of certain performance criteria, namely future sales targets attributable to certain types of products. These RSUs have a multi-year performance period and are expected to vest over a two year period commencing upon the achievement of the respective performance criteria.

Stock-based compensation expense will be recognized over the requisite service period based on management's best estimate of the probability of the performance criteria being satisfied using the most currently available projections of future sales performance, adjusted at each balance sheet date. Changes in the subjective and probability-based assumptions can materially affect the estimate of fair value of stock-based compensation and consequently, the related amount recognized in our consolidated statements of operations. As of January 28, 2017, the performance criterion has not yet been met for the performance-based RSUs outstanding. Consequently, we have not recognized any compensation expense related to these performance-based RSUs during fiscal 2017 and 2016.

The following table sets forth the shares of RSUs outstanding as of January 28, 2017:

<b>Restricted Stock Units</b>	<b>Weighted Average Grant Date Fair</b>	<b>Aggregate Intrinsic Value</b>
---------------------------------------	---	--



		<b>Value per Unit</b>	
<b>As of February 1, 2014</b>	468,507	\$ 5.78	2,197,298
Granted	1,157,127	4.91	
Vested	(257,315 )	6.22	
Cancelled/forfeited	(54,404 )	6.09	
<b>As of January 31, 2015</b>	1,313,915	4.91	8,356,499
Granted	1,165,832	8.74	
Vested	(861,259 )	5.52	
Cancelled/forfeited	(215,876 )	7.37	
<b>As of January 30, 2016</b>	1,402,612	7.53	9,299,318
Granted	1,057,944	7.42	
Vested	(783,909 )	7.13	
Cancelled/forfeited	(38,029 )	7.67	
<b>As of January 28, 2017</b>	1,638,618	\$ 7.64	\$10,487,155

The total fair value of RSUs which vested during fiscal 2017, 2016 and 2015 was \$5.6 million, \$4.8 million and \$1.6 million, respectively. The aggregate intrinsic value, as of January 28, 2017, in the table above represents the total pretax intrinsic value, based on our closing stock price of \$6.40 on that date which would have been received by the RSU holders had all RSU holders vested as of that date. As of January 28, 2017, the unrecognized stock-based compensation balance related to RSUs outstanding excluding estimated forfeitures was \$9.8 million and will be ratably recognized over an estimated weighted average amortization period of 3.0 years.

**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

*Employee stock purchase plan*

On July 10, 2015, the Board of Directors of the Company approved, subject to shareholder approval, the Company's 2015 Employee Stock Purchase Plan (the "2015 ESPP"), which was approved by the Company's shareholders at the 2015 annual meeting of shareholders held on August 20, 2015. The 2015 ESPP has replaced the Company's 2010 Employee Stock Purchase Plan (the "2010 ESPP"), which was terminated. There are 3,500,000 shares of common stock reserved for issuance under the 2015 ESPP. The 2015 ESPP is implemented by offerings of rights to eligible employees. Each offering will be in such form and will contain such terms and conditions as our Board or a committee thereof will deem appropriate, subject to compliance with applicable regulations. The provisions of separate offerings need not be identical. Under the terms of the offerings that have commenced to date under the 2015 ESPP, eligible employees may authorize payroll deductions of up to 15% of their regular base salaries limited to \$25,000 during any calendar year, to purchase common stock at 85% of the fair market value of our common stock at the beginning or end of the six-month offering period, whichever is lower. The maximum number of shares that can be purchased in any single offering period is limited under the terms of the offering. These terms will automatically apply to future offerings under the 2015 ESPP unless modified by the Board or a committee thereof.

During fiscal 2017, 2016 and 2015, 486,131, 92,122 and 626,966 shares of our common stock were purchased at an average price of \$5.23, \$5.37 and \$3.89 per share, respectively. As of January 28, 2017, we had 2,921,747 available for issuance of the 3,500,000 shares of common stock reserved under the 2015 ESPP. Prior to the 2015 ESPP approval, the active plan governing employee purchases during fiscal 2016 was the 2010 ESPP. However, no purchases were made under the aforementioned plan due to circumstances that arose during fiscal 2015 resulting in the issuance of 315,810 shares in excess of the 2,500,000 shares previously reserved under the 2010 ESPP, details of which are described below.

During the first quarter of fiscal 2016, we discovered that we inadvertently sold shares of our common stock to our employees during fiscal 2015 in excess of the shares of common stock authorized to be issued under our 2010 ESPP. As a result, we may have failed to comply with the registration or qualification requirements of the federal securities law. Certain purchasers of the shares that were issued in excess of the shares authorized under our 2010 ESPP may have the right to rescind their purchases from us for an amount equal to the purchase price paid for shares, plus interest from the date of purchase. These shares were treated as issued and outstanding for financial reporting purposes as of the original date of issuance. We intend to make a registered rescission offer in fiscal 2018 to eligible participants who purchased shares during the impacted offering periods in fiscal 2015.

