UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

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

For the Fiscal Year Ended June 29, 2019

Or

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

For the transition period from _______ to _______

Commission File Number 000-49602

SYNAPTICS INCORPORATED

(Exact name of registrant as specified in its charter)

Delaware	**77-0118518**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
1251 McKay Drive San Jose, California	**95131**
(Address of principal executive offices)	**(Zip Code)**

(408) 904-1100
Registrant's telephone number, including area code

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, par value $.001 per share	**SYNA**	**The NASDAQ Global Select Market**

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

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

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

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

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

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

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

The aggregate market value of Common Stock held by nonaffiliates of the registrant (22,178,002 shares), based on the closing price of the registrant’s Common Stock as reported on the NASDAQ Global Select Market on December 28, 2018 of $37.14, was $823,690,994. For purposes of this computation, all officers, directors, and 10% beneficial owners of the registrant are deemed to be affiliates. Such determination should not be deemed to be an admission that such officers, directors, or 10% beneficial owners are, in fact, affiliates of the registrant.

As of August 19, 2019, there were outstanding 32,910,891 shares of the registrant's Common Stock, par value $.001 per share.

Documents Incorporated by Reference

Portions of the registrant's definitive Proxy Statement for the 2019 Annual Meeting of Stockholders are incorporated by reference into Part III of this Form 10-K.

SYNAPTICS INCORPORATED
ANNUAL REPORT ON FORM 10-K
FISCAL 2019

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Statement Regarding Forward-Looking Statements

This report on Form 10-K for the year ended June 29, 2019 contains forward-looking statements that are subject to the safe harbors created under the Securities Act of 1933, as amended (the “Securities Act”), and the Securities Act of 1934, as amended (the “Exchange Act”). Forward-looking statements give our current expectations and projections relating to our financial condition, results of operations, plans, objectives, future performance and business, and can be identified by the fact that they do not relate strictly to historical or current facts. Such forward-looking statements may include words such as “expect,” “anticipate,” “intend,” “believe,” “estimate,” “plan,” “target,” “strategy,” “continue,” “may,” “will,” “should,” variations of such words, or other words and terms of similar meaning. All forward-looking statements reflect our best judgment and are based on several factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control. Such factors include, but are not limited to, the risks as identified in the “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business” sections in this report on Form 10-K, and other risks as identified from time to time in our Securities and Exchange Commission reports. Forward-looking statements are based on information available to us on the date hereof, and we do not have, and expressly disclaim, any obligation to publicly release any updates or any changes in our expectations, or any change in events, conditions, or circumstances on which any forward-looking statement is based. Our actual results and the timing of certain events could differ materially from the forward-looking statements. These forward-looking statements do not reflect the potential impact of any mergers, acquisitions, or other business combinations that had not been completed as of the date of this filing.

Statements made in this report, unless the context otherwise requires, include the use of the terms “us,” “we,” “our,” the “Company” and “Synaptics” to refer to Synaptics Incorporated and its consolidated subsidiaries.

PART I

ITEM 1. BUSINESS

Overview

We are a leading worldwide developer and supplier of custom-designed human interface semiconductor product solutions that enable people to interact more easily and intuitively with a wide variety of mobile computing, communications, entertainment, and other electronic devices. We currently generate revenue from the markets for smartphones, tablets, personal computer, or PC, products, Internet of Things, or IoT, products and other select electronic devices, including devices in automobiles. Every solution we deliver either contains or consists of our touch-, display driver-, audio and voice-, imaging-, video- or fingerprint authentication-based semiconductor solutions, which includes our chip, firmware and software, including customer-specific firmware and software.

We are a market leader in providing human interface product solutions to our target markets. Our original equipment manufacturer, or OEM, customers include most of the world's largest OEMs for smartphones, tier one PC OEMs, and many large OEMs for voice, speech and video products. We generally supply our human interface product solutions to our OEM customers through their contract manufacturers, which take delivery of our products and pay us directly for such products.

Our website is located at www.synaptics.com. Through our website, we make available, free of charge, all our Securities and Exchange Commission, or SEC, filings, including our annual reports on Form 10-K, our proxy statements, our quarterly reports on Form 10-Q, and our current reports on Form 8-K, as well as Form 3, Form 4, and Form 5 Reports for our directors, officers, and principal stockholders, together with amendments to those reports filed or furnished pursuant to Sections 13(a), 15(d), or 16 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. These reports are available on our website promptly after their electronic filing with the SEC. Our website also includes corporate governance information, including our Code of Conduct, our Code of Ethics for the Chief Executive Officer and Senior Financial Officers, and our Board Committee Charters. The contents of our website are not incorporated into or deemed to be a part of this report.

We were initially incorporated in California in 1986 and were re-incorporated in Delaware in 2002. Our fiscal year is the 52- or 53-week period ending on the last Saturday in June. The fiscal years presented in this report were the 52-week periods ended June 29, 2019 and June 24, 2017, and a 53-week period ended June 30, 2018. For ease of presentation, this report labels the reporting periods as ending on calendar month- or year-end dates as of and for all periods presented, unless otherwise indicated.

Mobile Product Applications Markets

We believe our intellectual property portfolio, engineering know-how, systems engineering experience, technological expertise, and experience in providing human interface product solutions to major OEMs of electronic devices position us to be a key technological enabler for multiple consumer electronic devices targeted to meet the mobile product applications markets, which incorporate discrete touch controller products, display driver, or DDIC, products, and touch and display driver integration, or TDDI, products. Mobile product applications include smartphones, tablets, large touchscreen applications, as well as a variety of mobile, handheld, wireless, and entertainment devices. Our array of human interface product solutions for mobile product applications are designed to enrich the interface on smartphones, tablets, and peripherals, and enable the owner to view the screen on these devices and to more easily interact with the content on these devices. We believe our existing technologies, our range of product solutions, and our emphasis on ease of use, small size, low power consumption, advanced functionality, secure access, durability, reliability, and simplified security enable us to serve multiple aspects of the markets for mobile product applications and other electronic devices.

Our human interface product solutions for mobile applications constitute a substantial percentage of our net revenue. Net revenue for our mobile product applications accounted for approximately 61%, 63%, and 82% of our net revenue for fiscal 2019, 2018, and 2017, respectively. Our ongoing success in serving these markets will depend upon the size of the smartphone portion of the overall mobile phone market; our growth in the virtual reality, or VR, display market; our ability to demonstrate to mobile product applications OEMs the advantages of our human interface product solutions in terms of performance, usability, size, simplified security, durability, power consumption, integration, and industrial design possibilities; and the success of products utilizing our human interface product solutions. In addition, our success will depend on our ability to demonstrate to mobile product applications OEMs the advantages of our DDIC and TDDI products, our flexible touchscreen and systems engineering expertise, including our ability to successfully deliver DDIC products into the Organic Light Emitting Diode, or OLED, smartphone market, and our ability to deliver touch screen products to the flexible OLED smartphone OEMs. The OLED smartphone market remains a key growth area for us. The adoption of OLED at top OEMs is accelerating in calendar year 2019, which could drive an opportunity for our OLED DDIC and touch screen products.

We expect the smartphone market to continue its trend towards greater functionality in smartphone products to meet and address the expanded needs and expectations of the consumer-oriented market. These products require a simple, durable, and intuitive human interface product solution to access their device or application, and to enable the user to view and navigate efficiently through menus and scroll through information contained in the host device. We believe we are well positioned to take advantage of this growing market based on our technology, engineering know-how, systems engineering experience, and the acceptance of our human interface product solutions by OEMs in this market.

The virtual reality, or VR, market represents growth opportunities for our display driver products and fingerprint sensor intellectual property portfolio. The VR market is expected to continue to grow, with major investors in the space including today's major players, in addition to new start-ups. Our high-performance, low power display driver technology is well suited to the demands of the VR market. The tablet and large touchscreen markets also represent a potential growth opportunity for us. Touchscreen and display drivers required for the tablet market range from basic e-book vendor solutions to multi-function solutions designed for more complex operating systems. Tablet-based capacitive touch interface devices are now offered by several leading PC and mobile phone OEMs and utilize various operating systems, including Android and Windows 10. Our engineering know-how and technological expertise with display drivers could represent an opportunity for us in this market in our fiscal 2020.

PC Product Applications Market

We provide custom human interface product solutions for navigation, cursor control, and for access to devices or applications through fingerprint recognition for many of the world's premier PC OEMs. These functions are offered as both stand-alone and integrated touch pads plus fingerprint recognition solutions. In addition to notebook applications, other PC product applications for our technology include peripherals, such as keyboards, mice, and desktop product applications. Net revenue for our human interface product solutions for PC product applications accounted for approximately 18%, 16%, and 13% of our net revenue for fiscal 2019, 2018, and 2017, respectively.

We continue to expand our available product offerings through technology development and acquisitions enabling us to increase our product content within each notebook unit. We are also applying our technologies to enable adoption of fingerprint recognition solutions in all-in-one and desktop products to broaden our market opportunities. Based on the strength of our technology and engineering know-how, we believe we are well positioned to continue to take advantage of opportunities in the PC product applications market.

IoT Applications Market

On July 25, 2017, we acquired Conexant Systems, LLC, or Conexant, a technology leader in voice and audio processing solutions for the smart home. On September 8, 2017, we acquired the assets of the multimedia solutions business of Marvell Technology Group Ltd., or Marvell, a leading provider of advanced video and audio processing applications for the smart home, or the Marvell Business Acquisition. We began reporting financial results for the IoT applications market in our consolidated financial statements in the first quarter of our fiscal 2018.

We provide system-on-chip, or SoC, solutions as well as human interface product solutions for enabling the Smarter Edge. We enable products for service provider platforms, or SPP, smart assistant solutions, over-the-top, or OTT, media consumption devices, voice driven intelligent devices, including those integrating far-field technology, personal voice products, video interface solutions which can also drive next generation virtual reality/augmented reality, or VR/AR, platforms, and optimized solutions for fax/modem and printer platforms. Our automotive solutions include over a decade of mass production experience in display drivers, including mature touch solutions adapted from our consumer business to meet automotive quality standards and pioneering fingerprint solutions for security, personalization and e-payments in vehicles. Our latest addition to our automotive portfolio is an automotive grade TDDI for amorphous silicon and low-temperature polycrystalline panels up to 4K resolution and 18-inch panels. Net revenue for our IoT product solutions accounted for approximately 21%, 21% and 5% of our net revenue for fiscal 2019, 2018 and 2017, respectively.

Within the growing consumer IoT market, we continue to expand our footprint in various devices by bringing converged video and voice technologies coupled with leading edge human interface solutions. Our deep investment in far-field voice technology, our intellectual property portfolio for video, audio and security, and our significant experience enabling Android platforms for service providers, coupled with our focus on enabling high performance, low power, and highly secure SoC solutions enable us to effectively serve our existing customers and position us to grow within the addressable market of consumer IoT devices.

Our Strategy

Our objective is to continue to enhance our position as a leading supplier of human interface product solutions for each of the target markets in which we operate, including the mobile product applications markets, the PC product applications market, and the IoT applications market. Key aspects of our strategy to achieve this objective include those set forth below.

Extend Our Technological Leadership

We plan to utilize our extensive intellectual property portfolio, engineering know-how, and technological expertise to extend the functionality of our current product solutions and offer new and innovative product solutions to customers across multiple markets. We intend to continue utilizing our technological expertise to reduce the overall size, weight, cost, and power consumption of our human interface product solutions while increasing their applications, capabilities, and performance. We plan to continue enhancing the ease of use and functionality of our solutions. We also plan to expand our research and development efforts through increased investment in our engineering activities, including ongoing enhancement of our automotive TDDI technology and OLED technology, and advancement of our audio, voice and video technologies, the hiring of key engineering personnel, and strategic acquisitions and alliances. We believe that these efforts will enable us to meet customer expectations and achieve our goal of supplying, on a timely and cost-effective basis, the most advanced, easy-to-use, functional human interface semiconductor product solutions to our target markets.

Enhance Our Position in the Smartphone, Tablet, and PC Product Application Markets

We intend to continue introducing market-leading human interface product solutions in terms of performance, power consumption, functionality, size, and ease of use for the smartphone, tablet, and PC product applications markets. We plan to continue enhancing our customers' industrial design alternatives and device functionality through innovative product development, in order to enhance and grow our position within our target markets. As the high-end market for smartphones continues the shift to OLED solutions, we intend to deliver further enhancements to our DDIC products to support that market.

Capitalize on Growth of New and Evolving Markets

We intend to capitalize on the growth of new and evolving markets, such as the smart home, VR/AR, voice enabled assistants, and wearables within the IoT market, the tablet market, ultrabook and convertible portions of the PC market, and the automotive market, brought about by the convergence of computing, communications, and entertainment devices. We intend to build upon our existing innovative and intuitive human interface semiconductor product solutions portfolio and continue to address the evolving portability, connectivity, security, and functionality requirements of these new markets. We will offer our solutions to existing and potential OEM customers to enable increased functionality, reduced size, lower cost, simplified security, enhanced industrial design features, and to enhance the user experience of our OEMs' products. We plan to utilize our existing technologies as well as aggressively pursue new technologies as new markets evolve that demand new solutions.

Emphasize and Expand Customer Relationships

We intend to emphasize and expand our strong and long-standing customer relationships and seek to build and establish successful relationships with new customers. In each market we serve, we plan to provide the most advanced human interface product solutions for our customers' products. We believe that our human interface product solutions enable our customers to deliver simplified security and a positive user experience and to differentiate their products from those of their competitors. We continually strive to enhance the competitive position of our customers by providing them with innovative, distinctive, and high-quality human interface product solutions on a timely and cost-effective basis. To do so, we work continually to improve our productivity, reduce costs, and increase the speed of delivery of our human interface product solutions. We endeavor to streamline the entire design and delivery process through our ongoing design, engineering, and production improvement efforts. We also focus on providing timely pre- and post-sales support to our customers, assisting with their efforts to develop, integrate, and manufacture their products with our solutions.

We plan to offer IoT voice, audio and video solutions, touch and display driver solutions, and fingerprint sensor solutions, as well as design tools, technical support and documentation to assist in the development of human interface designs in products such as smartphones, tablets, notebooks, PC peripherals, and other digital entertainment devices. We offer our customers a choice of our chip solutions or our custom module solutions. Our chip solution consists of our proprietary integrated circuit, firmware and software, including customer-specific firmware and software, while our custom module solution enables customers to utilize our proprietary integrated circuit together with third-party components and assembly. Touchscreen applications for mobile phones, tablets, and notebooks are primarily a chip solution. Display driver products for mobile phones and tablets, IoT products for voice, audio and video, and most automotive products are a chip solution. Fingerprint sensor products are a module solution.

Pursue Strategic Relationships and Acquisitions

We intend to develop and expand our strategic relationships to enhance our ability to offer value-added human interface product solutions to our customers, penetrate new markets, and strengthen the technological leadership of our product solutions. We also intend to evaluate the potential acquisition of companies in order to expand our technological expertise and to establish or strengthen our presence in selected target markets.

Continue Virtual Manufacturing

We plan to expand and diversify our production capacity through third-party relationships, thereby strengthening our virtual manufacturing platform. This strategy results in a scalable business model, enables us to concentrate on our core competencies of research and development and product design and engineering, and reduces our capital expenditures and working capital requirements. Our virtual manufacturing strategy allows us to maintain a variable cost model, in which we do not incur most of our manufacturing costs until our product solutions have been shipped and invoiced to our customers.

Competitive Advantages

We develop advanced human interface technologies that provide simplified security and enrich the user's experience in interacting with the user's computing, communications, and entertainment devices. We engage with our customers in the design of their custom products and offer product solutions ranging from chips, which may include customer-specific firmware, to full module solutions. Our innovative and intuitive human interface product solutions can be engineered to accommodate many diverse platforms, and our expertise in human factors and usability can be utilized to improve the features and functionality of our solutions. Our extensive array of technologies include chips, firmware, software, mechanical and electrical designs, pattern recognition, single- and multi-finger touch-sensing technologies, display driver technologies, image, voice and multimedia processing.

Our human interface products are custom engineered, total solutions for our customers, and include sensor design, module layout, chips, firmware, and software features for which we provide manufacturing and design support, and device testing. This allows us to be a one-stop supplier for complete human interface design from concept prototyping, to product development, to manufacturing, to testing and support. Through our engineering know-how and technological expertise, we provide our customers with solutions that address their individual design requirements and result in high-performance, feature-rich, and reliable interface solutions. We believe our interface solutions offer the following characteristics:

- *Ease of Use*. Our solutions offer the ease of use and intuitive interaction that users demand.
- *Small Size*. The small, thin size of our solutions enables our customers to reduce the overall size and weight of their products in order to satisfy consumer demand for portability.
- *Low Power Consumption*. The low power consumption of our solutions enables our customers to offer products with longer battery life and/or smaller battery capacity.
- *Advanced Functionality*. Our solutions offer advanced features, such as face detect, force sensing, 12-bit output technology for mobile DDIC, 90Hz FHD TDDI, security algorithms, voice barge-in, ambient noise cancellation, and video noise reduction to enhance the user experience.
- *Reliability*. The reliability of our solutions satisfies consumer requirements for dependability, which is a major component of consumer satisfaction.
- *Durability*. Our solutions withstand repeated use, harsh physical treatment, and temperature fluctuations while providing an enduring superior level of performance.
- *Simplified Security*. Our fingerprint authentication solutions protect the user's identity, while simplifying the user experience for electronic devices.

We believe these characteristics will enable us to continue to enhance our position as a technological enabler within our target markets.

Our emphasis on technological leadership and design capabilities positions us to provide unique human interface product solutions that address specific customer requirements, as well as satisfy our customers' specifications, including features and functionality, industrial design, security, mechanical, and electrical requirements. Our products also offer unique integration options, including the ability to place our capacitive sensors underneath the plastic or glass of the device or the combining of a touchpad and fingerprint sensor on one device. Our solutions allow for streamlined and stylized designs, and Light Emitting Diode, or LED, integration to indicate status or to enhance industrial design. With our Edge SOC products, we offer full system solutions that enable an immersive voice/audio, multimedia and vision experience. Our Edge SOCs enable secure artificial intelligence processing on device, for enhanced privacy and responsiveness. Our diversified audio product line enables clear voice for audio calls, immersive surround sound for gaming, advanced noise cancellation for consumer products and ultra-low-power hi-fidelity audio for mobile applications.

Our long-term working relationships with large, global OEMs provide us with the experience to satisfy their demanding design specifications and other requirements. Our custom product solutions provide OEMs with numerous benefits, including:

- ease of system integration;
- reduced product development costs;
- shorter product time to market;
- compact and efficient platforms;
- improved product functionality and utility;
- product differentiation; and
- continuity of supply.

Our collaborative efforts with our customers reduce duplication and overlap of investment and resources, enabling our OEM partners to devote more time and resources to the market development of their differentiated products.

We utilize capacitive technology, rather than resistive or mechanical technology, in our touch solutions. Unlike resistive and mechanical technology, our solid-state capacitive technology has no moving parts and does not require activation force, thereby providing a durable, more reliable solution that can be integrated into both curved and flat surfaces. Capacitive technologies also allow for much thinner sensors than resistive or mechanical technology, providing for slimmer, more compact and unique industrial designs. Our fingerprint solutions utilize capacitive technology.

Products

Our family of product solutions allows our customers to solve their interface needs and differentiate their products from those of their competitors.