As of January 28, 2017, there were approximately 42,684 shares issued to participants in the 2010 ESPP during the impacted offering periods that continued to be held by the original purchasers of such shares which may be subject to the rescission rights referenced above. All of these shares were originally purchased for \$3.89 per share. If holders of all these shares seek to rescind their purchases, we could be required to make aggregate payments of up to approximately \$0.4 million based on initial estimates, which does not include statutory interest. However, the actual impact to our cash position may be lower depending on the number of holders who accept the rescission offer and tender their shares. Pursuant to the authoritative accounting guidance, the shares are considered mandatorily redeemable as the redemption may be outside of our control. We reclassified the aforementioned amount out of additional-paid-in-capital into accrued compensation and related benefits during fiscal 2015. We have not classified the shares themselves outside of permanent equity as these shares are legally outstanding with all rights and privileges therein. We also may be subject to civil and other penalties by regulatory authorities as a result of the failure to register these shares with the Securities and Exchange Commission. We do not believe that the failure to register the shares or the planned rescission offer will have a material impact on our consolidated financial statements.

On August 22, 2016, we reached a closing agreement with the Internal Revenue Service. We are in the process of settling the potential tax consequences on behalf of our employees for issuing shares in excess of the number of shares reserved under our 2010 ESPP with the relevant state tax authorities. We continue to carry a liability of \$0.3 million on the accompanying consolidated balance sheet as of January 28, 2017 and will continue to do so until such settlement has been reached with the aforementioned authorities. We believe this liability recorded in accrued compensation and related benefits is sufficient to cover all the expenses.

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)***Valuation of stock-based compensation*

The fair value of RSA and RSU awards is based on the quoted market price of the underlying stock at the date of grant. The fair value of stock option and employee stock purchase plan right awards is estimated at the grant date using the Black-Scholes-Merton option pricing model. The determination of fair value of stock option and employee stock purchase plan right awards on the date of grant using an option-pricing model is affected by our stock price as well as assumptions regarding a number of highly complex and subjective variables. These variables include, but are not limited to, our expected stock price volatility over the term of the awards and actual employee stock option exercise behavior.

The fair value of each stock option and employee stock purchase plan right was estimated on the date of grant using the Black-Scholes-Merton option pricing model with the following weighted-average assumptions:

<b>Stock options</b>	<b>Fiscal Years Ended</b>		
	<b>January</b>	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>	<b>31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Expected volatility	50.77 %	44.84 %	42.72 %
Risk-free interest rate	1.27 %	1.60 %	1.63 %
Expected term (in years)	5.23	5.19	5.11
Dividend yield	0 %	0 %	0 %
Weighted average fair value at grant date	\$3.14	\$ 3.64	\$ 1.80

<b>Employee stock purchase plan</b>	<b>Fiscal Years Ended</b>		
	<b>January</b>	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>	<b>31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Expected volatility	57.19 %	77.90 %	50.05 %
Risk-free interest rate	0.50 %	0.44 %	0.08 %

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Expected term (in years)	0.50	0.46	0.50
Dividend yield	0 %	0 %	0 %
Weighted average fair value at grant date	\$1.91	\$ 2.24	\$ 1.67

The computation of the expected volatility assumptions used in the Black-Scholes-Merton calculations for new stock option and employee stock purchase plan right awards is based on the historical volatility of our stock price, measured over a period equal to the expected term of the grants or purchase rights. The risk-free interest rate is based on the yield available on U.S. Treasury Strips with an equivalent remaining term. The expected term of stock options represents the weighted-average period that the stock options are expected to remain outstanding and was determined based on historical experience of similar awards, giving consideration to the contractual terms of the stock-based payment awards and vesting schedules. The expected term of employee stock purchase rights is the period of time remaining in the current offering period. The dividend yield assumption is based on our history of not paying dividends and assumption that we will not pay dividends in the future. Stock-based compensation expense related to purchases of common stock under the 2015 ESPP and 2010 ESPP for fiscal 2017, 2016 and 2015 was \$1.0 million, \$0.2 million and \$0.8 million, respectively.

The following table sets forth the total stock-based compensation expense that is included in each functional line item in the consolidated statements of operations (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January</b>	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>	<b>31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Cost of revenue	\$294	\$ 227	\$ 190
Research and development	3,452	3,241	3,147
Sales and marketing	1,197	1,151	979
General and administrative	1,562	1,940	1,963
<b>Total stock-based compensation</b>	<b>\$6,505</b>	<b>\$ 6,559</b>	<b>\$ 6,279</b>

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)***Shares reserved for future issuance*

We had the following shares of common stock reserved for future issuance upon exercise or issuance of equity instruments at January 28, 2017:

	<b>Shares</b>
	<b>Reserved</b>
Authorized for future grants under stock incentive plans	4,836,384
Stock options outstanding	2,665,571
Restricted stock units outstanding	1,638,618
<b>Shares reserved for future issuance</b>	<b>9,140,573</b>

*401(k) tax deferred savings plan*

We maintain a 401(k) tax deferred savings plan for the benefit of qualified employees who are U.S. based. Under the 401(k) tax deferred savings plan, U.S. based employees may elect to reduce their current annual taxable compensation up to the statutorily prescribed limit, which is \$18,000 in calendar year 2016. Employees age 50 or over may elect to contribute an additional \$6,000. We made matching contributions to the 401(k) tax deferred savings plan during fiscal 2017 and 2016 of \$0.6 million and \$0.3 million, respectively, and made no matching contributions in fiscal 2015.