ClearPad®

Our ClearPad family of products enables the user to interact directly with the display on electronic devices, such as mobile smartphones, tablets, and automobiles. Our ClearPad has distinct advantages, including low-profile form factor; high reliability, durability, and accuracy; and low power consumption. We typically sell our ClearPad solution as a chip, together with customer-specific firmware, to sensor manufacturers, OLED manufacturers or Liquid Crystal Display, or LCD, manufacturers, to integrate into their touch-enabled products. A discrete touchscreen product typically consists of a transparent, thin capacitive sensor that can be placed over any display, such as an LCD or OLED, and combined with a flexible circuit material and a touch controller chip. Each ClearPad solution is custom designed to integrate customer-specific input preferences such as force sensing, pen input, gloved finger recognition, proximity, finger hover, and air swipe functionality.

Our ClearPad Series 3 product family can provide full-time tracking of ten or more fingers simultaneously, and features stylus support as well as support for various sensor configurations, including traditional discrete sensors; sensor-on-lens, which includes sensor electrodes patterned on the bottom of the glass cover lens; on-cell, which includes sensor electrodes patterned on the display glass; and in-cell, which includes sensor electrodes patterned inside LCD glass.

Our ClearPad Series 7 product family is designed to meet the requirements of the large touchscreen market for products more closely related to notebooks, slates, tablets, and similar devices. Our ClearPad Series 7 products include low-cost, single-chip touchscreen solutions and multi-chip touchscreen solutions designed for devices that have more demanding user input requirements, such as gaming applications.

ClearView™

Our ClearView display driver products offer advanced image processing and low power technology for displays on electronic devices, including smartphones and tablets. ClearView products include adaptive image processing that works in concert with proprietary customization options to enable development of efficient and cost-effective high-performance solutions and faster time to market. Our display driver products offer automatic regional control of color balance that optimizes light and dark areas of an image simultaneously, and sunlight readability enhancement capabilities that optimize image quality under various lighting conditions.

Synaptics TouchView™

Our TouchView products integrate touch and display technologies to deliver advanced performance and simplified design. Our proprietary algorithms synchronize touch sensing with display driving, effectively eliminating display-induced noise and improving capacitive sensing performance. TouchView display integration allows for thinner touchscreens with narrower bezels for greater industrial design flexibility. TouchView is available in two-chip and single-chip (TDDI) configurations, providing a range of solutions suitable for hybrid and full in-cell touchscreen designs. Both configurations reduce manufacturing complexity and simplify the supply chain for OEM manufacturers.

Natural ID®

Our Natural ID family of capacitive-based fingerprint ID products is designed for use in automobiles, notebook PCs, PC peripherals, and other applications. Thin form factors provide industrial design flexibility, while robust matching algorithms and anti-spoofing technology provide strong security. Our Natural ID family of products spans a range of form factors, colors, and materials suitable for design on the front, back or side of a device.

Natural ID products are designed to be compatible with Fast IDentity Online, or FIDO, protocols, enhancing security and interoperability with a broad range of solutions. FIDO was formed to enhance online authentication by developing open, scalable technical standards to help facilitate the adoption of robust, easy to use authentication that reduces the reliance on passwords. Natural ID products increase the security of automobile and PC products while maintaining ease of use for the customer.

TouchPad™

Our TouchPad family of products, which can take the place of, and exceed the functionality of a mouse, is a small, touch-sensitive pad that senses the position and movement of one or more fingers on its surface through the measurement of capacitance. Our TouchPad provides an accurate, comfortable, and reliable method for screen navigation, cursor movement, and gestures, and provides a platform for interactive input for both the consumer and corporate markets. Our TouchPad solutions allow our customers to provide stylish, simple, user-friendly, and intuitive solutions to consumers. Our TouchPad solutions also offer various advanced features, including scrolling, customizable tap zones, tapping and dragging of icons, and device interaction.

Our TouchPad solutions are available in a variety of sizes, electrical interfaces, and thicknesses, and are designed to meet the electrical and mechanical specifications of our customers. Customized firmware and driver software ensure the availability of specialized features. As a result of their solid-state characteristics, our TouchPad solutions have no moving parts that wear out, resulting in a robust and reliable input solution that also allows for unique industrial designs.

SecurePad™

Our SecurePad integrates our Natural ID fingerprint sensor directly into the TouchPad area, improving usability for end users and simplifying the supply chain for notebook PC manufacturers.

ClickPad™

Our ClickPad introduces a clickable mechanical design to the TouchPad solution, eliminating the need for physical buttons. The button-less design of our ClickPad allows for unique, intuitive industrial design and makes it an excellent alternative to conventional input and navigation devices. Our ClickPad is activated by pressing down on the internal tact switch to perform left-button or right-button clicks and provides tactile feedback similar to pressing a physical button. The latest version of ClickPad features ClickEQ™, a mechanical solution that provides uniform click depth to maximize the surface area available for gestures and improves click performance over hinged designs.

ForcePad®

Our ForcePad is a thinner version of our ClickPad, which introduces a new dimension in control through the addition of variable force sensitivity. ForcePad is designed to provide consistent performance across OEM models through its design intelligence and self-calibration features. By detecting the amount of force applied, ForcePad is engineered to enable more intuitive and precise user interactions in operating system controls and applications. Designed with thin and light notebooks in mind, ForcePad is 40% thinner than a conventional touch pad.

AudioSmart®

AudioSmart products bring forward optimum analog, mixed-signal and digital signal processor, or DSP, technologies for high-fidelity voice and audio processing. Our AudioSmart products include far-field voice technologies that enable accurate voice command recognition from a distance while disregarding other sounds, such as music, in order to activate smart devices such as smart speakers. AudioSmart also includes personal voice and audio solutions for high-performance headsets that enable active noise cancellation and are based on the USB Type-C standard.

VideoSmart™

Our VideoSmart solutions include powerful single-chip 4K UHD media processors for TVs, set-top boxes, and over-the-top streaming devices.

ImagingSmart™

Our ImagingSmart solutions include a product portfolio that spans four distinct product lines including document and photo imaging controllers, digital video, fax, and modem solutions. ImagingSmart products leverage image processing IP, JPEG encoders and DSP technology to deliver a wide range of fax, modem, digital video and printer solutions for home, mobile and imaging applications.

Other Products

Other product solutions we offer include Dual Pointing Solutions, TouchStyk™, TouchButtons™ and display interface products. Our dual pointing solutions offer TouchPad with a pointing stick in a single notebook computer, enabling users to select their interface of choice. TouchStyk is a self-contained pointing stick module that uses capacitive technology similar to that used in our TouchPad. TouchButtons provide capacitive buttons and scrolling controls for an easy-to-use and stylish interface solution designed to replace mechanical buttons. Our display interface products deliver highly integrated, scalable video and audio connectivity to a broad array of applications for notebook PCs, enterprise systems and consumer devices, and our VR bridge and VR DDIC chips enable the VR market to move to higher resolution displays that solve the “screen door” effect caused by lower resolution displays.

Capabilities

Our products are supported by a variety of feature capabilities allowing for further product differentiation and easy customer integration.

Enhanced Gesture Recognition™

Our Enhanced Gesture Recognition is a suite of ClearPad gestures included in our firmware. Customers can easily enable SingleTouch gestures, such as Tap, Double Tap, Press, and Flick; DualTouch gestures, such as Pinch and Pivot Rotate; and multi-finger gestures for ClearPad directly from our touch module firmware. No additional recognition software is required on the host processor to implement these gestures. This approach lowers host processor resource requirements and ensures that gestures are implemented using our pattern-recognition technology.

SignalClarity™ *Technology*

SignalClarity technology provides an improved signal-to-noise ratio for enhanced touch detection and noise immunity, and enables smartphone OEMs to support inexpensive chargers and work with multiple display types. SignalClarity technology works with various display configurations, including discrete sensors, sensor-on-lens, on-cell, and in-cell touchscreen designs.

Synaptics TypeGuard®

TypeGuard technology allows the system to differentiate between a finger and a palm, virtually eliminating accidental cursor movements, scrolling and clicks.

Proximity Sensing

Our proximity sensing technology enables users to interact with consumer electronics without touch. With this technology, sensors in a device, such as a notebook PC, mobile phone, peripheral, or digital photo frame, sense the presence of a user's finger or hand to activate a function. These sensors can illuminate LEDs for discoverable buttons, immediately wake devices from power-saving mode, or activate other functionalities.

TDsync™

TDsync technology effectively eliminates problems caused by display-induced noise in the touch subsystem, improving capacitive sensing performance and reducing errors to deliver a better user experience. TDsync technology works with in-cell designs, including both two-chip and single-chip controller implementations.

ClearForce®

ClearForce gives our ClearPad and TouchView solutions a new dimension in user interfaces, by enabling features such as scrolling, zoom, text or photo editing, and enabling users to engage in gaming or other multi-touch applications by applying variable force with a finger or stylus.

Design Studio™

Our Design Studio software streamlines the touchscreen design process, while reducing total design cost and accelerating time to market. This tool suite assists designers in creating optimal products that are tightly aligned with target design and performance specifications. Design Studio works seamlessly with multiple display configurations and stack-ups, including discrete sensor, on-glass-sensor, on-cell, and in-cell solutions. Design Studio includes tuning and configuration wizards, production test tools, and diagnostics tools that configure and test chips and modules built using Synaptics' capacitive sensing technology.

SentryPoint®

SentryPoint is our suite of advanced security features available with our Natural ID fingerprint products. SentryPoint capabilities include fingerprint matching directly on the sensor chip, advanced anti-spoofing technology, a cryptographic security engine, security key module generation, 256-bit AES encryption and TLS secure communications between the fingerprint subsystem and the host platform.

Image Studio™

Our Image Studio software simplifies the display design process, reducing design costs and accelerating time to market. This tool suite assists designers in creating displays that are tightly aligned with target design and performance specifications. Image Studio works seamlessly with all display drivers and can be used for tuning on the panel or at the phone level. Image Studio includes tuning and configuration wizards and diagnostics tools that configure and test the modules built using Synaptics' DDICs.

QDEO®

QDEO video processing software and firmware delivers immersive entertainment regardless of source.

Technologies

We have developed and own an extensive array of technologies, encompassing ASICs, firmware, software, mechanical and electrical designs, display systems, pattern recognition, touch-sensing technologies, fingerprint sensing, voice, audio, imaging, modem and multimedia technologies. We continue to develop technology in these areas. We believe these technologies and the related intellectual property rights create barriers for competitors and allow us to provide high-value human interface semiconductor product solutions in a variety of high-growth markets.

Our broad line of human interface semiconductor product solutions is currently based upon the following key technologies:

- capacitive position sensing technology;
- capacitive force sensing technology;
- transparent capacitive position sensing technology;
- pattern recognition technology;
- mixed-signal integrated circuit technology;
- display systems and circuit technology;
- capacitive active pen technology;
- multi-touch technology;
- proprietary microcontroller technology;
- proprietary vector co-processor technology;
- capacitive fingerprint sensing technology;
- optical fingerprint sensing technology;
- voice and audio technology;
- imaging and modem technology;
- multimedia processing technology; and
- deep learning and neural network inferencing technology.

In addition to these technologies, we develop firmware and device driver software that we incorporate into our products, which provide unique features, such as virtual scrolling, customizable tap zones, and tapping and dragging of icons. In addition, our ability to integrate all our products to interface with major operating systems provides us with a competitive advantage.

Capacitive Position Sensing Technology. This technology provides a method for sensing the presence, position, and contact area of one or more fingers or a stylus on a flat or curved surface. Our technology works with very light touch, supports full multi-touch capabilities, and provides highly responsive cursor navigation, scrolling, and selection. It uses no moving parts, can be implemented under plastic or glass, and is extremely durable. Our technology can also track one or more fingers in proximity to the touch surface.

Capacitive Force Sensing Technology. This technology senses the direction and magnitude of a force applied to an object. The object can either move when force is applied, like a typical joystick used for gaming applications, or it can be isometric, with no perceptible motion during use, like our TouchStyk, ForcePad, or ClearForce. The primary competition for this technology is resistive strain gauge technology. Resistive strain gauge technology requires electronics that can sense very small changes in resistance, presenting challenges to the design of that circuitry, including sensitivity to electrical noise and interference. Our electronic circuitry determines the magnitude and direction of an applied force, permits very accurate sensing of tiny changes in capacitance, and minimizes electrical interference from other sources. Our capacitive force sensing technology can be integrated with our position sensing technology.

Pattern Recognition Technology. This technology is a set of software algorithms and techniques for converting real world data, such as gestures and handwriting, into a digital form that can be recognized and manipulated within a computer. Our technology provides reliable gesture decoding and handwriting recognition, and can be used in other applications such as signature verification for a richer user experience.

Mixed-Signal Integrated Circuit Technology. This hybrid analog-digital integrated circuit technology combines the power of digital computation with the ability to interface with non-digital, real-world signals, such as the position of a finger or stylus on a surface. Our patented design techniques permit us to utilize this technology to optimize our core ASIC engine for all our products. Our mixed-signal technology consists of a broad portfolio of circuit expertise in areas such as the following:

- precision capacitance measurement;
- power management (switching converters, charge pumps, and Low-dropout regulators, or LDOs);
- analog-to-digital and digital-to-analog converters;
- LCD source and VCOM drivers;
- high-speed serial interfaces;
- display timing controllers, or TCONs;
- DDICs;
- electromagnetic emissions suppression and susceptibility hardening;
- SRAM, DRAM, and non-volatile memories;
- VLSI digital circuits with multiple clock and power domains; and
- communications and signal processing circuits.

Display Systems and Circuit Technology. This technology enables us to develop optimized human interface semiconductor product solutions with improved compatibility with their application environments. This technology consists of mobile and large format display semiconductor expertise, including the following functional blocks:

- TCONs;
- DDICs;
- TFT gamma references;
- VCOM drivers;
- source drivers;
- content adaptive brightness control;
- contrast enhancement;
- color enhancement;
- color space adjustment;
- gamma curve control;
- local area active contrast optimization;
- sunlight readability enhancements;
- adaptive image compression;
- image decompression;
- sub-pixel rendering;
- video scaling;
- edge enhancement;

- frame rate control;
- selective update;
- force, touch and display synchronization;
- high-speed serial interfaces such as MIPI DSI and Qualcomm MDDI; and
- display power circuits such as inductive switchers, charge pumps, and LDOs.

This technology also enables us to develop advanced products that combine the functions of the display and touch sensing systems to enable highly integrated display and touch functionality with improved performance, thinner form factors, and lower system cost.

Capacitive Active Pen Technology. This technology allows us to develop a pen that can be used for input on a capacitive touchscreen. As well as generating a signal that allows the touchscreen to track the pen, additional data, such as the pen applied force and pen button states, are also communicated to the touchscreen device. Information can also be communicated from the touchscreen to the pen.

Multi-touch Technology. This technology allows us to create capacitive touch products that simultaneously track the presence, position and other characteristics of multiple objects in contact with or in close proximity to a flat or curved touch surface. It enables, for example, the recognition of multi-finger gestures, the tracking of a stylus position while the user's palm is also in contact with the touch surface, and the simultaneous interaction of multiple users with the same touch surface.

Proprietary Microcontroller Technology. One example of multi-touch technology is our proprietary 16-bit microcontroller core that is embedded in the digital portion of our mixed signal ASIC, which is allowing us to optimize our ASIC for position sensing tasks. Our embedded microcontroller provides great flexibility in customizing our products via firmware, which eliminates the need to design new circuitry for each new application.

Proprietary Vector Co-Processor Technology. Our vector co-processor technology is designed for use in our ASICs, accompanying either one of our own proprietary microcontroller cores or a commercially available one. The co-processor boosts the ASIC's computational performance by efficiently processing vectors of data for a range of mathematical operations. This allows us to implement more computationally intensive algorithms within our firmware.

Capacitive Fingerprint Sensing Technology. Our fingerprint sensing technology simplifies the system or application authentication process by substituting the user's fingerprint for the login name and password. Our capacitive fingerprint sensing technology provides for fingerprint authentication by scanning and matching an image of a user's fingerprint, as well as initial fingerprint enrollment. Our sensing technology also incorporates spoof detection and includes many implementation choices including back of phone, button integration, touchpad integration, and under glass.

Voice and Audio Technology. This technology allows us to develop human interface and communication products based on voice and audio interaction. The technology embodies a broad range of analog and mixed signal circuits expertise and audio signal processing algorithms, including:

- Noise suppression;
- Acoustic echo cancellation;
- De-reverberation;
- Active noise cancellation;
- Speaker protection;
- Audio post processing;
- Voice activity detection;
- Trigger word detection;
- Mid-field and far-field voice processing;
- Audio digital signal processor architecture;

- Audio codecs;
- USB interfaces;
- High performance audio analog-to-digital converters, or ADCs, and digital-to-analog converters, or DACs;
- Audio amplifiers;
- Efficient charge pumps and LDOs;
- Low power audio processing;
- Product acoustic design.

Imaging and Modem Technology. This technology allows us to create a family of SoC integrated circuits and software for printers, video cameras, fax machines and modems. Key functional blocks include:

- Printer imaging pipeline;
- Inkjet, laser, and thermal print engine and motor control;
- Scan/camera and peripheral control;
- Low power video codecs;
- Image processing hardware accelerators;
- Motion detection;
- Data and fax modem hardware and firmware.

Multimedia Processing Technology. This technology allows us to create multimedia SoC products for set-top boxes, digital personal assistants, virtual reality, and over the top, or OTT, audio and video. Our video processing technology includes hardware and algorithms to reduce analog and digital noise, convert to different video formats, and enhance color and contrast. Our products include security and secure encrypt/decrypt technology, including secure boot and hardware root of trust.

Deep Learning and Neural Network Inferencing Technology. This technology allows us to create and train deep neural networks for audio, image processing, and computer vision functions. Some of our products contain hardware designed to evaluate deep neural networks securely and with low latency. We also have technology that allows us to compress our trained neural networks for more efficient inferencing on our hardware.

Research and Development

We conduct ongoing research and development programs that focus on advancing our existing interface technologies, improving our current product solutions, developing new products, improving design and manufacturing processes, enhancing the quality and performance of our product solutions, and expanding our technologies to serve new markets. Our goal is to provide our customers with innovative solutions that address their needs and improve their competitive positions. Our long-term vision is to offer human interface semiconductor product solutions, such as touch, fingerprint, handwriting, vision, voice and audio capabilities, and biometrics that can be readily incorporated into various electronic devices.

Our research and development programs focus on the development of accurate, easy to use, reliable, and intuitive human interfaces for electronic devices. We believe our innovative interface technologies can be applied to many diverse products, and we believe the interface is a key factor in the differentiation of these products. We believe that our interface technologies enable us to provide customers with product solutions that have significant advantages over alternative technologies in terms of functionality, size, power consumption, durability, and reliability. We also intend to pursue strategic relationships and acquisitions to enhance our research and development capabilities, leverage our technology, and shorten our time to market with new technological applications.

Our research, design, and engineering teams frequently work directly with our customers to design custom solutions for specific applications. We focus on enabling our customers to overcome their technical barriers and enhance the performance of their products. We believe our engineering know-how and electronic systems expertise provide significant benefits to our customers by enabling them to concentrate on their core competencies of production and marketing.

As of the end of fiscal 2019, we employed 1,401 people in our technology, engineering, and product design functions in the United States, China, Taiwan, Japan, India, Korea, Armenia, and Hong Kong. Our research and development expenses were $341.1 million, $363.2 million, and $292.3 million for fiscal 2019, 2018, and 2017, respectively.

Intellectual Property Rights

Our success and ability to compete depend in part on our ability to maintain the proprietary aspects of our technologies and products. We rely on a combination of patents, trade secrets, copyrights, confidentiality agreements, and other statutory and contractual provisions to protect our intellectual property, but these measures may provide only limited protection.

As of June 30, 2019, we held 1,875 active patents and 897 pending patent applications worldwide. Collectively, these patents and patent applications cover various aspects of our key technologies, including those for fingerprint sensors, touch controllers, display driver ICs, integrated touch and display controllers, touchpad, far-field voice DSPs, audio codec, multimedia processors and image processors. Our proprietary firmware and software, including source code, are also protected by copyright laws and applicable trade secret laws.

Our extensive array of technologies include those related to ICs, firmware, software, and mechanical hardware. Our products rely on a combination of these technologies, making it difficult to use any single technology as the basis for replicating our products. Furthermore, the lengths of our customers' design cycles and the customizations required within the products we provide to our customers also serve to protect our intellectual property rights.

Customers

Our customers include many of the world's largest mobile and PC OEMs, based on unit shipments, as well as many large IoT OEMS, automotive manufacturers and a variety of consumer electronics manufacturers. Our demonstrated track record of technological leadership, design innovation, product performance, cost effectiveness, and on-time deliveries have resulted in our leadership position in providing human interface semiconductor product solutions. We believe our strong relationship with our OEM customers, many of which are also currently developing product solutions which are focused in several of our target markets, will continue to position us as a source of supply for their product offerings.

Our leading OEM customers in fiscal 2019 included the following:

- **Dell**
- **Ford**
- **Google**
- **Hewlett-Packard**
- **Huawei**
- **Lenovo**
- **LG Electronics**
- **Nikon**
- **Oppo Mobile**
- **Samsung**
- **Sony**
- **Technicolor**
- **Vivo**
- **Xiaomi**

We generally supply custom-designed products to OEMs through their contract manufacturers, supply chain or distributors. Sales to Sanshin Electronics Co., Ltd., Shenzhen Wisewheel Electronics Co., Ltd., and Worldshine Technology Ltd. accounted for 15%, 14%, and 10%, respectively, of our net revenue in fiscal 2019.

We consider both the OEMs and their contract manufacturers or supply chain partners to be our customers, as well as in some cases, our distributors. Both the OEMs and their partners may determine the design and pricing requirements and make the overall decision regarding the use of our human interface semiconductor product solutions in their products. The contract manufacturers and distributors place orders with us for the purchase of our products, take title to the products purchased upon delivery by us, and pay us directly for those purchases. The majority of these customers do not have return rights except for warranty provisions.

Strategic Relationships

We have used strategic relationships to enhance our ability to offer value-added customer solutions in the past. We intend to enter additional strategic relationships with companies that may help us serve our target markets.

Sales and Marketing

We sell our product solutions for incorporation into the products of our OEM customers. We generate sales through direct sales employees as well as outside sales representatives, distributors and value added resellers. Our sales personnel receive substantial technical assistance and support from our internal technical marketing and engineering resources because of the highly technical nature of our product solutions. Sales frequently result from multi-level sales efforts that involve senior management, design engineers, and our sales personnel interacting with our customers' decision makers throughout the product development and order process.

As of the end of fiscal 2019, we employed 246 sales and marketing professionals. We maintain customer support offices domestically and internationally, which are located in the United States, Taiwan, China, India, Korea, Japan, and Europe. In addition, we utilize value-added resellers and sales distributors which are primarily located in America, China, Korea and Taiwan.

International sales constituted over 86% of our revenue for each of fiscal 2019, 2018, and 2017. Approximately 78% of our sales in fiscal 2019 were made to companies located in China, Japan, and South Korea that provide design and manufacturing services for major notebook computer and mobile product applications OEMs. Our sales are almost exclusively denominated in U.S. dollars. This information should be read in conjunction with Note 12 Segment, Customers, and Geographic Information to the consolidated financial statements contained elsewhere in this report.

Manufacturing

We employ a virtual manufacturing platform through third-party relationships. We currently utilize a few semiconductor wafer manufacturers to supply us with silicon wafers integrating our proprietary design specifications. The completed silicon wafers are forwarded to third-party package and test processors for further processing into die and packaged ASICs, as applicable, which are then utilized in our custom interface products or processed as our ASIC-based solution.

After processing and testing, the die and ASICs are consigned to various contract manufacturers for assembly or are shipped directly to our customers. During the assembly process, our die or ASIC is either combined with other components to complete the module for our custom human interface solution or the ASIC is maintained as a standalone finished good. The finished assembled product is subsequently shipped directly to our customers or by our contract manufacturers directly to our customers for integration into their products.

We diversify our production capacity through third-party relationships, thereby strengthening our virtual manufacturing platform. We believe our virtual manufacturing strategy provides a scalable business model, enables us to concentrate on our core competencies of research and development, technological advances, and product design and engineering, and reduces our capital investment.

Our third-party contract manufacturers and semiconductor fabricators are Asia-based organizations. We generally provide our contract manufacturers with six-month rolling forecasts of our production requirements. We generally do not have long-term agreements with our contract manufacturers that guarantee production capacity, prices, lead times, or delivery schedules. Our reliance on these parties exposes us to vulnerability owing to our dependence on a few sources of supply. We believe, however, that other sources of supply are available. We may establish relationships with other contract manufacturers in order to reduce our dependence on any one source of supply.

Periodically, we purchase inventory from our contract manufacturers when a customer delays its delivery schedule or cancels its order. In those circumstances in which our customer has cancelled its order and we purchase inventory from our contract manufacturers, we consider a write-down to reduce the carrying value of the inventory purchased to its net realizable value. We charge write-downs to reduce the carrying value of obsolete, slow moving, and non-usable inventory to its net realizable value and charge such write-downs to cost of revenue. We also record a liability and charge to cost of revenue for estimated losses on inventory we are obligated to purchase from our contract manufacturers when such losses become probable from customer delays or order cancellations.

Backlog

As of the end of fiscal 2019, we had a backlog of orders of $277.0 million, an increase of $9.7 million compared with a backlog of orders as of the end of fiscal 2018 of $267.3 million. The increase in backlog is primarily due to slightly higher average selling prices of products ordered in backlog in all of our businesses, partially offset by a lower number of units in backlog for products ordered by customers at the end of fiscal 2019 than those ordered at the end of fiscal 2018. Our backlog consists of products for which purchase orders have been received and are scheduled for shipment in the subsequent quarter. Most orders are subject to rescheduling or cancellation with limited penalties. Because of the possibility of customer changes in product shipments, our backlog as of a particular date may not necessarily be indicative of net revenue for any succeeding period.

Competition

PC and Mobile

Our touch, display and fingerprint-based semiconductor products are sold into markets for mobile product applications, PC product applications, automobile applications and other electronic devices. The markets for touchscreen products are characterized by rapidly changing technology and intense competition. Our principal competition in the sale of touchscreen products includes Goodix, Melfas, Samsung LSI, Solomon Systech, STMicroelectronics and various other companies involved in human interface semiconductor product solutions. Our principal competitor in the sale of notebook touch pads are Elan Microelectronics and Goodix. Our principal competitors in the sale of display driver products and TDDI products for the mobile and PC product applications markets include Focaltech, Himax Technologies, Novatek Microelectronics, Samsung LSI and SiliconWorks. Our principal competitors in the sale of fingerprint authentication solutions for PC product applications markets are Egis Technology, Elan Microelectronics, Fingerprint Cards and Goodix.

IoT

Our solutions for far-field voice, SoCs enabling new and efficient forms of media consumption paradigms, and video interface semiconductor products are sold into market segments that are showing significant growth, ranging from smart assistant platforms to SPP/OTT platforms and VR/AR solutions. The markets for SPP/OTT products and smart assistant solutions require strong technology innovation and deep systems and systems engineering expertise. Our principal competition in these markets include Broadcom, MediaTek, AmLogic and Realtek, among others.

We provide voice processing silicon and software solutions for voice-enabled devices, consumer and commercial imaging, and next-generation audio applications. In addition to our voice solutions, we support the headphone and virtual reality/mixed reality head mounted display industry with USB-C codec solutions for next generation wireless audio devices and wearables. Our competitors in the sale of audio products include BES Technic, Cirrus Logic, Qualcomm, Realtek, and STMicroelectronics. Our automotive products include touch, display driver and fingerprint solutions for major automotive OEMs. Our principal competitors for these products include Cypress, Focaltech, Goodix, Himax and Microchip. Our IoT interface products are sold into PC and smartphone docks and wireless adapter market applications. Our principal competitors in the sale of IoT interface products are Megachips and Realtek. We provide fax, modem and print silicon and software solutions for printers, POS and medical applications. Our principal competitors in these markets are Silicon Labs, Broadcom and QBit.

General

We believe our solutions-based systems and engineering experience, coupled with our technologies, offer benefits in terms of size, power consumption, durability, ease of use, cost effectiveness, and reliability when compared to our competitors and other technologies. While our markets continue to evolve, we believe we are well positioned to compete aggressively for this business based on our proven track record, our technological expertise, our marquee global customer base, our technology roadmap, and our reputation for design innovation. Our competitive position could be adversely affected if one or more of our current OEMs reduce their orders or if we are unable to develop new customers for our human interface semiconductor product solutions.

Employees

As of the end of fiscal 2019, we employed a total of 1,861 persons, including 214 in operations, finance, and administration; 246 in sales and marketing; and 1,401 in research and development. Of these employees, 586 were located in North America and 1,275 in Asia/Pacific and the rest of the world. We consider our relationship with our employees to be good, and none of our employees are represented by a union in collective bargaining with us.

Competition for qualified personnel in our industry is extremely intense, particularly for engineering and other technical personnel. Our success depends on our continued ability to attract, hire, and retain qualified personnel.

Information about our Executive Officers

The following table sets forth certain information regarding our executive officers as of August 19, 2019:

Name	Age	Position
Michael Hurlston	52	President and Chief Executive Officer
Kermit Nolan	59	Chief Accounting Officer and Interim Chief Financial Officer
Saleel Awsare	54	Senior Vice President and General Manager, IoT Division, Corporate Marketing & Investor Relations
Shawn Liu	55	Senior Vice President and General Manager, PC Division
Richard Lu	40	Senior Vice President and General Manager, Mobile and Automotive Division
John McFarland	52	Senior Vice President, General Counsel and Secretary
Alex Wong	64	Senior Vice President, Worldwide Operations

Michael Hurlston has been the President and Chief Executive Officer of our Company since August 19, 2019. Prior to joining our company, Mr. Hurlston served as the Chief Executive Officer and a member of the Board of Directors of Finisar Corporation from January 2018 to August 2019. Prior to joining Finisar, he served as Senior Vice President and General Manager of the Mobile Connectivity Products/Wireless Communications and Connectivity Division and held senior leadership positions in sales, marketing and general management at Broadcom Limited and its predecessor corporation from November 2001 through October 2017. Prior to joining Broadcom in 2001, Mr. Hurlston held senior marketing and engineering positions at Oren Semiconductor, Inc., Avasem, Integrated Circuit Systems, Micro Power Systems, Exar and IC Works from 1991 until 2001. Mr. Hurlston is a member of the board of directors of Ubiquiti Networks, Inc. and Vilynx Inc. Mr. Hurlston holds a Bachelor of Science and a Master of Science degree in Electrical Engineering and a Master’s degree in Business Administration from the University of California, Davis.

Kermit Nolan has been the Chief Accounting Officer and Interim Chief Financial Officer of our company since February 2019. Mr. Nolan joined the company in March 2004 and has served in various accounting, tax and finance roles including most recently as Vice President of Finance and Corporate Controller. Prior to joining our company, Mr. Nolan worked in various tax and accounting positions at two public companies including Hello Direct (acquired by GN Netcom in November 2000), and Inmac (acquired by MicroWarehouse in January 1996). Mr. Nolan began his career in accounting with KPMG, formerly, Peat, Marwick, Mitchell and Co. Mr. Nolan holds a Bachelor of Science degree in Accounting from San Jose State University.

Saleel Awsare has been the Senior Vice President and General Manager of our IoT Division since April 2019 and the Senior Vice President of Corporate Marketing & Investor Relations since December 2018. Before joining our company as Corporate Vice President and General Manager of Audio & Imaging Products, he was President of Conexant Systems, LLC (“Conexant”) from March 2016 to July 2017, and Senior Vice President & General Manager of Audio & Imaging from April 2012 to March 2016. Synaptics acquired Conexant in July 2017. Mr. Awsare served as President of Nuvoton Technology Corporation's U.S. operations and General Manager of Nuvoton’s audio and voice divisions from December 2008 to March 2012. Prior to Nuvoton, Mr. Awsare was the Executive Vice President and General Manager of mixed signal products for Winbond Electronics Corporation America. Before Winbond, Mr. Awsare was a director of engineering for Information Storage Devices. Mr. Awsare is a member of the Board of Directors, Audit Committee, Compensation Committee and Nominating and Corporate Governance Committee of Sigma Designs, Inc. and a member of the Board of Trustees of Stevens Institute of Technology. Mr Awsare holds a Bachelor of Science in Electrical Engineering from Stevens Institute of Technology and a Master of Science in Engineering Management from Santa Clara University.

Shawn Liu has been the Senior Vice President and General Manager, PC Division of our company since June 2018. Mr. Liu joined Synaptics in November 2012 as our Vice President of ThinTouch Products in the Human Interface Systems Division, and then rotated through senior leadership positions in the Smart Display Division and Biometrics Product Division within Synaptics, including most recently as the Vice President and General Manager, PC Division from July 2017 to June 2018. From January 2011 to November 2012, he was a Director at Apple, where he led an Engineering Program Management team responsible for technologies in Mac and iOS products. From 2000 to 2011, Mr. Liu held senior positions at AMD/ATI and Cadence. Early in his career, Mr. Liu spent several years in Taiwan in various managerial capacities including a business development position at a wireless chipset start-up, and held various design engineering positions at SGI, LSI Logic and VLSI Technology. Mr. Liu is a member of the Board of Directors of OXi Technology Ltd. Mr. Liu holds a Bachelor of Science degree and Master of Science degree, both in Electrical Engineering, from Cornell University.

Richard Lu has been the Senior Vice President and General Manager of the Mobile and Automotive Division of our company since December 2018. Prior to joining our company, Mr. Lu was Vice President and General Manager of the Mobile Solutions Division at Fairchild Semiconductor from February 2013 to September 2016 and Vice President and General Manager of the Mobile, Computing, and Cloud Division at ON Semiconductor from September 2016 to December 2018, after ON Semiconductor's acquisition of Fairchild Semiconductor. Prior to Fairchild, Mr. Lu held design engineering and design management positions at Maxim Integrated and Analog Devices Inc. Mr. Lu holds a Bachelor of Science and a Master of Science degrees in Electrical Engineering from the University of California, Berkeley.

John *McFarland* has been the Senior Vice President, General Counsel and Secretary of our company since November 2013. Prior to joining our company, Mr. McFarland served for nine years as the Executive Vice President, General Counsel and Secretary of MagnaChip Semiconductor. Mr. McFarland spent his early career at law firms in Palo Alto, California, and Seoul, Korea. Mr. McFarland holds a Bachelor of Arts degree in Asian Studies, conferred with highest distinction from the University of Michigan, and a Juris Doctor degree from the University of California, Los Angeles, School of Law.

Alex Wong has been the Senior Vice President of Worldwide Operations of our company since July 2010. Mr. Wong served as the Principal Executive Officer of our Company from March 2019 to August 2019, and Vice President of Worldwide Operations of our company from September 2006 to July 2010. From 2003 to 2006, Mr. Wong served our company as Managing Director of Hong Kong and Director of Operations. Prior to joining our company, Mr. Wong held various management positions with National Semiconductor Corporation, including General Manager for National Joint Ventures in China and Hong Kong and Director of Corporate Business Development. Mr. Wong holds a Bachelor of Science degree in Computer Science from California State University at Northridge and a Master's degree in Business Administration from the University of East Asia, Macau.

There are no arrangements, understandings, or family relationships pursuant to which our executive officers were selected. There are no related party transactions between us and our executive officers. We have entered into indemnification agreements with our officers and directors.

ITEM 1A. RISK FACTORS

You should carefully consider the following factors, together with all the other information included in this report, in evaluating our company and our business.

We currently depend on our human interface solutions for the mobile product applications market and the PC product applications market for a substantial portion of our revenue, and any downturn in sales of these products would adversely affect our business, revenue, operating results, and financial condition.

We currently depend on our human interface solutions for the mobile product applications market and the PC product applications market for a substantial portion of our revenue. Any downturn in sales of these products would adversely affect our business, revenue, operating results, and financial condition. Similarly, a softening of demand in the smartphone market, the tablet market, or the notebook portion of the PC product applications market, or a slowdown of growth in the mobile product applications market because of consumer preferences, the emergence of applications not including our solutions, or other factors would cause our business, operating results, and financial position to suffer.

Net revenue from our human interface solutions for mobile product applications has been volatile in the past and may not increase or be less volatile in the future.

Net revenue from our human interface solutions for mobile product applications, particularly smartphones, has been volatile in the past, and may not increase or be less volatile in the future. Net revenue from our human interface solutions for mobile product applications was $900.1 million for fiscal 2019, $1,021.0 million for fiscal 2018, and $1,406.0 million for fiscal 2017. Our human interface business for mobile product applications faces many uncertainties, including our success in enhancing our position in evolving markets dominated by a limited number of OEMs, and market acceptance of our products over competitive or lower-cost solutions. Our inability to address these uncertainties successfully would negatively affect our business.

A significant portion of our sales comes from one or more large customers, the loss of which could harm our business, financial condition, and operating results.

Historically, we have relied on a limited number of customers for a substantial portion of our total revenue. If we lost key customers, or if key customers reduced or stopped placing orders for our high-volume products, our financial results could be adversely affected. Sales to Sanshin Electronics Co., Ltd., Shenzhen Wisewheel Electronics Co., Ltd. and Worldshine Technology Ltd. accounted for 10% or more of our net revenue in fiscal 2019. During fiscal 2019, we had two OEM customers that integrated our products into their mobile products representing approximately 24% and 18% of our revenue and one OEM customer that integrated our products into their PC products that represented approximately 11% of our revenue; we sold to these customers primarily indirectly through multiple distributors. Significant reductions in sales to our largest customers, the loss of other major customers, or a general decrease in demand for our products within a short period of time could adversely affect our revenue, financial condition and business.

We sell to contract manufacturers that serve our OEM customers. Any material delay, cancellation, or reduction of orders from any one or more of these contract manufacturers or the OEMs they serve could harm our business, financial condition, and operating results. The adverse effect could be more substantial if our other customers do not increase their orders or if we are unsuccessful in generating orders for our solutions with new customers. Many of these contract manufacturers sell to the same OEMs, and therefore our concentration with certain OEMs may be higher than with any individual contract manufacturer. Concentration in our customer base may make fluctuations in revenue and earnings more severe and make business planning more difficult.

We are exposed to industry downturns and cyclicality in our target markets that may result in fluctuations in our operating results.

The consumer electronics industry has experienced significant economic downturns at various times. These downturns are characterized by diminished product demand, accelerated erosion of average selling prices, and production overcapacity. In addition, the consumer electronics industry is cyclical in nature. We seek to reduce our exposure to industry downturns and cyclicality by providing design and production services for leading companies in rapidly expanding industry segments. We may, however, experience substantial period-to-period fluctuations in future operating results because of general industry conditions or events occurring in the general economy.

We cannot assure you that our human interface business for new markets will be successful or that we will be able to continue to generate significant revenue from these markets.

Our product solutions may not be successful in new markets despite the fact that these product solutions are capable of enabling people to interact more easily and intuitively with a wide variety of personal computer, mobile computing, communications, entertainment, automotive, electronic and smart devices.

Various target markets for our interface solutions, such as automotive touchscreens, and IoT, may develop slower than anticipated or could utilize competing technologies. The markets for certain of these products depend in part upon the continued development and deployment of wireless and other technologies, which may or may not address the needs of the users of these products.

Our ability to generate significant revenue from new markets will depend on various factors, including the following:

- the development and growth of these markets;
- the ability of our technologies and product solutions to address the needs of these markets, the price and performance requirements of OEMs, and the preferences of end users; and
- our ability to provide OEMs with human interface solutions that provide advantages in terms of size, power consumption, reliability, durability, performance, and value-added features compared with alternative solutions.