*Endowment insurance pension plan*

Related to our acquisition of our DTV business in May 2012, we added operations in Shanghai, China. It is required by the “Procedures of Shanghai Municipality on Endowment Insurance for Town Employees” to provide pension insurance for Shanghai employees. This mandatory plan is managed by the local authority. Under the current plan, an employee will contribute 8.0% of the annual base to the plan and the employer will match 20% of the annual base. From April 2016 to March 2017, the annual base is capped at RMB 17,817 per employee. During fiscal 2017, 2016 and 2015, we made matching contributions of \$2.3 million, \$2.3 million and \$2.1 million, respectively.

*Retirement pension plans*

We maintain retirement pension plans for the benefit of qualified employees in Denmark, Taiwan, The Netherlands, and Germany. We made matching contributions under these plans of \$0.7 million for each of fiscal 2017, 2016 and 2015.

*Severance plan*

We maintain a severance plan for several Israeli employees pursuant to Israel's Severance Pay Law based on the most recent salary of the employees multiplied by the number of years of employment. Upon termination of employment, employees are entitled to one month salary for each year of employment or a portion thereof. As of January 28, 2017, we have an accrued severance liability of \$0.8 million offset by \$0.7 million of severance employee funds. We made contributions of less than \$0.1 million per year related to this obligation during fiscal 2017, 2016 and 2015.

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****13. Income taxes**

Income (loss) before income taxes consists of the following (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January 28,  2017</b>	<b>January 30,  2016</b>	<b>January 31,  2015</b>
United States	\$(13,465)	\$(23,129)	\$1,641
International	1,797	30,478	(18,349)
<b>Total</b>	<b>\$(11,668)</b>	<b>\$7,349</b>	<b>\$(16,708)</b>

The federal, state and foreign income tax provision (benefit) is summarized as follows (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January 28,  2017</b>	<b>January 30,  2016</b>	<b>January 31,  2015</b>
<b>Current</b>			
Federal	\$290	\$(150 )	\$(586 )
State	111	45	73
Foreign	5,990	4,915	5,164
<b>Total current</b>	<b>6,391</b>	<b>4,810</b>	<b>4,651</b>
<b>Deferred:</b>			
Federal	-	(290 )	-
Foreign	256	2,671	342
<b>Total deferred</b>	<b>256</b>	<b>2,381</b>	<b>342</b>
<b>Provision for income taxes</b>	<b>\$6,647</b>	<b>\$7,191</b>	<b>\$4,993</b>

The tax effects of significant items comprising our deferred tax assets and liabilities are as follows (in thousands):



	<b>January 28,</b>	<b>January 30,</b>
	<b>2017</b>	<b>2016</b>
<b>Deferred tax assets:</b>		
Net operating loss	\$11,196	\$7,593
Investment impairment	545	1,131
Allowance, reserve and other	4,552	4,039
Depreciation	212	419
Tax credits	14,790	12,194
Stock-based compensation	6,636	8,420
<b>Total gross deferred tax assets</b>	<b>37,931</b>	<b>33,796</b>
Valuation allowance	(35,073)	(31,529)
<b>Total deferred tax assets</b>	<b>2,858</b>	<b>2,267</b>
<b>Deferred tax liabilities:</b>		
Unrealized foreign exchange loss	(594 )	(60 )
Acquired intangibles and other	(1,926 )	(1,613 )
<b>Net deferred tax assets</b>	<b>\$338</b>	<b>\$594</b>

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

We must regularly assess the likelihood that future taxable income levels will be sufficient to ultimately realize the tax benefits of our deferred tax assets. During the third quarter of fiscal 2013, we concluded it was necessary to establish a valuation allowance for certain deferred tax assets (“DTA”) related to Federal taxes in the United States. Due to the history of losses in the United States, it was determined that it is more likely than not that certain Federal DTAs would not be recognized. As of January 28, 2017, we continue to maintain a full valuation allowance against our US Federal and California deferred tax assets and a partial valuation allowance against foreign net operating losses. However, as a result of our continued efforts to reduce expenses and improve efficiency, competitiveness and profitability, it is possible that our net deferred tax assets will become realizable and a valuation allowance may no longer be needed. The valuation allowance increased by approximately \$3.5 million in fiscal 2017.

As of January 28, 2017, net operating loss carry forwards amounted to approximately \$45.8 million and \$38.3 million for federal and California tax purposes, respectively, which will expire in fiscal 2019 through 2037. Of the total net operating loss carryover, the tax effect of \$16.1 million federal and \$3.4 million state losses will be recorded to additional paid-in capital when utilized in the future. We also had federal and state research credit carryovers of \$20.8 million and \$21.5 million, respectively. Federal research credits will start expiring from fiscal 2019. The state research credit has no expiration. Of the total research credit carryover, the tax effect of \$12.0 million federal and \$2.3 million state credits will be recorded to additional paid-in capital when utilized in the future. We also have \$12.1 million of foreign operating loss carry forwards through the acquisition of a foreign operation.