Many manufacturers of these products have well-established relationships with competitive suppliers. Our ongoing success in these markets will require us to offer better performance alternatives to other solutions at competitive costs. The failure of any of these target markets to develop as we expect, or our failure to serve these markets to a significant extent, will impede our sales growth and could result in substantially reduced earnings and a restructuring of our operations. We cannot predict the size or growth rate of these markets or the market share we will achieve or maintain in these markets in the future.

If we fail to maintain and build relationships with our customers, or our customers' products which utilize our human interface solutions do not gain widespread market acceptance, our revenue may stagnate or decline.

We do not sell any products to end users and we do not control or influence the manufacture, promotion, distribution, or pricing of the products that incorporate our human interface solutions. Instead, we design various human interface solutions that our OEM customers incorporate into their products, and we depend on such OEM customers to successfully manufacture and distribute products incorporating our solutions and to generate consumer demand through marketing and promotional activities. As a result of this, our success depends almost entirely upon the widespread market acceptance of our OEM customers' products that incorporate our human interface solutions. Even if our technologies successfully meet our customers' price and performance goals, our sales would decline or fail to develop if our customers do not achieve commercial success in selling their products that incorporate our human interface solutions.

We must maintain our relationships with our existing customers, particularly with leading notebook computer, smartphone and tablet OEMs, and expand our relationships with IoT OEMs. Our customers generally do not provide us with firm, long-term volume purchase commitments, opting instead to issue purchase orders that they can cancel, reduce, or delay, subject to certain limitations. In order to meet the expectations of our customers, we must provide innovative human interface solutions on a timely and cost-effective basis. This requires us to match our design and production capacity with customer demand, maintain satisfactory delivery schedules, and meet performance goals. If we are unable to achieve these goals for any reason, our sales may decline or fail to develop, which would result in decreasing revenue.

In addition to maintaining and expanding our customer relationships, we must also identify areas of significant growth potential in other markets, establish relationships with OEMs in those markets, and assist those OEMs in developing products that incorporate our human interface product solutions. Our failure to identify potential growth opportunities, particularly in the smartphone and the tablet market, the PC product applications market, or the IoT market, or our failure to establish and maintain relationships with OEMs in those markets, would prevent our business from growing in those markets.

We depend on third parties to maintain satisfactory manufacturing yields and delivery schedules, and their inability to do so could increase our costs, disrupt our supply chain, and result in our inability to deliver our products, which would adversely affect our operating results.

We depend on our contract manufacturers and semiconductor fabricators to maintain high levels of productivity and satisfactory delivery schedules at manufacturing and assembly facilities located primarily in China, Taiwan, and Thailand. We provide our contract manufacturers with six-month rolling forecasts of our production requirements. We generally do not, however, have long-term agreements with our contract manufacturers that guarantee production capacity, prices, lead times, or delivery schedules. On occasion, customers require rapid increases in production, which can strain our resources and reduce our margins. Although we have been able to obtain increased production capacity from our third-party contract manufacturers in the past, there is no guarantee that our contract manufacturers will be able to increase production capacity to meet customer demands in the future. Our contract manufacturers also serve other customers, a number of which have greater production requirements than we do. As a result, our contract manufacturers could determine to prioritize production capacity for other customers or reduce or eliminate deliveries to us on short notice. Qualifying new contract manufacturers, and specifically semiconductor foundries, is time consuming and might result in unforeseen manufacturing and operations problems. We may also encounter lower manufacturing yields and longer delivery schedules in commencing volume production of new products that we introduce, which could increase our costs or disrupt our supply of such products. The loss of relationships with our contract manufacturers or assemblers, or their inability to conduct their manufacturing and assembly services for us as anticipated in terms of capacity, cost, quality, and timeliness could adversely affect our ability to fill customer orders in accordance with required delivery, quality, and performance requirements, and adversely affect our operating results.

Shortages of components and materials may delay or reduce our sales and increase our costs, thereby harming our operating results.

The inability to obtain sufficient quantities of components and other materials necessary for the production of our products could result in reduced or delayed sales or lost orders. Many of the materials used in the production of our products are available only from a limited number of foreign suppliers, particularly suppliers located in Asia. In most cases, neither we nor our contract manufacturers have long-term supply contracts with these suppliers. As a result, we are subject to increased costs, supply interruptions, and difficulties in obtaining materials. Our customers also may encounter difficulties or increased costs in obtaining the materials necessary to produce their products into which our product solutions are incorporated. Future shortages of materials and components, including potential supply constraints of silicon, could cause delayed shipments and customer dissatisfaction, which may result in lower revenue.

We are subject to lengthy development periods and product acceptance cycles, which can result in development and engineering costs without any future revenue.

We provide human interface solutions that are incorporated by OEMs into the products they sell. OEMs make the determination during their product development programs whether to incorporate our solutions or pursue other alternatives. This process requires us to make significant investments of time and resources in the design of human interface solutions for our OEMs' products well before our customers introduce their products incorporating our interface solutions into the market, and before we can be sure that we will generate any significant sales to our customers or even recover our investment. During a customer's entire product development process, we face the risk that our interfaces will fail to meet our customer's technical, performance, or cost requirements, or that our products will be replaced by competitive products or alternative technological solutions. Even if we complete our design process in a manner satisfactory to our customer, the customer may delay or terminate its product development efforts. The occurrence of any of these events could cause sales to not materialize, be deferred, or be cancelled, which could adversely affect our operating results.

We face intense competition that could result in our losing or failing to gain market share and suffering reduced revenue.

We serve intensely competitive markets that are characterized by price erosion, rapid technological change, and competition from major domestic and international companies. This intense competition could result in pricing pressures, lower sales, reduced margins, and lower market share. Depressed economic conditions, a slowdown in the PC, mobile or IoT product applications markets, the emergence of new products not including our product solutions, rapid changes in the smartphone or IoT markets and competitive pressures may result in lower demand for our product solutions and reduced unit margins.

Any movement away from high-quality, custom-designed, feature-rich human interface solutions to lower priced alternatives would adversely affect our business. Some of our competitors, particularly in the markets for mobile product applications and other electronic devices, have greater market recognition, larger customer bases, and substantially greater financial, technical, marketing, distribution, and other resources than we possess and that afford them greater competitive advantages. As a result, they may be able to devote greater resources to the promotion and sale of products, negotiate lower prices for raw materials and components, deliver competitive products at lower prices, and introduce new product solutions and respond to customer requirements more quickly than we can. Our competitive position could suffer if one or more of our customers determine not to utilize our custom engineered, total solutions approach and instead, decide to design and manufacture their own interfaces, contract with our competitors, or use alternative technologies.

Our ability to compete successfully depends on a number of factors, both within and outside our control. These factors include the following:

- our success in designing and introducing new human interface solutions, including those implementing new technologies;
- our ability to predict the evolving needs of our customers and to assist them in incorporating our technologies into their new and existing products;
- our ability to meet our customers' requirements for low power consumption, ease of use, reliability, durability, and small form factor;
- our ability to meet our customers' price and performance requirements;
- the quality of our customer service and support;
- the rate at which customers incorporate our human interface solutions into their own products;
- product or technology introductions by our competitors; and
- foreign currency fluctuations, which may cause a foreign competitor's products to be priced significantly lower than our product solutions.

If we do not keep pace with technological innovations, our products may not remain competitive and our revenue and operating results may suffer.

We operate in rapidly changing, highly competitive markets. Technological advances, the introduction of new products and new design techniques could adversely affect our business unless we are able to adapt to changing conditions. Technological advances could render our solutions less competitive or obsolete, and we may not be able to respond effectively to the technological requirements of evolving markets. Therefore, we will be required to expend substantial funds for and commit significant resources to enhancing and developing new technology, which may include purchasing advanced design tools and test equipment, hiring additional highly qualified engineering and other technical personnel, and continuing and expanding research and development activities on existing and potential human interface solutions.

Our research and development efforts with respect to new technologies may not result in customer or market acceptance. Some or all of those technologies may not successfully make the transition from the research and development stage to cost-effective production as a result of technology problems, competitive cost issues, yield problems, and other factors. Even if we successfully complete a research and development effort with respect to a particular technology, our customers may decide not to introduce or may terminate products utilizing the technology for a variety of reasons, including difficulties with other suppliers of components for the products, superior technologies developed by our competitors and unfavorable comparisons of our solutions with these technologies, price considerations and lack of anticipated or actual market demand for the products.

Our business could be harmed if we are unable to develop and utilize new technologies that address the needs of our customers, or our competitors or customers develop and utilize new technologies more effectively or more quickly than we can. Any investments made to enhance or develop new technologies that are not successful could have an adverse effect on our net revenue and operating results.

We may not be able to enhance our existing product solutions and develop new product solutions in a timely manner.

Our future operating results will depend to a significant extent on our ability to continue to provide new human interface solutions that compare favorably with alternative solutions on the basis of time to introduction, cost, performance, and end user preferences. Our success in maintaining existing customers, attracting new customers, and developing new business depends on various factors, including the following:

- innovative development of new solutions for customer products;
- utilization of advances in technology;
- maintenance of quality standards;
- performance advantages;
- efficient and cost-effective solutions; and
- timely completion of the design and introduction of new human interface solutions.

Our inability to enhance our existing product solutions and develop new product solutions on a timely basis could harm our operating results and impede our growth.

Additionally, our human interface solutions are designed to integrate touch, handwriting, vision and voice capabilities. New computing and communications devices could be developed that call for a different interface solution. Existing devices could also be modified to allow for a different interface solution. Our business could be harmed if our products become noncompetitive as a result of a technological breakthrough that allows a new interface solution to displace our solutions and achieve significant market acceptance.

Changes to import, export and economic sanction laws may expose us to liability, increase our costs and adversely affect our operating results.

As a global company headquartered in the U.S., we are subject to U.S. laws and regulations, including import, export and economic sanction laws. These laws may include prohibitions on the sale or supply of certain products to embargoed or sanctioned countries, regions, governments, persons and entities, may require an export license prior to the export of the controlled item, or may otherwise limit and restrict the export of certain products and technologies. Many of our customers, suppliers and contract manufacturers are foreign companies or have significant foreign operations. The imposition of new or additional economic and trade sanctions against our major customers, suppliers or contract manufacturers could result in our inability to sell to, and generate revenue from such customer, supplier or contract manufacturer. As a result of restrictive export laws, our customers may also develop their own solutions to replace our products or seek to obtain a greater supply of similar or substitute products from our competitors that are not subject to these restrictions, which could material and adversely affect our business and results of operations.

In addition, compliance with additional export regulations may result in increased costs to the company. Although we have an export compliance program, maintaining and adapting our export controls program to new and shifting regulations is expensive, time-consuming and requires significant management attention. Failure to comply with trade or economic sanctions could subject the company to legal liabilities and fines from the U.S. government. We must also comply with export restrictions and laws imposed by other countries affecting trade and investments. Although these restrictions and laws have not materially restricted our operations in the recent past, there is a significant risk that they could do so in the future, which would materially and adversely affect our business and results of operations.

Changes to international trade policy and rising concerns of international tariffs, including tariffs applied to goods traded between the United States and China, could materially and adversely affect our business and results of operations.

Many of the materials used in the production of our products are available only from a limited number of foreign suppliers, particularly suppliers located in Asia. The imposition of tariffs against foreign imports of certain materials could make it more difficult or expensive for us or our OEMs to obtain sufficient quantities of components and other materials necessary for the production of our products or products which incorporate our human interface product solutions. Any interruptions to supply could result in delay or cancellation of our products, which could adversely affect our business and operating results.

In addition, the institution of trade tariffs both globally and between the U.S. and China carry the risk that China's overall economic condition may be negatively affected, which could affect our China operations, including the manufacturing operations on which we rely in China. Further, imposition of tariffs could cause a decrease in the sales of our products to customers located in China or to our OEMs selling to customers in China, which could impact our business, revenue and operating results.

International sales and manufacturing risks could adversely affect our operating results.

Our manufacturing and assembly operations are primarily conducted in China, Taiwan, and Thailand by contract manufacturers and semiconductor fabricators. We have sales and logistics operations in Hong Kong, and sales and engineering design support operations in Armenia, China, Denmark, India, Japan, Korea, Switzerland, and Taiwan. These international operations expose us to various economic, political, and other risks that could adversely affect our operations and operating results, including the following:

- difficulties and costs of staffing and managing a multinational organization;
- unexpected changes in regulatory requirements;
- differing labor regulations;
- potentially adverse tax consequences;
- possible employee turnover or labor unrest;
- greater difficulty in collecting accounts receivable;
- the burdens and costs of compliance with a variety of foreign laws;
- the volatility of currency exchange rates;
- potentially reduced protection for intellectual property rights;
- political or economic instability in certain parts of the world; and
- natural disasters, including earthquakes or tsunamis.

If any of these risks associated with international operations materialize, our operations could significantly increase in cost or be disrupted, which would negatively affect our revenue and operating results.

Our operating results could be adversely affected by fluctuations in the value of the U.S. dollar against foreign currencies.

We transact business predominantly in U.S. dollars, and we invoice and collect our sales in U.S. dollars. A weakening of the U.S. dollar could cause our overseas vendors to require renegotiation of either the prices or currency we pay for their goods and services. In the future, customers may negotiate pricing and make payments in non-U.S. currencies. For fiscal 2019, approximately 11% of our costs were denominated in non-U.S. currencies, including Armenian dram, Canadian dollars, European Union euro, Hong Kong dollars, Indian rupee, New Taiwan dollars, Japanese yen, Korean won, Chinese yuan, and Swiss francs.

If our overseas vendors or customers require us to transact business in non-U.S. currencies, fluctuations in foreign currency exchange rates could affect our cost of goods, operating expenses, and operating margins, and could result in exchange losses. In addition, currency devaluation could result in a loss to us if we hold deposits of that currency. Hedging foreign currencies can be difficult, especially if the currency is not freely traded. We cannot predict the impact of future exchange rate fluctuations on our operating results.

If we fail to manage our growth effectively, our infrastructure, management, and resources could be strained, our ability to effectively manage our business could be diminished, and our operating results could suffer.

The failure to manage our planned growth effectively could strain our resources, which would impede our ability to increase revenue. We have increased the number of our human interface solutions in the past and may plan to further expand the number and diversity of our solutions and their use in the future. Our ability to manage our planned diversification and growth effectively will require us to:

- successfully hire, train, retain, and motivate additional employees, including employees outside the United States;
- efficiently plan, expand or cost-effectively reduce our facilities to meet headcount requirements;
- enhance our global operational, financial, and management infrastructure; and
- expand our development and production capacity.

In connection with the expansion and diversification of our product and customer base, we may increase our personnel and make other expenditures to meet demand for our expanding product offerings, including offerings in the mobile product applications market, the PC applications market, and the IoT market. Any increase in expenses or investments in infrastructure and facilities in anticipation of future orders that do not materialize would adversely affect our profitability. Our customers also may require rapid increases in design and production services that place an excessive short-term burden on our resources and the resources of our contract manufacturers. An inability to quickly expand our development, design or production capacity or an inability of our third-party manufacturers to quickly expand development, design or production capacity to meet this customer demand could result in a decrease to our revenue or operating results. If we cannot manage our growth effectively, our business and operating results could suffer.

We depend on key personnel who would be difficult to replace, and our business will likely be harmed if we lose their services or cannot hire additional qualified personnel.

Our success depends substantially on the efforts and abilities of our senior management and other key personnel. The competition for qualified management and key personnel, especially engineers, is intense. Although we maintain nondisclosure covenants with most of our key personnel, and our key executives have change of control severance agreements, we do not have employment agreements with many of them. The loss of services of one or more of our key employees or the inability to hire, train, and retain key personnel, especially engineers and technical support personnel, and capable sales and customer-support employees outside the United States, could delay the development and sale of our products, disrupt our business, and interfere with our ability to execute our business plan.

If we are unable to obtain stockholder approval of share-based compensation award programs or additional shares for such programs, we could be at a competitive disadvantage in the marketplace for qualified personnel or may be required to increase the cash element of our compensation program.

Competition for qualified personnel in our industry is extremely intense, particularly for engineering and other technical personnel. Our compensation program, which includes cash and share-based compensation award components, has been instrumental in attracting, hiring, motivating, and retaining qualified personnel. Our success depends on our continued ability to use our share-based compensation programs to effectively compete for engineering and other technical personnel and professional talent without significantly increasing cash compensation costs. In the future, if we are unable to obtain stockholder approval of our share-based compensation programs or additional shares for such programs, we could be at a competitive disadvantage in the marketplace for qualified personnel or we may be required to increase the cash elements of our compensation program to account for this disadvantage.

Our ability to compete successfully and continue growing as a company depends on our ability to adequately protect our proprietary technology and confidential information.

We protect our proprietary technology and confidential information through the use of patents, trade secrets, trademarks, confidentiality agreements and other contractual provisions. The process of seeking patent protection is lengthy and expensive. Further, there can be no assurance that even if a patent is issued, that it will not be challenged, invalidated or circumvented, or that the rights granted under the patents will provide us with meaningful protection or any commercial advantage.

We have not applied for, and do not have, any copyright registration on our technologies or products. We have applied to register certain of our trademarks in the United States and other countries. There can be no assurance that we will obtain registrations of principal or other trademarks in key markets. Failure to obtain registrations could compromise our ability to fully protect our trademarks and brands, and could increase the risk of challenge from third parties to our use of our trademarks and brands. Effective intellectual property protection may be unavailable or limited in some foreign countries in which we operate. In particular, the validity, enforceability and scope of protection of intellectual property in China, where we derive a significant portion of our net sales, and certain other countries where we derive net sales, are still evolving and historically, have not protected and may not protect in the future, intellectual property rights to the same extent as laws developed in the United States.

We do not consistently rely on written agreements with our customers, suppliers, manufacturers, and other recipients of our technologies and products and therefore, some trade secret protection may be lost and our ability to enforce our intellectual property rights may be limited. Confidentiality and non-disclosure agreements which are in place may not be adequate to protect our proprietary technologies or may be breached by other parties. Additionally, our customers, suppliers, manufacturers, and other recipients of our technologies and products may seek to use our technologies and products without appropriate limitations. In the past, we did not consistently require our employees and consultants to enter into confidentiality, employment, or proprietary information and invention assignment agreements. Therefore, our former employees and consultants may try to claim some ownership interest in our technologies and products, or may use our technologies and products competitively and without appropriate limitations. Unauthorized parties may attempt to copy or otherwise use aspects of our technologies and products that we regard as proprietary. Other companies, including our competitors, may independently develop technologies that are similar or superior to our technologies, duplicate our technologies, or design around our patents. If our intellectual property protection is insufficient to protect our intellectual property rights, we could face increased competition in the markets for our technologies and products.

We may pursue, and from time to time defend litigation to enforce our intellectual property rights, to protect our trade secrets, and to determine the validity and scope of the proprietary rights of others. These litigations, whether successful or unsuccessful, could result in substantial costs and diversion of resources, which could have a material adverse effect on our business, financial condition, and operating results.

Any claims that our technologies infringe the intellectual property rights of third parties could result in significant costs and have a material adverse effect on our business.

We cannot be certain that our technologies and products do not and will not infringe issued patents or other third party proprietary rights. Any claims, with or without merit, could result in significant litigation costs and diversion of resources, including the attention of management, and could require us to enter into royalty or licensing agreements, any of which could have a material adverse effect on our business. There can be no assurance that such licenses could be obtained on commercially reasonable terms, if at all, or that the terms of any offered licenses would be acceptable to us. We may also have to pay substantial damages to third parties, or indemnify customers or licensees for damages they suffer if the products they purchase from us or the technology they license from us violates any third party intellectual property rights. An adverse determination in a judicial or administrative proceeding, or a failure to obtain necessary licenses to use such third-party technology could prevent us from manufacturing, using, or selling certain of our products, and there is no guarantee that we will be able to develop or acquire alternate non-infringing technology.

In addition, we license certain technology used in and for our products from third parties. These third-party licenses are granted with restrictions, and there can be no assurances that such third-party technology will remain available to us on commercially acceptable terms.

If third-party technology currently utilized in our products is no longer available to us on commercially acceptable terms, or if any third party initiates litigation against us for alleged infringement of their proprietary rights, we may not be able to sell certain of our products and we could incur significant costs in defending against litigation or attempting to develop or acquire alternate non-infringing products, which would have an adverse effect on our operating results.

If we become subject to product returns or claims resulting from defects in our products, we may incur significant costs resulting in a decrease in revenue.

We develop complex products in an evolving marketplace and generally warrant our products for a period of 12 months from the date of delivery. Despite testing by us and our customers, defects may be found in existing or new products. Manufacturing errors or product defects could result in a delay in recognition or loss of revenue, loss of market share, or failure to achieve market acceptance. Additionally, defects could result in financial or other damages to our customers, causing us to incur significant warranty, support, and repair costs, and diverting the attention of our engineering personnel from key product development efforts.

Any acquisitions that we undertake could be difficult to integrate, disrupt our business, dilute stockholder value, and harm our operating results.

We expect to continue to pursue opportunities to acquire other businesses and technologies in order to complement our current human interface solutions, expand the breadth of our markets, enhance our technical capabilities, or otherwise create growth opportunities. We cannot accurately predict the timing, size, and success of any currently planned or future acquisitions. We may be unable to identify suitable acquisition candidates or to complete the acquisitions of candidates that we identify. Increased competition for acquisition candidates or increased asking prices by acquisition candidates may increase purchase prices for acquisitions to levels beyond our financial capability or to levels that would not result in the returns required by our acquisition criteria. Acquisitions may also become more difficult in the future as we or others acquire the most attractive candidates. Unforeseen expenses, difficulties, and delays frequently encountered in connection with rapid expansion through acquisitions could inhibit our growth and negatively impact our operating results. If we make any future acquisitions, we could issue stock that would dilute existing stockholders' percentage ownership, incur substantial debt, assume contingent liabilities, or experience higher operating expenses.

We may be unable to effectively complete an integration of the management, operations, facilities, and accounting and information systems of acquired businesses with our own; efficiently manage, combine or restructure the operations of the acquired businesses with our operations; achieve our operating, growth, and performance goals for acquired businesses; achieve additional revenue as a result of our expanded operations; or achieve operating efficiencies or otherwise realize cost savings as a result of anticipated acquisition synergies. The integration of acquired businesses involves numerous risks, including the following:

- the potential disruption of our core business;
- the potential strain on our financial and managerial controls, reporting systems and procedures;
- potential unknown liabilities associated with the acquired business;
- costs relating to liabilities which we agree to assume;
- unanticipated costs associated with the acquisition;
- diversion of management’s attention from our core business;
- problems assimilating the purchased operations, technologies, or products;
- risks associated with entering markets and businesses in which we have little or no prior experience;

- failure of acquired businesses to achieve expected results;
- adverse effects on existing business relationships with suppliers and customers;
- failure to retain key customers, suppliers, or personnel of acquired businesses;
- the risk of impairment charges related to potential write-downs of acquired assets; and
- the potential inability to create uniform standards, controls, procedures, policies, and information systems.

We cannot assure you that we would be successful in overcoming problems encountered in connection with any acquisitions, and our inability to do so could disrupt our operations, result in goodwill or intangible asset impairment charges, and adversely affect our business.

Potential strategic alliances may not achieve their objectives, and the failure to do so could impede our growth.

We have entered, and we anticipate that we will continue to enter, into strategic alliances. We continually explore strategic alliances designed to enhance or complement our technology or to work in conjunction with our technology; to provide necessary know-how, components, or supplies; and to develop, introduce, and distribute products utilizing our technology. Certain strategic alliances may not achieve their intended objectives, and parties to our strategic alliances may not perform as contemplated. The failure of these alliances to achieve their objectives may impede our ability to introduce new products and enter new markets.

We must finance the growth of our business and the development of new products, which could have an adverse effect on our operating results.

To remain competitive, we must continue to make significant investments in research and development, marketing, and business development. Our failure to sufficiently increase our net revenue to offset these increased costs would adversely affect our operating results.

From time to time, we may seek additional equity or debt financing to provide for funds required to expand our business, including through acquisitions. We cannot predict the timing or amount of any such requirements at this time. If such financing is not available to us on satisfactory terms, we may be unable to expand our business or to develop new business at the rate desired and our operating results may suffer. If obtained, the financing itself carries risks including the following: (i) debt financing increases expenses and must be repaid regardless of operating results; and (ii) equity financing, including the issuance of convertible notes or additional shares in connection with acquisitions, could result in dilution to existing stockholders and could adversely affect the price of our common stock.

Transactions relating to our Convertible Notes may dilute the ownership interest of our stockholders, or may otherwise depress the price of our common stock.

The conversion of some or all of our outstanding 0.50% Convertible Senior Notes due 2022 (the “Notes”) would dilute the ownership interests of existing stockholders to the extent we deliver shares upon conversion of any such notes. If the Notes become convertible under the terms of the indenture, and if holders subsequently elect to convert their notes, we could be required to deliver to them a significant number of shares of our common stock. Any sales in the public market of the common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the Notes may encourage short selling by market participants because the conversion of such notes could be used to satisfy short positions. Additionally, anticipated conversion of such notes into shares of our common stock could depress the price of our common stock. Please see Note 6 Debt to the consolidated financial statements contained elsewhere in this report for more information about our Notes.

Our indebtedness could adversely affect our financial condition or operating flexibility and prevent us from fulfilling our obligations outstanding under our credit agreement, the Notes, and other indebtedness we may incur from time to time.

On June 26, 2017, we completed the offering of the Notes in the aggregate principal amount of $525.0 million, of which $220.0 million of the net proceeds were used to repay the amounts outstanding under our credit agreement (which we refer to herein, as amended and supplemented, as the “Credit Agreement”) with the lenders party thereto, or the Lenders, and Wells Fargo Bank, National Association, or the Administrative Agent, as administrative agent for the Lenders, with a corresponding reduction of revolver commitments under the Credit Agreement to $250.0 million, none of which was outstanding as of June 30, 2019. We are permitted under the indenture governing our Notes and the Credit Agreement to incur additional debt under certain conditions, including additional secured debt. If new debt were to be incurred in the future, the related risks that we now face could intensify.

Our level of indebtedness could have important consequences on our future operations, including:

- making it more difficult for us to satisfy our payment and other obligations under the Notes, the Credit Agreement or our other outstanding debt from time to time;
- risking an event of default if we fail to comply with the financial and other covenants contained in the Notes indenture or the Credit Agreement, which could result in the Notes or any outstanding bank debt becoming immediately due and payable and could permit the lenders under the Credit Agreement to foreclose on the assets securing such bank debt;
- subjecting us to the risk of increased sensitivity to interest rate increases on our debt with variable interest rates, including the debt that we may incur under the Credit Agreement;
- the LIBOR index is expected to be discontinued at the end of 2021 and the replacement rate could be more volatile or more costly, resulting in a higher cost of borrowing under our Credit Agreement;
- reducing the availability of our cash flows to fund working capital, capital expenditures, acquisitions and other general corporate purposes, and limiting our ability to obtain additional financing for these purposes;
- limiting our flexibility in planning for, or reacting to, and increasing our vulnerability to, changes in our business, the industry in which we operate and the general economy; and
- placing us at a competitive disadvantage compared to our competitors that have less debt or are less leveraged.

Our business may not generate sufficient cash flow from operations and future borrowings may not be available to us under the Credit Agreement, the indenture governing the Notes or otherwise in an amount sufficient to enable us to pay our debt or to fund our other liquidity needs.

The accounting method for convertible debt securities that may be settled in cash, such as the Notes, could have a material effect on our reported financial results.

In May 2008, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Codification, or ASC, 470-20, Debt with Conversion and Other Options. Under ASC 470-20, companies are required to separately account for the liability and equity components of convertible debt instruments that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer’s economic interest cost. The equity component of our Notes is required to be included in the additional paid-in capital section of stockholders’ equity on our consolidated balance sheet, and the value of the equity component is treated as an original issue discount for purposes of accounting for the debt component of the Notes. As a result, we are required to record a greater amount of non-cash interest expense in current periods presented as a result of the amortization of the discounted carrying value of the Notes to their face amount over the term of the Notes. ASC 470-20 requires interest to include both the current period’s amortization of the debt discount and the instrument’s coupon interest, which could adversely affect our reported or future financial results, the trading price of our common stock and the trading price of the Notes. In addition, under certain circumstances, the convertible debt instruments that may be settled entirely or partially in cash will be accounted for utilizing the treasury stock method beginning in the first quarter of fiscal 2018, the effect of which is that the shares issuable upon conversion of the Notes are not included in the calculation of diluted earnings per share except to the extent that the conversion value of the Notes exceeds their principal amount. Under the treasury stock method, for diluted earnings per share purposes, the transaction is accounted for as if the number of shares of common stock that would be necessary to settle such excess, if we elected to settle such excess in shares, are issued. We cannot be sure that the accounting standards in the future will continue to permit the use of the treasury stock method. If we are unable to use the treasury stock method in accounting for the shares issuable upon conversion of the Notes, then our diluted earnings per share would be adversely affected.

The covenants in the Credit Agreement impose restrictions that may limit our operating and financial flexibility.

The Credit Agreement includes certain covenants that limit (subject to certain exceptions) our ability to, among other things: (i) incur or guarantee additional indebtedness; (ii) incur or suffer to exist liens securing indebtedness; (iii) make investments; (iv) consolidate, merge or transfer all or substantially all of our assets; (v) sell assets; (vi) pay dividends or other distributions on, redeem or repurchase capital stock; (vii) enter into transactions with affiliates; (viii) amend, modify, prepay or redeem subordinated indebtedness; (ix) enter into certain restrictive agreements; (x) engage in a new line of business; and (xi) enter into sale leaseback transactions. In addition, the Credit Agreement contains financial covenants that (i) restrict the amount of capital expenditures that may be made in any fiscal year, (ii) require the ratio of the amount of our consolidated total indebtedness to consolidated EBITDA to be less than certain maximum ratio levels, and (iii) require the ratio of the amount of our consolidated EBITDA to consolidated interest expense to be greater than a certain minimum ratio level.

If we violate these covenants and are unable to obtain waivers, our debt under the Credit Agreement would be in default and could be accelerated, and could permit, in the case of secured debt, the lenders to foreclose on our assets securing the Credit Agreement. If the indebtedness is accelerated, we may not be able to repay our debt or borrow sufficient funds to refinance it. Even if we are able to obtain new financing, it may not be on commercially reasonable terms or on terms that are acceptable to us. If our debt is in default for any reason, our cash flows, results of operations or financial condition could be materially and adversely affected. In addition, complying with these covenants may also cause us to take actions that may make it more difficult for us to successfully execute our business strategy and compete against companies that are not subject to such restrictions.

If we are unable to maintain effective internal control over our financial reporting, we may incur significant expenses to remediate internal control deficiencies, lose investor confidence and our share price may decline.

We are subject to rules adopted by the SEC, pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, or SOX, which requires us to include in our quarterly and annual reports on Forms 10-Q and 10-K, our management's report on, and assessment of the effectiveness of, our internal control over financial reporting. We have concluded that our internal control over financial reporting is effective, however, we need to maintain our existing processes and systems and incorporate and adapt to new or improved processes and systems as our business grows and changes, including in connection with planned acquisitions. This continuous process of maintaining and adapting our internal controls and complying with SOX is expensive, time-consuming and requires significant management attention. We cannot be certain that we will be able to maintain adequate and effective internal controls over our, and our acquired companies' financial processes and reporting and ensure compliance with SOX and SEC rules. Further, as we grow our company, including through acquisitions, our internal controls may become more complex and may require significantly more resources to ensure they remain effective. Failure to comply with SOX and SEC rules, including a delay in or failure to successfully integrate new businesses into our internal control over financial reporting, a failure to implement required new or improved controls, or difficulties encountered in the implementation of such new or improved controls, could harm our operating results or cause us to not meet our reporting obligations. If we or our auditors identify material weaknesses in our internal controls, the disclosure of that fact, even if quickly remedied, may cause investors to lose confidence in our consolidated financial statements and the trading price of our common stock may decline. Remediation of a material weakness could require us to incur significant expense and expend significant management attention. Failure to remedy any material weakness could result in inaccurate financial statements, an inability for the company to report our financial results on a timely and accurate basis, a loss in investor confidence, decline in the trading price of our common stock, restriction on access to worldwide capital markets, and sanctions or investigation by regulatory authorities, including the SEC or the NASDAQ Global Select Market.

If tax laws change in the jurisdictions in which we do business or if we receive a material tax assessment in connection with an examination of our income tax returns, our consolidated financial position, results of operations and cash flows could be adversely affected.

We are subject to U.S. federal, state, and foreign income taxes in the various jurisdictions in which we do business. In addition, we are required to pay U.S. federal taxes on the operating earnings of certain of our foreign subsidiaries. Our future effective tax rates and the value of our deferred tax assets could be adversely affected by changes in tax laws in the U.S. or in the foreign jurisdictions in which we operate. In addition, we are subject to the examination of our income tax returns by the tax authorities in the jurisdictions in which we do business. The calculation of tax liabilities involves significant judgment in estimating the impact of uncertainties in the application of highly complex tax laws. Our results have in the past, and could in the future, include favorable and unfavorable adjustments to our estimated tax liabilities in the period a determination of such estimated tax liability is made or resolved, upon the filing of an amended return, upon a change in facts, circumstances, or interpretation, or upon the expiration of a statute of limitation. While we believe we have adequately provided for reasonably foreseeable outcomes in connection with the resolution of income tax uncertainties, the resolution of these uncertainties in a manner inconsistent with our expectations could have a material impact on our consolidated financial position, result of operations, or cash flows.

We may incur material environmental liabilities as a result of prior operations at an acquired company.

In connection with our acquisition in July 2017 of Conexant, we agreed to assume certain environmental liabilities, including remediation of environmental impacts at a property formerly owned and operated by Conexant (the “Conexant Site”) and for potential future claims alleging personal injury or property damage related to the environmental impacts at and about the Conexant Site. We continue to incur costs to investigate and remediate the Conexant Site’s environmental impacts, and we are at risk for future personal injury and property damage claims related to the Conexant Site. Various federal, state and local authorities regulate the release of hazardous substances into the environment and can impose substantial fines if our remediation efforts at or about the Conexant Site fail or are deemed inadequate. In addition, changes in laws, regulations and enforcement policies, the discovery of previously unknown contamination at the Conexant Site, the implementation of new technology at the Conexant Site, or the establishment or imposition of stricter federal, state, or local cleanup standards or requirements with respect to the Conexant Site could require us to incur additional costs in the future that could have a negative effect on our financial condition or results of operations.

We face risks associated with security breaches or cyber-attacks.

We face risks associated with security breaches or cyber-attacks of our computer systems or those of our third-party representatives, vendors, and service providers. Although we have implemented security procedures and controls to address these threats, our systems may still be vulnerable to data theft, computer viruses, programming errors, attacks by third parties, or similar disruptive problems. If our systems, or systems owned by third parties affiliated with our company, were breached or attacked, the proprietary and confidential information of our company, our employees and our customers could be disclosed and we may be required to incur substantial costs and liabilities, including the following: liability for stolen assets or information; fines imposed on us by governmental authorities for failure to comply with privacy laws or for disclosure of any personally identifiable information as a part of such attack; costs of repairing damage to our systems; lost revenue and income resulting from any system downtime caused by such breach or attack; loss of competitive advantage if our proprietary information is obtained by competitors as a result of such breach or attack; increased costs of cyber security protection; costs of incentives we may be required to offer to our customers or business partners to retain their business; damage to our reputation; and expenses to rectify the consequences of the security breach or cyber-attack. In addition, any compromise of security from a security breach or cyber-attack could deter customers or business partners from entering into transactions that involve providing confidential information to us. As a result, any compromise to the security of our systems could have a material adverse effect on our business, reputation, financial condition, and operating results.

The accounting requirements for income taxes on certain of our share-based compensation awards may subject our future quarterly and annual effective tax rates to volatility.

We recognize a tax benefit upon expensing nonqualified stock options and deferred stock units, or DSUs, issued under our share-based compensation plans. However, under current accounting standards, we cannot recognize that tax benefit concurrent with expensing incentive stock options and employee stock purchase plan shares (qualified stock options) issued under our share-based compensation plans. For qualified stock options that vested after our adoption of the applicable accounting standards, we recognize the tax benefit only in the period when disqualifying dispositions of the underlying stock occur and, for qualified stock options that vested prior to our adoption of the applicable accounting standards, the tax benefit is recorded directly to additional paid-in capital. Accordingly, because we cannot recognize the tax benefit for share-based compensation expense associated with qualified stock options until the occurrence of future disqualifying dispositions of the underlying stock, such disqualified dispositions may happen in periods when our stock price substantially increases, and because a portion of that tax benefit may be directly recorded to additional paid-in capital, our future quarterly and annual effective tax rates may be subject to volatility.

Our charter documents and Delaware law could make it more difficult for a third party to acquire us, and discourage a takeover.

Our certificate of incorporation and the Delaware General Corporation Law contain provisions that may have the effect of making more difficult or delaying attempts by others to obtain control of our company, even when such attempts may be in the best interests of our stockholders. Our certificate of incorporation also authorizes our Board of Directors, without stockholder approval, to issue one or more series of preferred stock, which could have voting and conversion rights that adversely affect or dilute the voting power of the holders of our common stock. Delaware law also imposes conditions on certain business combination transactions with "interested stockholders." Our certificate of incorporation divides our Board of Directors into three classes, with one class to stand for election each year for a three-year term after the election. The classification of directors tends to discourage a third party from initiating a proxy solicitation or otherwise attempting to obtain control of our company and may maintain the incumbency of our Board of Directors, as this structure generally increases the difficulty of, or may delay, replacing a majority of directors. Our certificate of incorporation authorizes our Board of Directors to fill vacancies or newly created directorships. A majority of the directors then in office may elect a successor to fill any vacancies or newly created directorships, thereby increasing the difficulty of, or delaying a third party's efforts in, replacing a majority of directors.

The market price of our common stock has been and may continue to be volatile.

The trading price of our common stock has been and may continue to be subject to wide fluctuations in response to various factors, including the following:

- variations in our quarterly results;
- the financial guidance we may provide to the public, any changes in such guidance, or our failure to meet such guidance;
- changes in financial estimates by industry or securities analysts or our failure to meet such estimates;
- various market factors or perceived market factors, including rumors, whether or not correct, involving us, our customers, our suppliers, our competitors, or a potential acquisition of our company;
- announcements of technological innovations by us, our competitors, or our customers;
- introductions of new products or new pricing policies by us, our competitors, or our customers;
- acquisitions or strategic alliances by us, our competitors, or our customers;
- recruitment or departure of key personnel;
- the gain or loss of significant orders;
- the gain or loss of significant customers;
- market conditions in our industry, the industries of our customers, and the economy as a whole;
- short positions held by investors;
- new federal and state laws and regulations affecting our industry; and
- general financial market conditions or occurrences, including market volatility resulting from geopolitical risks, and rivalries, acts of war, terrorist attacks, cybersecurity attacks, financial market technological glitches and interruptions of trading activity.