Net operating losses and tax credit carry forwards as of January 28, 2017 are as follows (in thousands):

	<b>Amount</b>	<b>Range of Expiration Years</b>
Net operating losses, federal	\$45,783	Through 2037
Net operating losses, state	38,281	Through 2037
Net operating losses, foreign	12,133	Indefinite
Tax credits, federal	23,321	Through 2037
Tax credits, state	\$21,532	Indefinite

Current federal and California tax laws include substantial restrictions on the utilization of net operating losses and tax credits in the event of an “ownership change” of a corporation. Accordingly, our ability to utilize net operating loss and tax credit carryforwards may be limited as a result of such ownership changes. Such a limitation could result in the

expiration of carryforwards before they are utilized.

The effective tax rate of our provision (benefit) for income taxes differs from the federal statutory rate as follows (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January 28,</b>	<b>January 30,</b>	<b>January 31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Computed at federal statutory rate of 35%	\$(4,084)	\$2,572	\$(5,848 )
State taxes provision, net of federal benefit	72	29	47
Uncertain tax positions	4,401	3,778	(347 )
Difference between statutory rate and foreign effective tax rate	1,399	(1,474 )	12,252
Stock-based compensation expense	423	(17 )	819
Change in federal valuation allowance	5,542	4,098	(835 )
Tax credits	(1,171)	(1,708 )	(1,563 )
Other	65	(87 )	468
<b>Total</b>	<b>\$6,647</b>	<b>\$7,191</b>	<b>\$4,993</b>

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

Included in the balance of unrecognized tax benefits as of January 28, 2017 are \$14.9 million of tax benefits that, if recognized, would reduce our effective tax rate. The remaining amount would be offset by the reversal of related deferred tax assets on which a valuation allowance is placed. A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January</b>	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>	<b>31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Beginning balance	\$22,172	\$15,504	\$17,439
Additions based on tax positions related to the current year	5,549	5,449	1,373
Additions for tax positions of prior years	1,900	1,527	718
Reductions for tax positions of prior year	-	-	(61 )
Lapse of statute of limitation	(1,436 )	(308 )	(3,965 )
Ending balance	\$28,185	\$22,172	\$15,504

We have adopted the accounting policy that interest and penalties recognized are classified as part of our income taxes. In fiscal 2017, we increased our accrual of such interest and penalties expense by \$0.5 million, whereas we increased our accrual by \$0.1 million in fiscal 2016. As of January 28, 2017 and January 30, 2016, the balance of such accrued interest and penalties was \$0.8 million and \$0.3 million, respectively. We believe that it is reasonably possible that a decrease of up to \$0.1 million in unrecognized tax benefits related to U.S. and foreign exposures may be necessary within the coming year.

Our operations are subject to income and transaction taxes in the United States and in multiple foreign jurisdictions. Significant estimates and judgments are required in determining our worldwide provision for income taxes. Some of these estimates are based on interpretations of existing tax laws or regulations. The ultimate amount of tax liability may be uncertain as a result.

Our tax filings for the fiscal years from 1991 to 2017 remain open in various taxing jurisdictions.

U.S. income taxes and foreign withholding taxes associated with the repatriation of earnings of foreign subsidiaries were not provided for on a cumulative total of \$78.9 million of undistributed earnings of certain foreign subsidiaries as of the end of fiscal 2017. The Company intends to reinvest these earnings indefinitely in its foreign subsidiaries. If these earnings were distributed to the United States in the form of dividends or otherwise, the Company would be subject to additional U.S. income taxes (subject to an adjustment for foreign tax credits) and foreign withholding taxes. Determination of the amount of unrecognized deferred income tax liability related to these earnings is not practicable.

Our acquired Israeli subsidiary, Sigma Designs Israel S.D.I. (formerly known as CopperGate Communications Ltd.), was granted “Approved Enterprise” status under the Law for the Encouragement of Capital Investments, 1959 (the “Law”) in 2005, which became effective in fiscal 2008, and elected 2009 (which became effective in fiscal 2014), and 2011 as election years of the “Benefited Enterprise” under the Law. In fiscal 2017, the Company activated its second Beneficiary Enterprise commencing in fiscal 2015. Sigma Designs Israel’s taxable income allocated to each enterprise is tax-exempt for a period of two years commencing with the year it first earns taxable income, and subject to corporate taxes at the reduced rate for an additional period of five to eight years. The period of tax benefits, as detailed above, is limited to the earlier of 12 years from the “operational year” of the “Benefited Enterprise” or 14 years from the year the grant of “Approved Enterprise” status. The impact of this tax holiday was to increase net income by approximately \$2.9 million or \$0.08 per diluted share in fiscal 2017, \$4.1 million or \$0.11 per diluted share in fiscal 2016, and \$6.1 million or \$0.18 per diluted share in fiscal 2015.

**SIGMA DESIGNS, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**14. Segment and geographical information**

Operating segments are defined as components of an enterprise for which separate financial information is available and evaluated regularly by the chief operating decision-maker in deciding how to allocate resources and in assessing performance. We are organized as, and operate in, one reportable segment. Our operating segment consists of our geographically based entities in the United States, Israel and Singapore. Our chief operating decision-maker reviews consolidated financial information, accompanied by information about revenue by product group, target market and geographic region. We do not assess the performance of our geographic regions on other measures of income, expense or net income.