In addition, stocks of technology companies have experienced extreme price and volume fluctuations that often have been unrelated or disproportionate to these companies' operating performance. Public announcements by technology companies concerning, among other things, their performance, accounting practices, or legal problems could cause the market price of our common stock to decline regardless of our actual operating performance.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

Our principal executive offices, as well as our principal research and development, sales, marketing, and administrative functions, are located in San Jose, California, where we own and utilize approximately 210,000 square feet of facilities. We also have research and development functions in leased offices in California, Georgia and Texas. Our two Asia/Pacific principal offices are located in leased offices in Hong Kong and Japan, where we have sales, operations, and research and development functions. We have leased facilities with logistics operations in Hong Kong and Japan, leased facilities with sales and support operations in China, Denmark, Hong Kong, Japan, Korea, Switzerland and Taiwan, and leased facilities with engineering design support operations in Armenia, China, India, Japan, Korea, Switzerland, Taiwan and California, U.S.

ITEM 3. LEGAL PROCEEDINGS

We are party to various litigation matters and claims arising from time to time in the ordinary course of business. While the results of such matters cannot be predicted with certainty, we believe that the final outcome of such matters will not have a material adverse effect on our business, financial condition, results of operations or cash flows.

For further information regarding current legal proceedings, see Note 7 Commitments and Contingencies to the consolidated financial statements contained elsewhere in this report.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information on Common Stock

Our common stock has been listed on the NASDAQ Global Select Market (formerly the Nasdaq National Market) under the symbol "SYNA" since January 29, 2002. Prior to that time, there was no public market for our common stock.

Stockholders

As of August 19, 2019, there were approximately 133 holders of record of our common stock. The closing price of our common stock as quoted on the NASDAQ Global Select Market as of August 19, 2019 was $34.68.

Dividends

We have never declared or paid cash dividends on our common stock. We currently plan to retain all earnings to finance the growth of our business, make our debt payments, or purchase shares under our common stock repurchase program. Payments of any cash dividends in the future will depend on our financial condition, operating results, and capital requirements, as well as other factors deemed relevant by our Board of Directors.

Our Credit Agreement also places restrictions on the payment of any dividends. For a further description of the terms of the Credit Agreement, see Note 6 Debt to the consolidated financial statements contained elsewhere in this report.

Stock-Based Compensation

For information on securities authorized for issuance under our equity compensation plans, see Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

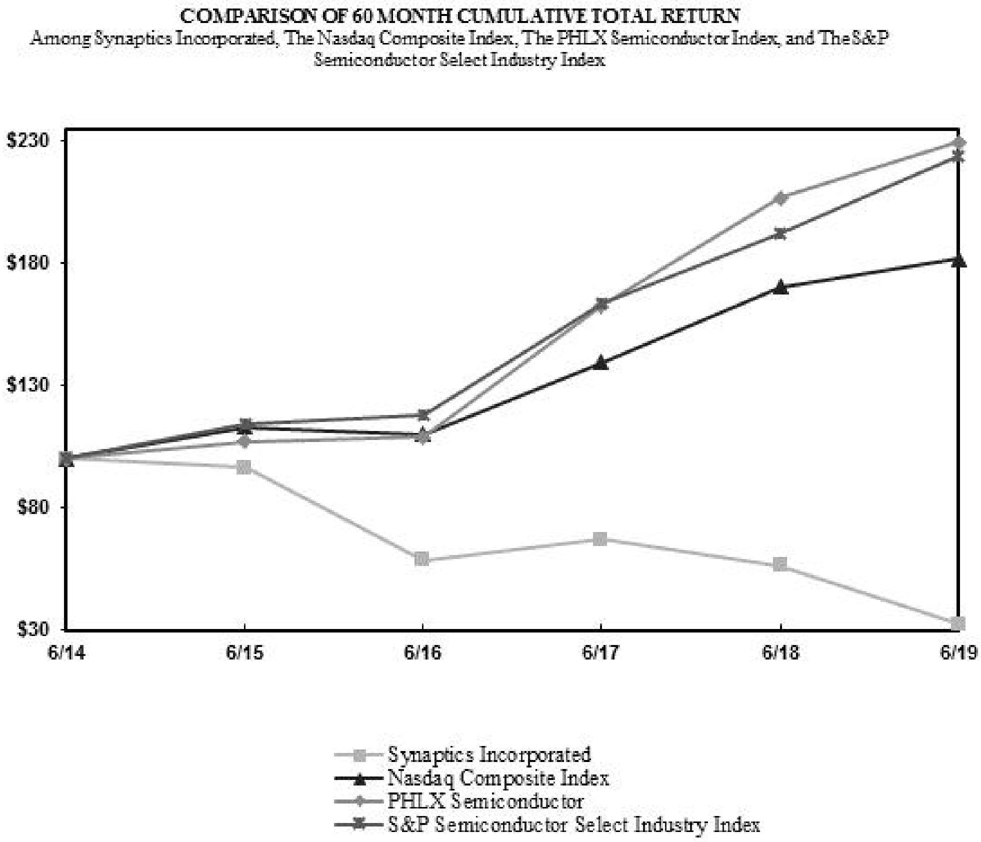
Issuer Purchases of Equity Securities

From April 2005 through August 2019, our Board of Directors cumulatively authorized $1.4 billion for our common stock repurchase program, which expires in July 2021 (which includes the August 2019 authorization by the Board of Directors of up to an additional $100 million of our common stock and extended the expiration date by two years). Subsequent to the end of our fiscal 2019, we purchased 555,663 shares of our common stock for $17.0 million. The remaining amount authorized for repurchase under our stock repurchase program was $190.6 million as of August 5, 2019. During the three-month period ended June 30, 2019, repurchases under the stock repurchase program were as follows:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Program
March 31, 2019 - April 27, 2019	—		—	$ 148,792,320
April 28, 2019 - May 25, 2019	320,000	$ 30.16	320,000	139,141,747
May 26, 2019 - June 29, 2019	1,124,337	28.06	1,124,337	107,595,953
Total	1,444,337			

Performance Graph

The following line graph compares cumulative total stockholder returns for the five years ended June 30, 2019 for (i) our common stock, (ii) the Nasdaq Composite Index (iii) the Philadelphia Semiconductor Index and (iv) the S&P Semiconductor Select Industry Index. The graph assumes an investment of $100 on June 30, 2014. The calculations of cumulative stockholder return on the Nasdaq Composite Index, the Philadelphia Semiconductor Index (PHLX), and the S&P Semiconductor Select Industry Index include reinvestment of dividends. The calculation of cumulative stockholder return on our common stock does not include reinvestment of dividends because we did not pay any dividends during the measurement period. The historical performance shown is not necessarily indicative of future performance.



The performance graph above shall not be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section. The performance graph above will not be deemed incorporated by reference into any filing of our company under the Exchange Act or the Securities Act.

ITEM 6. SELECTED FINANCIAL DATA

The following table presents selected financial data for each fiscal year in the five-year period ended June 30, 2019. Our fiscal year is the 52- or 53-week period ending on the last Saturday in June. Fiscal 2018 was a 53-week period and all other fiscal years presented were 52-week periods. Our past results of operations are not necessarily indicative of our future results of operations. You should read the selected financial data below in conjunction with Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and our consolidated financial statements and related notes contained elsewhere in this report.

	2019	2018	2017	2016	2015
	(in millions, except per share amounts)				
Consolidated Statements of Operations Data:					
Net revenue	$ 1,472.2	$ 1,630.3	$ 1,718.2	$ 1,666.9	$ 1,703.0
Cost of revenue	975.1	1,150.2	1,194.6	1,085.4	1,124.3
Gross margin	497.1	480.1	523.6	581.5	578.7
Operating expenses:					
Research and development	341.1	363.2	292.3	311.2	293.2
Selling, general, and administrative	130.4	154.0	137.6	161.7	127.9
Acquired intangibles amortization	11.7	12.8	11.7	18.6	14.2
Impairment of acquired intangibles	—	—	—	6.7	—
Change in contingent consideration	—	—	—	(0.5)	(18.8)
Restructuring costs	17.7	12.0	7.3	8.6	—
Retention costs	2.5	—	—	—	—
Litigation settlement charge	—	—	10.0	—	—
Total operating expenses	503.4	542.0	458.9	506.3	416.5
Operating income/(loss)	(6.3)	(61.9)	64.7	75.2	162.2
Interest income	3.9	2.3	0.7	3.1	1.6
Interest expense	(21.2)	(22.2)	(6.0)	(4.8)	(3.8)
Impairment recovery on investments, net	2.8	—	1.9	2.1	0.2
Income/(loss) before provision for income taxes and equity investment loss	(20.8)	(81.8)	61.3	75.6	160.2
Provision for income taxes	0.3	40.5	12.2	3.4	49.8
Equity investment loss	(1.8)	(1.8)	(0.3)	—	—
Net income/(loss)	$ (22.9)	$ (124.1)	$ 48.8	$ 72.2	$ 110.4
Net income/(loss) per share:					
Basic	$ (0.66)	$ (3.63)	$ 1.40	$ 1.97	$ 2.99
Diluted	$ (0.66)	$ (3.63)	$ 1.37	$ 1.91	$ 2.84
Shares used in computing net income/(loss) per share:					
Basic	34.6	34.2	34.8	36.6	36.9
Diluted	34.6	34.2	35.6	37.9	38.9
Consolidated Balance Sheets Data:					
Cash, cash equivalents, and short-term investments	$ 327.8	$ 301.0	$ 367.8	$ 352.2	$ 399.9
Working capital	477.2	455.7	481.6	429.3	469.3
Total assets	1,409.8	1,499.8	1,266.7	1,300.2	1,519.4
Long-term debt	—	—	202.0	216.7	231.1
Convertible notes, net	468.3	450.7	—	—	—
Treasury shares, at cost	1,192.4	1,073.9	980.3	892.3	651.7
Total stockholders' equity	657.3	729.3	740.2	705.0	793.1

Our basic net income/(loss) per share amounts for each period presented have been computed using the weighted average number of shares of common stock outstanding. Our diluted net income/(loss) per share amounts for each period presented include the weighted average effect of potentially dilutive shares. We used the "treasury stock" method to determine the dilutive effect of our stock options, Deferred Stock Units, or DSUs, Market Stock Units, or MSUs, and our Notes.

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

Forward-Looking Statements and Factors That May Affect Results

You should read the following discussion and analysis in conjunction with our financial statements and related notes contained elsewhere in this report. This discussion contains forward-looking statements that involve risks, uncertainties, and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of a variety of factors, including those set forth elsewhere in this report and under Item 1A. Risk Factors.

Overview

We are a leading worldwide developer and supplier of custom-designed human interface semiconductor product solutions that enable people to interact more easily and intuitively with a wide variety of mobile computing, communications, entertainment, and other electronic devices. We believe our results to date reflect the combination of our customer focus and the strength of our intellectual property and our engineering know-how, which allow us to develop or engineer products that meet the demanding design specifications of our OEMs.

We recognize revenue when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to receive in exchange for those goods or services. All of our revenue, except an inconsequential amount, is recognized at a point in time, either on shipment or delivery of the product, depending on customer terms and conditions. Our net revenue decreased from $1,703.0 million for fiscal 2015 to $1,472.2 million for fiscal 2019. For fiscal 2015, we derived 15.3% of our net revenue from the PC market and 84.7% of our net revenue from the mobile product applications market. For fiscal 2019, revenue from the PC market accounted for 17.6% of our net revenue, revenue from the mobile product applications market accounted for 61.1% of our net revenue, and revenue from the IoT product applications market accounted for 21.3% of our net revenue.

Many of our customers have manufacturing operations in China, and many of our OEM customers have established design centers in Asia. With our expanding global presence, including offices in Armenia, China, Denmark, Hong Kong, India, Japan, Korea, Switzerland, Taiwan, and the United States, we are well positioned to provide local sales, operational, and engineering support services to our existing customers, as well as potential new customers, on a global basis.

Our manufacturing operations are based on a variable cost model in which we outsource all of our production requirements and generally drop ship our products directly to our customers from our contract manufacturers' facilities, eliminating the need for significant capital expenditures and allowing us to minimize our investment in inventories. This approach requires us to work closely with our contract manufacturers and semiconductor fabricators to ensure adequate production capacity to meet our forecasted volume requirements. We provide our contract manufacturers with six-month rolling forecasts and issue purchase orders based on our anticipated requirements for the next 90 days. However, we do not have long-term supply contracts with most of our contract manufacturers. We use third-party wafer manufacturers to supply wafers and third-party packaging manufacturers to package our proprietary ASICs. In certain cases, we rely on a single source or a limited number of suppliers to provide other key components of our products. Our cost of revenue includes all costs associated with the production of our products, including materials, logistics, amortization of intangibles related to acquired developed technology, backlog, and supplier arrangements, manufacturing, assembly, and test costs paid to third-party manufacturers, and related overhead costs associated with our indirect manufacturing operations personnel. Additionally, we charge all warranty costs, losses on inventory purchase obligations, and write-downs to reduce the carrying value of obsolete, slow moving, and non-usable inventory to net realizable value to cost of revenue.

Our gross margin generally reflects the combination of the added value we bring to our OEM customers' products by meeting their custom design requirements and the impact of our ongoing cost-improvement programs. These cost-improvement programs include reducing materials and component costs and implementing design and process improvements. Our newly introduced products may have lower margins than our more mature products, which have realized greater benefits associated with our ongoing cost-improvement programs. As a result, new product introductions may initially negatively impact our gross margin.

Our research and development expenses include costs for supplies and materials related to product development as well as the engineering costs incurred to design ASICs and human interface solutions for OEM customers prior to and after their commitment to incorporate those solutions into their products. We continue to commit to the technological and design innovation required to maintain our position in our existing markets, and to adapt our existing technologies or develop new technologies for new markets.

Selling, general, and administrative expenses include expenses related to sales, marketing, and administrative personnel; internal sales and outside sales representatives' commissions; market and usability research; outside legal, accounting, and consulting costs; and other marketing and sales activities.

Acquired intangibles amortization is the amortization of the cost of our acquired intangible assets related to customer relationships and tradenames which are amortized over their estimated useful lives ranging from 3 to 7 years.

Restructuring costs primarily reflect severance and facilities consolidation costs related to restructuring of our operations to reduce operating costs. These headcount- and facilities-related costs were in cost of revenue, research and development, and selling, general and administrative. See Note 13 Restructuring Activities to the consolidated financial statements contained elsewhere in this report.

Retention costs reflect the cost associated with retention agreements entered into with key employees designed to ensure their continued commitment to the support and management of the operations of the company during the transition to new executive leadership. The retention period for employees covered under the retention program continues through November 2020.

The litigation settlement charge reflects costs recorded in connection with certain legal proceedings discussed under Note 7 Commitments and Contingencies to the consolidated financial statements contained elsewhere in this report.

Equity investment loss includes amortization of intangible assets reflected under the equity method of accounting in connection with our investment in OXi Technology Ltd. See Note 1 Organization and Summary of Significant Accounting Policies to the consolidated financial statements contained elsewhere in this report.

Acquisitions and Financing Activities

On June 11, 2017, we entered into a stock purchase agreement to acquire all of the outstanding limited liability company interests of Conexant Systems, LLC (the “Conexant Acquisition”). The Conexant Acquisition was intended to increase our presence in the smart home market and increase opportunities to grow revenue. Effective July 25, 2017, or the Closing Date, we completed the Conexant Acquisition. The results of Conexant are included in our consolidated financial statements for the period from July 25, 2017 through June 30, 2018. For further discussion of the Conexant Acquisition, see Note 4 Acquisitions to the consolidated financial statements contained elsewhere in this report.

On June 11, 2017, the Company entered into an asset purchase agreement to acquire the multimedia solutions business of Marvell (the “Marvell Business Acquisition”). The Marvell Business Acquisition was also intended to increase our presence in the smart home market and increase opportunities to grow revenue. Effective September 8, 2017, we completed the Marvell Business Acquisition. The results of Marvell are included in our consolidated financial statements for the period from September 8, 2017 through June 30, 2018. For further discussion of the Marvell Business Acquisition, see Note 4 Acquisitions to the consolidated financial statements contained elsewhere in this report.

On June 20, 2017, we entered into a purchase agreement (the “Purchase Agreement”) with Wells Fargo Securities, LLC, as representative of the several initial purchasers named therein (collectively, the “Initial Purchasers”), pursuant to which we issued and sold, and the Initial Purchasers purchased, $500 million aggregate principal amount of the Company’s 0.50% Convertible Senior Notes due 2022 (the “Notes”) in a private placement transaction. Pursuant to the Purchase Agreement, we also granted the Initial Purchasers a 30-day option to purchase up to an additional $25 million aggregate principal amount of Notes, which was exercised in full on June 21, 2017. The net proceeds from the offering, after deducting discounts and commissions and estimated offering expenses payable by the Company, were approximately $514.5 million, which includes proceeds from the exercise of the Initial Purchasers’ option to purchase additional Notes. The offering was completed on June 26, 2017. See Note 6 Debt to the consolidated financial statements contained elsewhere in this report.

Critical Accounting Policies and Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles, or GAAP, requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue, expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, allowance for doubtful accounts, cost of revenue, inventories, product warranty, share-based compensation costs, provision for income taxes, deferred income tax asset valuation allowances, uncertain tax positions, tax contingencies, goodwill, intangible assets, investments, and contingencies. We base our estimates on historical experience, applicable laws and regulations, and various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

The methods, estimates, interpretations, and judgments we use in applying our most critical accounting policies can have a significant impact on the results that we report in our consolidated financial statements. The SEC considers an entity’s most critical accounting policies to be those policies that are both most important to the portrayal of the entity’s financial condition and results of operations and those that require the entity’s most difficult, subjective, or complex judgments, often as a result of the need to make assumptions and estimates about matters that are inherently uncertain. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition

Our revenue is primarily generated from the sale of ASIC chips, either directly to a customer or to a distributor. Revenues are recognized when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to receive in exchange for those goods or services. All of our revenue, except an inconsequential amount, is recognized at a point in time, either on shipment or delivery of the product, depending on customer terms and conditions. We generally warrant our products for a period of 12 months from the date of sale and estimate probable product warranty costs at the time we recognize revenue as the warranty is considered an assurance warranty and not a performance obligation. Non-product revenue is recognized over the same period of time such performance obligations are satisfied. We then select an appropriate method for measuring satisfaction of the performance obligations.

Revenue from sales to distributors is recognized upon shipment of the product to the distributors (sell-in basis). Master sales agreements are in place with certain customers, and these agreements typically contain terms and conditions with respect to payment, delivery, warranty and supply. In the absence of a master sales agreement, we consider a customer's purchase order or our standard terms and conditions to be the contract with the customer.

Our pricing terms are negotiated independently, on a stand-alone basis. In determining the transaction price, we evaluate whether the price is subject to refund or adjustment to determine the net consideration which we expect to receive for the sale of such products. In limited situations, we make sales to certain customers under arrangements where we grant stock rotation rights, price protection and price allowances; variable consideration associated with these rights is expected to be inconsequential. These adjustments and incentives are accounted for as variable consideration, classified as other current liabilities under the new revenue standard and are shown as customer obligations within Other Accrued Liabilities as disclosed in Note 1 Organization and Summary of Significant Accounting Policies to the consolidated financial statements contained elsewhere in this report. We estimate the amount of variable consideration for such arrangements based on the expected value to be provided to customers, and we do not believe that there will be significant changes to our estimates of variable consideration. When incentives, stock rotation rights, price protection, volume discounts, or price allowances are applicable, they are estimated and recorded in the period the related revenue is recognized. Stock rotation reserves are based on historical return rates and recorded as a reduction to revenue with a corresponding reduction to cost of goods sold for the estimated cost of inventory that is expected to be returned and recorded as prepaid expenses and other current assets. In limited circumstances, we enter into volume based tiered pricing arrangements and we estimate total unit volumes under such arrangement to determine the expected transaction price for the units expected to be transferred. Such arrangements are accounted for as contract liabilities within other accrued liabilities. Sales returns liabilities are recorded as refund liabilities within other accrued liabilities.