Our net revenue is derived principally from the sales of integrated SoC solutions, which we sell across both of our target markets. Connected Smart TV Platforms consist of all products that are sold into digital televisions as well as other adjacent markets using chipset products that are designed for video post-processing, products delivering IP streaming video, including hybrid versions of these products, and communication devices that use a standard protocol to connect equipment inside the home and stream IP-based video and audio, VoIP, or data through wired or wireless connectivity.

IoT Devices consist of both smart home applications (including gateways and automated consumer devices) and mobile IoT applications (primarily tracking tags). Our smart home product line is marketed under our Z-Wave brand of wireless chips, modules and Z-Wave mesh networking protocol. During fiscal 2017, we derived a portion of our IoT Devices revenue from the achievement of a milestone under a development agreement in connection with our acquisition of Bretelon in the amount of \$5.0 million.

Our License and other markets include revenue derived from the licensing of our technology to third parties and other sources. Revenue derived from other sources includes software development kits, and engineering support services for hardware and software; that revenue is not significant as it represented 0.1%, zero and 3% of our total net revenue in fiscal 2017, 2016 and 2015, respectively.

Starting with the first quarter of fiscal 2017, we have combined certain target markets that we previously reported separately commensurate with changes taking effect in our industry as a whole. We combined our Smart TV, Media Connectivity and Set-top Box markets into one target market, which we now refer to as the Connected Smart TV Platforms target market. This target market is intended to include all of our products sold into or supporting the digital television experience including products designed for video-post processing, delivering of IP streaming video, audio,

VoIP, or data and the equipment intended to connect these various home entertainment products. We have historically and continue to operate under the belief that the Smart TV, Set-top Box and Media Connectivity products complement their respective value propositions to the markets into which we sell. This combination is intended to present this value proposition as a holistic solution or platform for the anticipated convergence of IP-video, audio and data delivery across any device within the connected home. All previously reported amounts in prior periods have been adjusted retrospectively to reflect our target market changes. Our IoT Devices market product categorizations remain unchanged, and beginning in the fourth quarter of fiscal 2016 includes products and services we now sell as a result of our acquisition of Bretelon.

The following tables set forth net revenue attributable to each target market (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January 28,</b>	<b>January 30,</b>	<b>January 31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Connected Smart TV Platforms	\$175,085	\$180,360	\$151,775
IoT Devices	45,159	46,792	30,667
License and other	300	98	5,871
<b>Net revenue</b>	<b>\$220,544</b>	<b>\$227,250</b>	<b>\$188,313</b>

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The following table sets forth net revenue for each geographic region based on the ship-to location of customers (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January</b>	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>	<b>31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
Asia	\$180,104	\$172,773	\$152,571
North America	32,732	42,335	20,746
Europe	7,692	10,292	12,012
Other Regions	16	1,850	2,984
<b>Net revenue</b>	<b>\$220,544</b>	<b>\$227,250</b>	<b>\$188,313</b>

The following table sets forth net revenue to each significant country based on the ship-to location of customers (in thousands):

	<b>Fiscal Years Ended</b>		
	<b>January</b>	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>	<b>31,</b>
	<b>2017</b>	<b>2016</b>	<b>2015</b>
China, including Hong Kong	\$110,195	\$93,560	\$70,513
Taiwan	51,093	50,301	24,346
United States	32,367	41,781	20,587
Thailand	9,487	13,532	40,703
Rest of the world	17,402	28,076	32,164
<b>Net revenue</b>	<b>\$220,544</b>	<b>\$227,250</b>	<b>\$188,313</b>

Our long-lived assets consist primarily of our software, equipment, and leasehold improvements. The following table sets forth our long-lived assets by geographic region based on the location of the asset (in thousands):

	<b>Fiscal Years</b>	
	<b>Ended</b>	
	<b>January</b>	<b>January</b>
	<b>28,</b>	<b>30,</b>



	2017	2016
United States	\$ 11,923	\$ 5,885
Singapore	3,917	5,388
All other countries	2,683	2,813
<b>Total long-lived assets</b>	<b>\$ 18,523</b>	<b>\$ 14,086</b>

The following table sets forth the major direct customers that accounted for 10% or more of our net revenue:

	Fiscal Years Ended		
	January 28, 2017	January 30, 2016	January 31, 2015
Sunjet Components Corps	20%	16%	*
Silicon Application	13%	*	*
Arris Global	14%	*	*
Benchmark Electronics	*	*	13%

\*Accounted for less than 10% of our net revenue.

Net revenue from each of the aforementioned major direct customers was primarily generated through the Connected Smart TV Platforms market.

**SIGMA DESIGNS, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****15. Collaborative Arrangement**

In September 2016, we entered into a joint collaboration agreement with Telechips Inc. (“Telechips”) to develop and commercialize a set-top box microprocessor SoC solution. Martin Manniche, a member of our board of directors, also serves on the board of directors of Telechips. Telechips is responsible for the manufacture of the products and is also the principal in the end customer product sales. Telechips’ wholly-owned subsidiary has the primary responsibility for order fulfillment, collection of receivables and handling of sales returns in all territories. We receive a marketing service fee in an amount equal to 50% of the net profit from the collaboration agreement, which is included in net revenue. The marketing service fee is recognized when products are shipped and all risks and rewards of ownership have been transferred to third-party customers, minus the cost of production and related operating expenses incurred by Telechips. Research and development costs are shared equally and cost reimbursement to Telechips is recognized as incurred and included in research and development expenses. On February 6, 2017, upfront consideration paid by us to Telechips of \$2.5 million for a mask set was capitalized and will be amortized over a three-year period. The agreement will continue until the later of July 31, 2018 or cessation of the sale of products. The term may be extended by mutual agreement of both parties.