Our accounts receivable balance is from contracts with customers and represents our unconditional right to receive consideration from customers. Payments are generally due within three months of completion of the performance obligation and subsequent invoicing and, therefore, do not include significant financing components. To date, there have been no material impairment losses on accounts receivable.

We invoice customers for each delivery upon shipment and recognize revenue in accordance with delivery terms. We account for shipping and handling costs as fulfillment costs before the customer obtains control of the goods. We classify shipping and handling costs as a cost of revenue. We account for collection of all taxes on a net basis.

We incur commission expense that is incremental to obtaining contracts with customers. Sales commissions (which are recorded in the selling, general and administrative expense line item in the consolidated statements of operations) are expensed when the product is shipped because such commissions are owed after shipment.

Inventory

We state our inventories at the lower of cost or net realizable value. We base our assessment of the ultimate realization of inventories on our projections of future demand and market conditions. Sudden declines in demand, rapid product improvements, or technological changes, or any combination of these factors can cause us to have excess or obsolete inventories. On an ongoing basis, we review for estimated excess, obsolete or unmarketable inventories and write down our inventories to their net realizable value based on our forecasts of future demand and market conditions. If actual market conditions are less favorable than our forecasts, additional inventory write-downs may be required. The following factors influence our estimates: changes to or cancellations of customer orders, unexpected or sudden decline in demand, rapid product improvements, technological advances, and termination or changes by our OEM customers of any product offerings incorporating our product solutions.

Periodically, we purchase inventory from our contract manufacturers when a customer delays its delivery schedule or cancels its order. In those circumstances, we record a write-down, if necessary, to reduce the carrying value of the inventory purchased to its net realizable value. The effect of these write-downs is to establish a new cost basis in the related inventory, which we do not subsequently write up. We also record a liability and charge to cost of revenue for estimated losses on inventory we are obligated to purchase from our contract manufacturers when such losses become probable from customer delays, order cancellations, or other factors.

Results of Operations

The following sets forth certain of our consolidated statements of income data for fiscal 2019 and 2018 along with comparative information regarding the absolute and percentage changes in these amounts (in millions, except percentages):

	2019 (1)	2018 (1)	$ Change	% Change
Mobile product applications	$ 900.1	$ 1,021.0	$ (120.9)	(11.8%)
PC product applications	258.9	257.8	1.1	0.4%
IoT product applications	313.2	351.5	(38.3)	(10.9%)
Net revenue	1,472.2	1,630.3	(158.1)	(9.7%)
Gross margin	497.1	480.1	17.0	3.5%
Operating expenses:				
Research and development	341.1	363.2	(22.1)	(6.1%)
Selling, general, and administrative	130.4	154.0	(23.6)	(15.3%)
Acquired intangibles amortization	11.7	12.8	(1.1)	(8.6%)
Restructuring costs	17.7	12.0	5.7	47.5%
Retention costs	2.5	—	2.5	0.0%
Operating loss	(6.3)	(61.9)	55.6	(89.8%)
Interest and other income, net	3.9	2.3	1.6	69.6%
Interest expense	(21.2)	(22.2)	1.0	(4.5%)
Impairment recovery on investments, net	2.8	—	2.8	
Loss before provision for income taxes	(20.8)	(81.8)	61.0	(74.6%)
Provision for income taxes	0.3	40.5	(40.2)	(99.3%)
Equity investment loss	(1.8)	(1.8)	—	0.0%
Net loss	$ (22.9)	$ (124.1)	$ 101.2	(81.5%)

(1) Includes the post-acquisition results of operations from Conexant, acquired on July 25, 2017, and the multimedia solutions business of Marvell, acquired on September 8, 2017 (see Note 4 Acquisitions to the consolidated financial statements contained elsewhere in this report).

The following sets forth certain of our consolidated statements of operations data as a percentage of net revenues for fiscal 2019 and 2018:

	2019 (1)	2018 (1)	Percentage Point Increase (Decrease)
Mobile product applications	61.1%	62.6%	(1.5%)
PC product applications	17.6%	15.8%	1.8%
IoT product applications	21.3%	21.6%	(0.3%)
Net revenue	100.0%	100.0%	
Gross margin	33.8%	29.4%	4.4%
Operating expenses:			
Research and development	23.2%	22.3%	0.9%
Selling, general, and administrative	8.9%	9.4%	(0.5%)
Acquired intangibles amortization	0.8%	0.8%	0.0%
Restructuring costs	1.2%	0.7%	0.5%
Retention costs	0.2%	0.0%	0.2%
Operating loss	(0.4%)	(3.8%)	3.4%
Interest and other income, net	0.3%	0.1%	0.2%
Interest expense	(1.4%)	(1.4%)	0.0%
Impairment recovery on investments, net	0.2%	0.0%	0.2%
Loss before provision for income taxes	(1.4%)	(5.0%)	3.6%
Provision for income taxes	0.0%	2.5%	(2.5%)
Equity investment loss	(0.1%)	(0.1%)	0.0%
Net loss	(1.6%)	(7.6%)	6.0%

(1) Includes the post-acquisition results of operations from Conexant, acquired on July 25, 2017, and the multimedia solutions business of Marvell, acquired on September 8, 2017 (see Note 4 Acquisitions to the consolidated financial statements contained elsewhere in this report).

Fiscal 2019 Compared with Fiscal 2018

Net Revenue.

Net revenue was $1,472.2 million for fiscal 2019 compared with $1,630.3 million for fiscal 2018, a decrease of $158.1 million, or 9.7%. Of our fiscal 2019 net revenue, $900.1 million, or 61.1%, of net revenue was from the mobile product applications market, $258.9 million, or 17.6%, of net revenue was from the PC product applications market, and $313.2 million, or 21.3%, of net revenue was from the IoT product applications market. The overall decrease in net revenue for fiscal 2019 was attributable to a $120.9 million, or 11.8%, decrease in net revenue from mobile product applications and a decrease of $38.3 million, or 10.9% decrease, in net revenue from IoT product applications; partially offset by an increase of $1.1 million, or 0.4%, in net revenue from PC product applications. The decrease in mobile product applications was driven by a decrease in the units sold (25.2% less units), partially offset by an increase in average selling prices (which increased 17.9%). The decrease in net revenue from IoT product applications was primarily driven by a decrease in the units sold (1.5% less units) and a decrease in average selling prices (which decreased 9.6%). The increase in net revenue from PC product applications was driven by an increase in average selling prices (which increased 20.9%), partially offset by a decrease in the units sold (17.0% less units).

Gross Margin.

Gross margin as a percentage of net revenue was 33.8%, or $497.1 million, for fiscal 2019 compared with 29.4%, or $480.1 million, for fiscal 2018. The 440 basis point increase in gross margin was primarily due to a $38.6 million reduction of inventory fair value adjustments associated with the Conexant Acquisition and the Marvell Business Acquisition, an $8.4 million decrease in acquired intangibles amortization that was charged to cost of revenue during the year, and a favorable mix due primarily to IoT business products which have higher gross margins.

We continuously introduce new product solutions, many of which have life cycles of less than one year. Further, because we sell our technology solutions in designs that are generally unique or specific to an OEM customer's application, gross margin varies on a product-by-product basis, making our cumulative gross margin a blend of our product specific designs. As a virtual manufacturer, our gross margin percentage is generally not materially impacted by our shipment volume. We charge losses on inventory purchase obligations and write-downs to reduce the carrying value of obsolete, slow moving, and non-usable inventory to net realizable value (including warranty costs) to cost of revenue.

Operating Expenses.

Research and Development Expenses. Research and development expenses decreased $22.1 million, to $341.1 million, for fiscal 2019 compared with fiscal 2018. The decrease in research and development expenses primarily reflected (i) a $19.2 million decrease in employee compensation and employment-related costs, resulting from a 9.7% decrease in research and development headcount due to restructuring actions taken in fiscal 2019 to reduce costs; (ii) a $5.3 million decrease in supplies and project related costs; (iii) a $3.3 million decrease in infrastructure costs related to facilities; and (iv) a $2.3 million decrease in travel related costs, which was partially offset by a $7.1 million increase in software licensing and intellectual property costs.

Selling, General, and Administrative Expenses. Selling, general, and administrative expenses decreased $23.6 million, to $130.4 million, for fiscal 2019 compared with fiscal 2018. The decrease in selling, general, and administrative expenses primarily reflected (i) a $15.6 million decrease in employee compensation and employment-related costs, resulting from a 8.6% decrease in selling, general, and administrative headcount due to restructuring actions taken in fiscal 2019 to reduce costs and the termination of our former Chief Executive Officer; (ii) a $5.1 million decrease in professional fees; and (iii) a $1.6 million, net, reversal of an accrual for payroll deposit penalties, which were previously accrued and have been reversed due to the completion of a payroll tax audit.

Acquired Intangibles Amortization. Acquired intangibles amortization reflects the amortization of intangibles acquired through recent acquisitions. See Note 5 Acquired Intangibles to the consolidated financial statements contained elsewhere in this report.

Restructuring Costs. Restructuring costs primarily reflect employee severance costs and facilities consolidation costs related to the restructuring of operations to reduce operating costs. These headcount-related costs included personnel in operations, research and development, and selling, general and administrative functions. Restructuring costs incurred in fiscal 2019 were $17.7 million, which were due to restructuring plans implemented in the first and fourth quarters of fiscal 2019. The first quarter restructuring activities were completed in fiscal 2019. The fourth quarter restructuring activities are expected to be complete in the first half of fiscal 2020. Restructuring costs incurred in fiscal 2018 were $12.0 million due to restructuring plans implemented and completed in fiscal 2018. See Note 13 Restructuring Activities to the consolidated financial statements contained elsewhere in this report.

Retention Costs. Retention costs include 18-month retention arrangements with key engineering and management employees. We expect the cost of the retention arrangements to continue through the second quarter of fiscal 2021.

Non-Operating Income.

Interest and Other Income, Net. Interest and other income, net was $3.9 million for fiscal 2019 compared with $2.3 million for fiscal 2018.

Interest Expense. Interest expense was $21.2 million and $22.2 million, in fiscal 2019 and fiscal 2018, respectively, which represents interest and amortization of debt issuance costs and discount on the $525.0 million convertible debt issued on June 26, 2017. See Note 6 Debt to the consolidated financial statements contained elsewhere in this report.

Provision for Income Taxes.

As a result of the decrease in the U.S. tax rate from the comprehensive tax legislation enacted in December 2017 by the United States government, commonly known as the Tax Cuts and Jobs Act, our U.S. statutory tax rate is lower than tax rates in many foreign jurisdictions in which we operate. This resulted in an increase to our effective tax rate relating to foreign tax rate differential for our fiscal 2019. However, this was largely offset by the remeasurement and release of various uncertain tax positions. See Note 11 Income Taxes to the consolidated financial statements contained elsewhere in this report for the table reconciling the provision for income taxes from the federal statutory rate for fiscal 2019 and 2018.

It is reasonably possible that the amount of liability for unrecognized tax benefits may change within the next 12 months; an estimate of the range of possible changes could result in a decrease of $1.8 million to an increase of $3.0 million.

In July 2018, the U.S. Ninth Circuit Court of Appeals reversed the 2015 decision of the U.S. Tax Court in Altera Corp. v. Commissioner that found that the Treasury regulations addressing the treatment of stock-based compensation in a cost-sharing arrangement with a related party were invalid. In August 2018, the U.S. Ninth Circuit Court of Appeals withdrew its July 2018 opinion to allow time for the reconstituted panel to confer on this appeal. In June 2019, the reconstituted panel of the U.S. Ninth Circuit Court of appeals reversed the 2015 Tax Court decision. As our tax filing position is consistent with the treasury regulations, no adjustment to our financial statements is required. However, due to the uncertainties with respect to the ultimate resolution, we will continue to monitor developments in this case.

Fiscal 2018 Compared with Fiscal 2017.

For discussion related to the results of operations and changes in financial condition for fiscal 2018 compared to fiscal 2017, please refer to “Part II, Item 7. Management’s Discussion and Analysis of Financial Conditions and Results of Operations” in our fiscal 2018 Form 10-K, which was filed with the SEC on August 24, 2018.

Quarterly Results of Operations

The following table sets forth our unaudited quarterly results of operations for the eight quarters in the two-year period ended June 30, 2019. The following table should be read in conjunction with the financial statements and related notes contained elsewhere in this report. We have prepared this unaudited information on the same basis as our audited financial statements. This table includes all adjustments, which are of a normal and recurring nature that we consider necessary for a fair presentation of our financial position and results of operations for the quarters presented. Past results of operations are not necessarily indicative of future operating performance; accordingly, you should not draw any conclusions about our future results from the results of operations for any quarter presented.

	Three Months Ended							
(in millions, except per share amounts) (unaudited)	June 2019	March 2019	December 2018	September 2018	June 2018	March 2018	December 2017	September 2017
Net revenue	$ 295.1	$ 334.0	$ 425.5	$ 417.6	$ 388.5	$ 394.0	$ 430.4	$ 417.4
Cost of revenue	204.7	218.0	275.7	276.7	260.9	271.1	315.2	303.0
Gross margin	90.4	116.0	149.8	140.9	127.6	122.9	115.2	114.4
Operating expenses:								
Research and development	84.3	82.6	84.2	90.0	90.2	93.7	92.2	87.1
Selling, general, and administrative	26.7	34.2	35.6	33.9	38.4	37.9	37.4	40.3
Acquired intangibles amortization	2.9	3.0	2.9	2.9	4.3	1.4	3.0	4.1
Restructuring costs	7.3	—	2.1	8.3	3.4	2.2	6.6	(0.2)
Retention costs	2.5	—	—	—	—	—	—	—
Total operating expenses	123.7	119.8	124.8	135.1	136.3	135.2	139.2	131.3
Operating income/(loss)	(33.3)	(3.8)	25.0	5.8	(8.7)	(12.3)	(24.0)	(16.9)
Interest and other income, net	1.3	1.0	1.0	0.6	0.7	0.3	0.4	0.9
Interest expense	(5.3)	(5.3)	(5.3)	(5.3)	(5.2)	(5.0)	(5.1)	(6.9)
Impairment recovery on investments, net	—	—	—	2.8	—	—	—	—
Income/(loss) before income taxes	(37.3)	(8.1)	20.7	3.9	(13.2)	(17.0)	(28.7)	(22.9)
Provision/(benefit) for income taxes	8.4	(15.3)	7.5	(0.3)	(12.1)	(3.9)	53.3	3.2
Equity investment loss	(0.5)	(0.5)	(0.4)	(0.4)	(0.4)	(0.6)	(0.4)	(0.4)
Net income/(loss)	(46.2)	6.7	12.8	3.8	$ (1.5)	(13.7)	(82.4)	(26.5)
Net income/(loss) per share:								
Basic	$ (1.35)	$ 0.19	$ 0.37	$ 0.11	$ (0.04)	$ (0.40)	$ (2.42)	$ (0.79)
Diluted	$ (1.35)	$ 0.19	$ 0.36	$ 0.11	$ (0.04)	$ (0.40)	$ (2.42)	$ (0.79)
Shares used in computing net income/(loss) per share:								
Basic	34.3	34.4	34.5	35.1	34.9	34.5	34.1	33.5
Diluted	34.3	35.0	35.1	36.1	34.9	34.5	34.1	33.5

Liquidity and Capital Resources

Our cash and cash equivalents were $327.8 million as of the end of fiscal 2019 compared with $301.0 million as of the end of fiscal 2018, an increase of $26.8 million. This increase primarily reflected cash flows provided by operating activities of $154.2 million; partially offset by cash used in financing and investing activities, primarily related to $118.5 million used to repurchase shares of our common stock, $23.7 million used for the purchase of property and equipment, and $21.3 million in proceeds from issuance of shares. We consider earnings of our foreign subsidiaries indefinitely invested overseas and have made no provision for income or withholding taxes, other than the one-time transition tax incurred as part of the Tax Cuts and Jobs Act, that may result from a future repatriation of those earnings. As of June 30, 2019, $91.3 million of cash and cash equivalents was held by our foreign subsidiaries. If these funds are needed for our operations in the United States, we would be required to accrue and pay U.S. taxes to repatriate these funds.

Cash Flows from Operating Activities. For fiscal 2019, the $154.2 million in net cash provided by operating activities was primarily attributable to net loss of $22.9 million plus adjustments for non-cash charges, including acquired intangibles amortization of $74.4 million, share-based compensation costs of $59.0 million, and depreciation and amortization of $35.6 million, as well as other non-cash adjustments of $0.1 million, and a net change in operating assets and liabilities of $8.0 million. The net change in operating assets and liabilities related primarily to a $64.3 million decrease in accounts receivable, a $20.5 million increase in other accrued liabilities, a $4.9 million increase in accrued compensation, a $3.9 million decrease in other assets and a $3.6 million decrease in prepaid expenses and other current assets; partially offset by a $55.8 million decrease in accounts payable, a $27.5 million increase in inventories and a $6.8 million decrease in acquisition related liabilities. Our days sales outstanding increased from 67 days to 70 days from fiscal 2018 to fiscal 2019. Our inventory turns decreased to five in fiscal 2019 from seven in 2018.

For fiscal 2018, the $145.0 million in net cash provided by operating activities was primarily attributable to net loss of $124.1 million plus adjustments for non-cash charges, including acquired intangibles amortization of $83.9 million, share-based compensation costs of $71.3 million, and depreciation and amortization of $38.9 million, as well as other non-cash adjustments of $25.2 million, and a net change in operating assets and liabilities of $49.8 million. The net change in operating assets and liabilities related primarily to a $79.5 million decrease in inventories, an $18.8 million decrease in prepaid expenses, a $6.2 million increase in accounts payable, a $5.4 million increase in income taxes payable, partially offset by a $22.7 million increase in accounts receivable, a $22.1 million decrease in other accrued liabilities, an $8.1 million decrease in accrued compensation, and a $7.2 million increase in other assets. Our days sales outstanding increased from 54 days to 67 days from fiscal 2017 to fiscal 2018, due to a much smaller percentage of the quarter's net revenue occurring late in the June 30, 2017 quarter compared with a much larger percentage of the quarter's net revenue occurring late in the June 30, 2018 quarter. We do believe DSOs are at normalized levels which are typically between 60 to 70 days. Our inventory turns decreased to seven in fiscal 2018 from nine in 2017.

Cash Flows from Investing Activities. Net cash used in investing activities for fiscal 2019 and 2018 was $20.9 million and $438.5 million, respectively. Net cash used in investing activities for fiscal 2019 consisted primarily of $23.7 million used for the purchases of capital assets. Net cash used in investing activities for fiscal 2018 consisted of $396.7 million used for the acquisition of businesses, $34.1 million used for the purchase of capital assets and $7.7 million used to purchase intangible assets.

Cash Flows from Financing Activities. Net cash used in financing activities for fiscal 2019 was $106.6 million and net cash provided by financing activities for fiscal 2018 was $226.7 million. Our net cash used in financing activities for fiscal 2019 was primarily attributable to $118.5 million used to repurchase shares of our common stock in the open market and $9.4 million used for payroll taxes for DSUs; partially offset by $21.3 million of proceeds from issuance of shares. Our net cash provided by financing activities for fiscal 2018 was primarily attributable to $514.5 million of proceeds received for issuance of convertible debt, net, $32.3 million of proceeds from issuance of shares, partially offset by $220.0 million used for the payment of debt, $93.6 million used to repurchase shares of our common stock in the open market, and $5.4 million used for payroll taxes for DSUs.

For discussion related to the statement of cash flows for fiscal 2017, please refer to "Part II, Item 7. Management's Discussion and Analysis of Financial Conditions and Results of Operations" in our fiscal 2018 Form 10-K, which was filed with the SEC on August 24, 2018.