Net loss from this collaborative arrangement was \$0.3 million in fiscal 2017. There was no research and development expense recognized nor reimbursement received in fiscal 2017.

**16. Quarterly financial information (unaudited)**

The following table presents unaudited quarterly financial information for each of our most recent eight fiscal quarters (in thousands, except per share amounts):

	<b>Fiscal Quarters Ended</b>							
	<b>January 28, 2017</b>	<b>October 29, 2016</b>	<b>July 30, 2016</b>	<b>April 30, 2016</b>	<b>January 30, 2016</b>	<b>October 31, 2015</b>	<b>August 1, 2015</b>	<b>May 2, 2015</b>
Net revenue	\$42,724	\$62,729	\$61,316	\$53,775	\$51,450	\$61,581	\$58,307	\$55,912
Gross profit	21,401	30,995	29,582	24,001	24,501	30,787	28,524	29,348

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(Loss) income from operations	(7,163 )	2,169	(313 )	(6,015 )	(5,237 )	1,464	1,208	1,410
Net (loss) income	(8,716 )	221	(1,722 )	(8,098 )	(6,191 )	6,435	296	(382 )
Basic net (loss) income per share	\$(0.23 )	\$0.01	\$(0.05 )	\$(0.22 )	\$(0.17 )	\$0.18	\$0.01	\$(0.01 )
Diluted net (loss) income per share	\$(0.23 )	\$0.01	\$(0.05 )	\$(0.22 )	\$(0.17 )	\$0.17	\$0.01	\$(0.01 )

**ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

None.

**ITEM 9A. CONTROLS AND PROCEDURES**

**Evaluation of Disclosure Controls and Procedures**

We are committed to maintaining disclosure controls and procedures designed to ensure that information required to be disclosed in our periodic reports filed under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, we recognize that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and we necessarily are required to apply our judgment in evaluating the cost-benefit relationship of possible controls and procedures and implementing controls and procedures.

As of January 28, 2017, the end of the period covered by this Annual Report on Form 10-K, we have, with the participation of our Chief Executive Officer and Chief Financial Officer evaluated the effectiveness of the design and effectiveness of our disclosure controls and procedures, as such terms are defined in Rule 13a-15(e) and Rule 15d-15(e) under the Securities and Exchange Act of 1934, as amended (the "Exchange Act"). Based on this evaluation, we have concluded that our disclosure controls and procedures were effective as of January 28, 2017.

**Management's Report on Internal Control over Financial Reporting**

We are responsible for establishing and maintaining adequate internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States. All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation and may not prevent or detect misstatements. Projections of any evaluation of

effectiveness of internal control over financial reporting to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

We, including our Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of our internal control over financial reporting as of January 28, 2017. In making this assessment, we used the criteria set forth in *Internal Control-Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, we concluded that our internal control over financial reporting was effective as of January 28, 2017.

Armanino LLP, the independent registered public accounting firm that audited our consolidated financial statements included in this Annual Report on Form 10-K, has also assessed the effectiveness of internal control over financial reporting as of January 28, 2017. Their attestation report is included herein under Part II, Item 8.

### **Changes in Internal Control over Financial Reporting**

During the fourth quarter ended January 28, 2017, there were no changes in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

In May 2013, the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”) issued an update on internal control, *2013 Internal Control – Integrated Framework*. This update provides changes from the pre-established guidance within the 1992 internal control framework primarily encompassing the following: (i) codification of principles that support the five components of internal control, (ii) clarification of the role of objective-setting in internal control, (iii) enhanced focus on technology and related control structures, (iv) enhanced information on governance conceptual frameworks, (v) expansion of the reporting categories of objectives, (vi) enhanced anti-fraud expectations and (vii) increased focus on non-financial reporting objectives. We adopted the *2013 Internal Control – Integrated Framework* during fiscal 2015 in conducting our assessment of internal control over financial reporting. The adoption of said framework did not materially impact our internal control over financial reporting or the aforementioned conclusions regarding its effectiveness.

**ITEM 9B. OTHER MATTERS**

None.

**PART III**

**ITEM 10. DIRECTORS, EXECUTIVE OFFICERS OF THE REGISTRANT AND CORPORATE GOVERNANCE**

The information required by this item is incorporated by reference from the information in the sections captioned “Election of Directors-Nominees,” “Section 16(a) Beneficial Ownership Reporting Compliance,” “Election of Directors-Code of Ethics,” and “Election of Directors-Committees of the Board,” which will appear in the 2017 Proxy Statement we will deliver to our shareholders in connection with our Annual Meeting of Shareholders or in an amendment to this Form 10-K to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year covered by this report on Form 10-K. Certain information required by this item concerning executive officers is set forth in Part I of this Report under the caption “Executive Officers and Key Employees” and is incorporated herein by reference.

**ITEM 11. EXECUTIVE COMPENSATION**

The information required by this item is incorporated by reference from the information in the sections captioned “Executive Compensation,” and “Election of Directors-Fiscal 2017 Director Compensation,” which will appear in the 2017 Proxy Statement we will deliver to our shareholders in connection with our Annual Meeting of Shareholders or in an amendment to this Form 10-K to be filed with the Securities and Exchange within 120 days after the close of the fiscal year covered by this report on Form 10-K.

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED SHAREHOLDER MATTERS**

The information required by this item is incorporated by reference from the sections captioned “Security Ownership of Certain Beneficial Owners and Management,” and “Equity Compensation Plan Information,” which will appear in the 2017 Proxy Statement we will deliver to our shareholders in connection with our Annual Meeting of Shareholders or

in an amendment to this Form 10-K to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year covered by this report on Form 10-K.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE**

The information required by this item is incorporated by reference from the sections captioned “Election of Directors-Certain Relationships and Related Transactions,” and “Election of Directors-Corporate Governance and Other Matters,” which will appear in the 2017 Proxy Statement we will deliver to our shareholders in connection with our Annual Meeting of Shareholders or in an amendment to this Form 10-K to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year covered by this report on Form 10-K.

**ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES**

The information required by this item is incorporated by reference from the sections captioned “Report of the Audit Committee” and “Ratification of Selection of Independent Auditors,” which will appear in the 2017 Proxy Statement we will deliver to our shareholders in connection with our Annual Meeting of Shareholders or in an amendment to this Form 10-K to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year covered by this report on Form 10-K.

## PART IV

### ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this Annual Report on Form 10-K:

#### 1. Consolidated Financial Statements

<b>Financial Statements</b>	<b>Page</b>
Report of Independent Registered Public Accounting Firm	50
Consolidated Balance Sheets at January 28, 2017 and January 30, 2016	51
Consolidated Statements of Operations for the Years Ended January 28, 2017, January 30, 2016 and January 31, 2015	52
Consolidated Statements of Comprehensive Loss for the Years Ended January 28, 2017, January 30, 2016 and January 31, 2015	52
Consolidated Statements of Shareholders' Equity for the Years Ended January 28, 2017, January 30, 2016 and January 31, 2015	53
Consolidated Statements of Cash Flows for the Years Ended January 28, 2017, January 30, 2016 and January 31, 2015	54
Notes to Consolidated Financial Statements	55

#### 2. Consolidated Financial Statements Schedules

Schedule II—Valuation and Qualifying Accounts and Reserves<sup>89</sup>

All other schedules have been omitted as they are not required, not applicable or the required information is otherwise included.

(b) Exhibits:

The exhibits listed on the accompanying index to exhibits immediately following the financial statement schedules are incorporated by reference into this Annual Report on Form 10-K.





## SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Fremont, State of California, on the 30<sup>th</sup> day of March, 2017.

### SIGMA DESIGNS, INC.

By: /s/ Think Q. Tran

**Think Q. Tran**

**President and Chief Executive Officer**

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Think Q. Tran and Elias N. Nader, and each of them, jointly and severally, his true and lawful attorneys-in-fact, each with full power of substitution and resubstitution, for him in any and all capacities, to sign any or all amendments to this Annual Report on Form 10-K, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do if personally present, hereby ratifying and confirming all that each said attorney-in-fact and agent, or his or her substitute or substitutes or any of them, may lawfully do or cause to be done by virtue hereof.

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES ACT OF 1934, THIS ANNUAL REPORT ON FORM 10-K HAS BEEN SIGNED BY THE FOLLOWING PERSONS ON BEHALF OF THE OF THE REGISTRANT AND IN THE CAPACITIES AND ON THE DATES INDICATED:

<b>Signature</b>	<b>Title</b>	<b>Date</b>
/s/ Think Q. Tran	President, Chief Executive Officer and	March 30, 2017

<b>Think Q. Tran</b>	Director (Principal Executive Officer)	
/s/ Elias N. Nader	Chief Financial Officer and Secretary (Principal Financial and Accounting Officer)	March 30, 2017
<b>Elias N. Nader</b>		
/s/ J. Michael Dodson	Lead Independent Director	March 30, 2017
<b>J. Michael Dodson</b>		
/s/ Martin Manniche	Director	March 30, 2017
<b>Martin Manniche</b>		
/s/ Pete Thompson	Director	March 30, 2017
<b>Pete Thompson</b>		

**SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS AND RESERVES**

<b>Classification</b>	<b>Balance Beginning of Period</b>	<b>Additions: Provision for (Recovery of)</b>	<b>Deductions: (Write-offs) Recoveries of</b>	<b>Balance End of Period</b>
Allowance for returns, doubtful accounts and discounts:	(in thousands)			
Fiscal Years				
2015	\$300	\$ 1,257	\$ (55	) \$ 1,502
2016	\$1,502	\$ 692	\$ (192	) \$ 2,002
2017	\$2,002	\$ (372	) \$ -	\$ 1,630

**INDEX TO EXHIBITS**

<b>Exhibit Number</b>	<b>Description</b>	<b>Filed Herewith or Incorporated Herein by Reference to</b>
3.1	Second Restated Articles of Incorporation.	Incorporated by reference to exhibit filed with the Registration Statement on Form S-1 (No. 33-17789) filed October 8, 1987, Amendment No. 1 thereto filed June 9, 1988 and Amendment No. 2 thereto filed June 14, 1988, which Registration Statement became effective June 14, 1988.
3.2	Certificate of Amendment to the Second Restated Articles of Incorporation dated June 22, 2001.	Incorporated by reference to exhibit 3.1 filed with the Registration Statement on Form S-8 (No. 333-64234) filed on June 29, 2001.
3.3	Amended and Restated Bylaws of Sigma.	Incorporated by reference to exhibit 3.1 filed with the Current Report on Form 8-K on August 3, 2012.
3.4	Certificate of Determination of Preferences of Series A Preferred Stock dated June 13, 1997.	Incorporated by reference to exhibit 3.3 filed with the Registrant's Form S-1 filed on September 14, 2007.
3.5	Certificate of Determination of Preferences of Series B Preferred Stock dated January 30, 1998.	Incorporated by reference to exhibit 3.4 filed with the Registrant's Form S-1 filed on September 14, 2007.
3.6	Certificate of Determination of Preferences of Series C Preferred Stock dated January 20, 1999.	Incorporated by reference to exhibit 3.5 filed with the Registrant's Form S-1 filed on September 14, 2007.
3.7	Certificate of Amendment to the Second Restated Articles of Incorporation dated January 28, 2008.	Incorporated by reference to exhibit 3.7 filed with the Annual Report on Form 10-K filed on April 2, 2008.
3.8	Amendment to By-Laws dated August 20, 2015.	Incorporated by reference to exhibit 3.1 filed with the Current Report on Form 8-K on July 16, 2015.
10.3*	2001 Employee Stock Option Plan.	Incorporated by reference to exhibit 4.1 filed with the Registration Statement on Form S-8 (333-64234) filed on June 29, 2001.
10.4	Lease Agreement dated December 27, 2014 by and between Sigma Designs, Inc. and PLDSPE LLC.	Incorporated by reference to exhibit 10.1 filed with the Current Report on Form 8-K filed on December 31, 2014.

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- |       |   |  |
|-------|---|--|
| 10.5  | Industrial Lease by and between AMB Property, L.P. and Sigma dated February 22, 2007.                                       | Incorporated by reference to exhibit 10.15 filed with the Annual Report on Form 10-K for the fiscal year ended February 3, 2007. |
| 10.6  | First Amendment to Lease Agreement entered into as of October 8, 2012 by and between Prologis, L.P. and Sigma Designs, Inc. | Incorporated by reference to exhibit 10.1 filed with the Current Report on Form 8-K filed on October 12, 2012.                   |
| 10.7* | Sigma Designs 2010 Employee Stock Purchase Plan.  | Incorporated by reference to exhibit 10.1 filed with the Current Report on Form 8-K filed on July 13, 2011.                      |
| 10.8* | Amended and Restated 2009 Stock Incentive Plan and forms of agreements thereto.   | Incorporated by reference to exhibit 10.1 filed with the Current Report on Form 8-K filed on July 14, 2011.                      |
| 10.9* | CopperGate Communications Ltd. 2003 Share Option Plan.  | Incorporated by reference to exhibit 99.1 filed with the Registration Statement on Form S-8 filed on November 16, 2009.          |
| 10.11 | Form of Director and Officer Indemnification Agreement.   | Incorporated by reference to exhibit 10.2 filed with the Current Report on Form 8-K filed on August 3, 2012.                     |

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10.12*	Sigma Designs 2015 Employee Stock Purchase Plan.	Incorporated by reference to exhibit 10.1 filed with the Current Report on Form 8-K on August 24, 2015.
10.13*	Sigma Designs 2015 Stock Incentive Plan.	Incorporated by reference to exhibit 10.2 filed with the Current Report on Form 8-K on August 24, 2015.
10.14*	Form of Executive Severance Agreement.	Incorporated by reference to exhibit 10.1 filed with the Current Report on Form 8-K on July 16, 2015.
21.1	Subsidiaries of the Registrant.	Filed herewith.
23.1	Consent of Independent Registered Public Accounting Firm (Armanino LLP).	Filed herewith.
24.1	Power of Attorney (contained in the signature page to this Annual Report on Form 10-K).	Filed herewith.
31.1	Certification of the President and Chief Executive Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a).	Filed herewith.
31.2	Certification of the Chief Financial Officer and Secretary pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a).	Filed herewith.
32.1**	Certificate of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Filed herewith.
32.2**	Certificate of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Filed herewith.
101.INS	XBRL Instance.	
101.SCH	XBRL Taxonomy Extension Schema.	
101.CAL	XBRL Taxonomy Extension Calculation.	
101.DEF	XBRL Taxonomy Extension Definition.	
101.LAB	XBRL Taxonomy Extension Labels.	
101.PRE	XBRL Taxonomy Extension Presentation.	

\* Indicates management contract or compensatory plan or arrangement.

In accordance with Item 601(b)(32)(ii) of Regulation S-K and SEC Release No. 34-47986, the certifications

\*\*furnished in Exhibits 32.1 and 32.2 hereto are deemed to accompany this Form 10-K and will not be deemed "filed" for purposes of Section 18 of the Exchange Act.