Common Stock Repurchase Program. In August 2019, our Board of Directors authorized the purchase of up to an additional $100.0 million of our common stock pursuant to our common stock repurchase program, bringing the cumulative authorized total amount under our common stock repurchase program to $1.4 billion, expiring in July 2021. The program authorizes us to purchase our common stock in the open market or in privately negotiated transactions, depending upon market conditions and other factors. The number of shares purchased and the timing of purchases is based on the level of our cash balances, general business and market conditions, and other factors, including alternative investment opportunities. Common stock purchased under this program is held as treasury stock. From April 2005 through the end of fiscal 2019, we purchased 30,934,213 shares of our common stock in the open market for an aggregate cost of $1.2 billion. As of August 5, 2019, we had $190.6 million remaining under our common stock repurchase program.

Convertible Debt. On June 20, 2017, we entered into a purchase agreement, or the Purchase Agreement, with Wells Fargo Securities, LLC, as representative of the initial purchasers named therein, or collectively, the Initial Purchasers, pursuant to which we issued and sold, and the Initial Purchasers purchased, $500 million aggregate principal amount of our 0.50% convertible senior notes due 2022, or the Notes, in a private placement transaction. Pursuant to the Purchase Agreement, we also granted the Initial Purchasers a 30-day option to purchase up to an additional $25 million aggregate principal amount of Notes, which was exercised in full on June 21, 2017. The net proceeds, after deducting the Initial Purchasers' discounts, were $514.5 million, which included proceeds from the Initial Purchasers' exercise of their option to purchase additional Notes. We received the net proceeds on June 26, 2017, which we used to repurchase shares of our common stock, to retire our outstanding bank debt, and to provide additional cash resources to fund the Conexant and Marvell Business Acquisitions.

The Notes bear interest at a rate of 0.50% per year. Interest accrued from June 26, 2017 and is payable semi-annually in arrears, on June 15 and December 15 of each year, beginning on December 15, 2017. The Notes are senior unsecured obligations and rank senior in right of payment to any of our indebtedness that is expressly subordinated in right of payment to the Notes; equal in right of payment to any our liabilities that are not so subordinated; effectively junior in right of payment to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries.

The Notes will mature on June 15, 2022, or the Maturity Date, unless earlier repurchased, redeemed or converted.

Holders may convert all or any portion of their Notes, in multiples of $1,000 principal amounts, at their option at any time prior to the close of business on the business day immediately preceding March 15, 2022 under certain defined circumstances.

On or after March 15, 2022 until the close of business on the business day immediately preceding the Maturity Date, holders may convert all or any portion of their Notes, in multiples of $1,000 principal amounts, at the option of the holder. Upon conversion, we will pay or deliver, at our election, shares of common stock, cash, or a combination of cash and shares of common stock.

The conversion rate for the Notes is initially 13.6947 shares of common stock per $1,000 principal amount of Notes (equivalent to an initial conversion price of approximately $73.02 per share of common stock). The conversion rate is subject to adjustment in certain circumstances.

Upon the occurrence of a fundamental change (as defined in the Notes indenture), holders of the Notes may require us to repurchase for cash all or a portion of their Notes at a fundamental change repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest up to, but excluding, the fundamental change repurchase date.

We may not redeem the Notes prior to June 20, 2020. We may redeem for cash all or any portion of the Notes, at our option, on or after June 20, 2020, if the last reported sale price of our common stock, as determined by us, has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide notice of redemption at a redemption price equal to 100% of the principal amount of the Notes to be redeemed, plus accrued and unpaid interest up to, but excluding, the redemption date. Our policy is to settle the principal amount of our Notes with cash upon conversion or redemption.

Bank Credit Facility.

At the end of fiscal 2017, we had $220.0 million principal outstanding under our Credit Agreement consisting of $100.0 million under our revolving credit facility and $120.0 million under our term loan arrangement. At the beginning of fiscal 2018, we issued $525.0 million principal amount of convertible senior notes and utilized a portion of the proceeds from our Notes to retire the outstanding principal and interest balances on our revolving credit facility and our term loan arrangement. At the end of July 2017, we made an election to reduce the commitment under the revolving credit facility from $450.0 million to $250.0 million as we were able to complete the Conexant Acquisition with available cash.

In September 2017, we entered into an Amendment and Restatement Agreement, or the Agreement, with the lenders that are party thereto, or the Lenders, and Wells Fargo Bank, National Association, as administrative agent for the Lenders. The Agreement terminated our term loan arrangement and provides for a revolving credit facility in a principal amount of up to $200 million, which includes a $20 million sublimit for letters of credit and a $20 million sublimit for swingline loans. Under the terms of the Agreement, we may, subject to the satisfaction of certain conditions, request increases in the revolving credit facility commitments in an aggregate principal amount of up to $100 million to the extent existing or new lenders agree to provide such increased or additional commitments, as applicable. Proceeds under the revolving credit facility are available for working capital and general corporate purposes. As of June 30, 2019, there was no balance outstanding under the revolving credit facility. As a result of terminating our term loan arrangement, we expensed the remaining debt issuance costs attributable to the term loan of $1.0 million during the first quarter of fiscal 2018.

The revolving credit facility is required to be repaid in full on the earlier of (i) September 27, 2022, and (ii) the date 91 days prior to the Maturity Date of the Notes if the Notes have not been refinanced in full by such date. Debt issuance costs of $2.3 million will be amortized over 60 months.

Our obligations under the Agreement are guaranteed by the material domestic subsidiaries of our company, subject to certain exceptions (such material subsidiaries, together with our company, collectively, the Credit Parties). The obligations of the Credit Parties under the Agreement and the other loan documents delivered in connection therewith are secured by a first priority security interest in substantially all of the existing and future personal property of the Credit Parties, including, without limitation, 65% of the voting capital stock of certain of the Credit Parties' direct foreign subsidiaries, subject to certain exceptions.

The revolving credit facility bears interest at our election of a Base Rate plus an Applicable Margin or LIBOR plus an Applicable Margin. Swingline loans bear interest at a Base Rate plus an Applicable Margin. The Base Rate is a floating rate that is the greater of the Prime Rate, the Federal Funds Rate plus 50 basis points, or LIBOR plus 100 basis points. The Applicable Margin is based on a sliding scale which ranges from 0.25 to 100 basis points for Base Rate loans and 100 basis points to 175 basis points for LIBOR loans. We are required to pay a commitment fee on any unused commitments under the Agreement which is determined on a leverage-based sliding scale ranging from 0.175% to 0.25% per annum. Interest and fees are payable on a quarterly basis. As of June 30, 2019, there was no balance outstanding under the revolving credit facility. The LIBOR index is expected to be discontinued the end of 2021. Under our credit facility, when the LIBOR index is discontinued, we will switch to a comparable or successor rate as approved by the Administrative Agent, which is currently anticipated to be the Secured Overnight Financing Rate, or SOFR.

Under the Agreement, there are various restrictive covenants, including three financial covenants which limit the consolidated total leverage ratio, or leverage ratio, the consolidated interest coverage ratio, or interest coverage ratio, a restriction which places a limit on the amount of capital expenditures that may be made in any fiscal year, a restriction that permits up to $50 million per fiscal quarter of accounts receivable financings, and sets the Specified Leverage Ratio. The leverage ratio is the ratio of debt as of the measurement date to earnings before interest, taxes, depreciation and amortization, or EBITDA, for the four consecutive quarters ending with the quarter of measurement. The current leverage ratio shall not exceed 3.50 to 1.00 provided that for the four fiscal quarters ending after the date of a material acquisition, such maximum leverage ratio shall be adjusted to 3.75 to 1.00, and thereafter, shall not be more than 3.50 to 1.00. The interest coverage ratio is EBITDA to interest expense for the four consecutive quarters ending with the quarter of measurement. The interest coverage ratio must not be less than 3.50 to 1.0 during the term of the Agreement. The Specified Leverage Ratio is the ratio used in determining, among other things, whether we are permitted to make dividends and/or prepay certain indebtedness, at a fixed ratio of 3.00 to 1.00.

$100 Million Shelf Registration. We have registered an aggregate of $100.0 million of common stock and preferred stock for issuance in connection with acquisitions, which shares generally will be freely tradeable after their issuance under Rule 145 of the Securities Act unless held by an affiliate of the acquired company, in which case such shares will be subject to the volume and manner of sale restrictions of Rule 144 of the Securities Act.

Liquidity and Capital Resources. We believe our existing cash and cash equivalents, anticipated cash flows from operating activities, available credit under the Credit Agreement and net proceeds from our Notes will be sufficient to meet our working capital and other cash requirements for at least the next 12 months, including our debt service obligations. Our future capital requirements will depend on many factors, including our revenue, the timing and extent of spending to support product development efforts, costs related to protecting our intellectual property, sales and marketing activities, timing of introductions of new products and enhancements to existing products, the costs to ensure access to adequate manufacturing, the costs of maintaining sufficient space for our expanding workforce, the continuing market acceptance of our product solutions, our common stock repurchase program, and the amount and timing of our investments in, or acquisitions of, other technologies or companies. Further equity or debt financing may not be available to us on acceptable terms or at all. If sufficient funds are not available or are not available on acceptable terms, our ability to take advantage of business opportunities or to respond to competitive pressures could be limited or severely constrained.

Contractual Obligations and Commercial Commitments

The following table sets forth a summary of our material contractual obligations and commercial commitments as of the end of fiscal 2019 (in millions):

Contractual Obligations	Payments due by period			
	Total	Less than 1 year	1-3 Years	3-5 Years
Long-term debt (1)	$ 532.8	$ 2.6	$ 530.2	$ —
Leases	11.9	7.4	4.1	0.4
Purchase obligations and other commitments (2)	61.8	49.4	12.4	—
Transition tax payable (3)	9.9	0.9	1.8	7.2
Total	$ 616.4	$ 60.3	$ 548.5	$ 7.6

(1) Represents the principal and interest payable through the maturity date of the underlying contractual obligation.
(2) Purchase obligations and other commitments include payments due for inventory purchase obligations with contract manufacturers, long-term software tool licenses, and other licenses.
(3) Represents the tax amount for the transition tax liability associated with our deemed repatriation of accumulated foreign earnings as a result of the Tax Cuts and Jobs Act, enacted into law on December 22, 2017.

The amounts in the table above exclude unrecognized tax benefits related to uncertain tax positions of $18.9 million. As of June 30, 2019, we were unable to make a reasonably reliable estimate of when settlement with a taxing authority may occur in connection with our gross unrecognized tax benefit.

Off-Balance Sheet Arrangements

We do not have any transactions, arrangements, or other relationships with unconsolidated entities that are reasonably likely to materially affect our financial condition, revenues or expenses, results of operations, liquidity, or capital resources. We have no special purpose or limited purpose entities that provide off-balance sheet financing, liquidity, or market or credit risk support; engage in leasing, hedging, or research and development services; or have other relationships that expose us to liability that is not reflected in our financial statements.

Recently Issued Accounting Pronouncements Not Yet Effective

In February 2016, the Financial Accounting Standards Board established Topic 842, Leases (or Topic 842), by issuing an Accounting Standard Update (or ASU) on Leases. Topic 842 was subsequently amended by several ASUs. The new standard requires organizations that lease assets with lease terms of more than 12 months to recognize assets and liabilities for the rights and obligations created by those leases on their balance sheets. It also requires new qualitative and quantitative disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. The new standard will be effective for us beginning in the first quarter of our fiscal 2020. The standard is required to be adopted using a modified retrospective approach and allows for the adoption of the standard to be applied at the beginning of the most recent fiscal year or at the beginning of the earliest year presented. We expect to adopt this ASU at the beginning of our fiscal 2020, on June 30, 2019. The new standard provides a number of optional practical expedients in transition and we expect to elect the package of practical expedients, which permits us not to reassess under the new standard our prior conclusions about lease identification, lease classification and initial direct costs. We also expect to elect the use-of-hindsight practical expedient, however, we do not expect to elect the practical expedient pertaining to land easements as it is not applicable to us.

We continue to evaluate the potential impact of adoption of this ASU on our consolidated financial statements and currently expect that most of our operating lease commitments will be subject to the new standard and recognized as right-of-use (or ROU) assets and operating lease liabilities upon adoption of this standard. At adoption, we expect the primary financial statement impact will be the recognition of additional operating liabilities, with corresponding ROU assets of the same amount based on the present value of the remaining minimum rental payments under noncancelable operating leases. Adoption of the standard is not expected to have a material impact on our results of operations or cash flows, but we do anticipate new disclosures about our lease activities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Exchange Risk

Our total net revenue for fiscal 2019, 2018 and 2017 was denominated in U.S. dollars. Costs denominated in foreign currencies were approximately 11%, 10% and 9% of our total costs for fiscal 2019, 2018 and 2017, respectively.

We face the risk that our accounts payable and acquisition-related liabilities denominated in foreign currencies will increase if such foreign currencies strengthen quickly and significantly against the U.S. dollar. Approximately 7% and 4% of our accounts payable were denominated in foreign currencies at June 30, 2019 and 2018, respectively.

To provide an assessment of the foreign currency exchange risk associated with our foreign currency exposures within revenue, cost and operating expenses, we performed a sensitivity analysis to determine the impact that an adverse change in exchange rates would have on our financial statements. A hypothetical weighted-average change of 10% in currency exchange rates would have changed our operating loss before taxes by approximately $16.9 million for fiscal 2019, assuming no offsetting hedge positions.

Interest Rate Risk on Cash, Cash Equivalents

Our exposure to market risk for changes in interest rates relates primarily to our cash and cash equivalents. We do not use our investment portfolio for trading or other speculative purposes.

There have been no significant changes in the maturity dates and average interest rates for our cash equivalents subsequent to fiscal 2019.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Reference is made to the financial statements, the report of our independent registered public accounting firm, and the notes thereto commencing at page F-1 of this report, which financial statements, report, and notes are incorporated herein by reference. Reference is also made to the quarterly results of operations included elsewhere in this report, which are incorporated herein by reference.

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

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Conclusions Regarding Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Interim Chief Financial Officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Based on this evaluation, our Chief Executive Officer and Interim Chief Financial Officer, as of June 29, 2019, concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) were effective to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Interim Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) for our Company. Under the supervision and with the participation of our management, including our Chief Executive Officer and Interim Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in the *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO 2013 framework).

Based on our evaluation under the COSO 2013 framework, our management concluded that our internal control over financial reporting was effective, at the reasonable assurance level, as of June 29, 2019. The effectiveness of our internal control over financial reporting as of June 29, 2019 has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report included herein on page F-2.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Interim Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal controls over financial reporting will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues, misstatements, errors, and instances of fraud, if any, within our company have been or will be prevented or detected. Further, internal controls may become inadequate as a result of changes in conditions, or through the deterioration of the degree of compliance with policies or procedures.

ITEM 9B. OTHER INFORMATION

There were no items requiring reporting on Form 8-K that were not reported on Form 8-K during the fourth quarter of the year covered by this Form 10-K.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item relating to directors of our company and corporate governance is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2019 Annual Meeting of Stockholders. The information required by this Item relating to our executive officers is included in Item 1. Business – Information about our Executive Officers.

We have adopted a code of ethics that applies to our chief executive officer, principal accounting officer, and other senior accounting personnel. The "Code of Ethics for the CEO and Senior Financial Officers" is located on our website at www.synaptics.com in the Investor Relations section under Corporate Governance.

We intend to satisfy the disclosure requirement under Item 5.05(c) of Form 8-K regarding any amendment to, or waiver from, a provision of this code of ethics by posting such information on our website, at the address and location specified above.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is incorporated herein by reference to the definitive Proxy Statement (particularly under the caption "Executive Compensation") to be filed pursuant to Regulation 14A of the Exchange Act for our 2019 Annual Meeting of Stockholders.

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

The information required by this Item is incorporated herein by reference to the definitive Proxy Statement (particularly under the captions "Security Ownership of Principal Stockholders, Directors, and Officers" and "Executive Compensation—Stock-Based Compensation Plan Information") to be filed pursuant to Regulation 14A of the Exchange Act for our 2019 Annual Meeting of Stockholders.

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

The information required by this Item is incorporated herein by reference to the definitive Proxy Statement (particularly under the caption "Certain Relationships and Related Transactions") to be filed pursuant to Regulation 14A of the Exchange Act for our 2019 Annual Meeting of Stockholders.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item is incorporated herein by reference to the definitive Proxy Statement (particularly under the caption "Ratification of Appointment of Independent Auditor") to be filed pursuant to Regulation 14A of the Exchange Act for our 2019 Annual Meeting of Stockholders.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Financial Statements and Financial Statement Schedules

(1) Financial Statements are listed in the Index to Financial Statements on page F-1 of this report.

(b) Exhibits

Exhibit Number	Exhibit
2.3#	Stock Purchase Agreement, dated June 11, 2017, by and among Synaptics Incorporated, Lakestar Semi, Inc., CNXT Holdings, Inc. and Conexant Systems, LLC (3)
3.1	Certificate of Incorporation (4)
3.2	Certificate of Designation of Series A Junior Participating Preferred Stock (5)
3.3	Third Amended and Restated Bylaws (amended and restated as of July 27, 2010) (6)
3.4	Certificate of Amendment of Certificate of Incorporation of the registrant (7)
3.5	Certificate of Amendment of Certificate of Incorporation of the registrant (8)
4.1	Form of Common Stock Certificate (9)
4.2	Indenture, dated as of June 26, 2017, by and between the Company and Wells Fargo, National Association, as trustee (10)
4.3	Form of 0.50% Convertible Senior Note due 2022 (11)
4.4	Description of registrant's securities
10.1	Amendment and Restatement Agreement, dated September 27, 2017, by and among Synaptics, as borrower, certain material domestic subsidiaries of Synaptics, as subsidiary guarantors, the Lenders, as lenders, and Wells Fargo, as administrative agent for the Lenders (12)
10.2	Amended and Restated Credit Agreement, dated September 27, 2017, by and among Synaptics, as borrower, the Lenders, as lenders, Wells Fargo, as administrative Agent, Wells Fargo Securities, LLC as joint lead arranger and joint bookrunner, MUFG Union Bank, N.A. and BMO Capital Markets Corp. as joint lead arrangers, joint book runners and co-syndication agents (12)
10.3*	Synaptics Incorporated Amended and Restated 2010 Incentive Compensation Plan, as amended effective on October 30, 2018 (13)
10.6(a)*	Amended and Restated 2001 Incentive Compensation Plan (as amended through January 23, 2007) (14)
10.6(b)*	Form of grant agreements for Amended and Restated 2001 Incentive Compensation Plan (15)
10.6(c)*	Form of deferred stock award agreement for Amended and Restated 2001 Incentive Compensation Plan (16)
10.24(a)*	Amended and Restated 2010 Incentive Compensation Plan (17)
10.24(b)*	Form of Non-Qualified Stock Option Agreement for 2010 Incentive Compensation Plan (11)
10.24(c)*	Form of Incentive Stock Option Agreement for 2010 Incentive Compensation Plan (18)
10.24(d)*	Form of Deferred Stock Award Agreement for 2010 Incentive Compensation Plan (11)
10.24(e)*	Form of Deferred Stock Award Agreement for Market Stock Units for Amended and Restated 2010 Incentive Compensation Plan (19)
10.24(f)*	Form of Deferred Stock Award Agreement for Performance Stock Units for Amended and Restated 2010 Incentive Compensation Plan (19)
10.25(a)*	Amended and Restated 2010 Employee Stock Purchase Plan (2)

Exhibit Number	Exhibit
10.26*	Change of Control Severance Policy for Principal Executive Officers
10.27*	Severance Policy for Principal Executive Officers
10.28*	Form of Director and Officer Indemnification Agreement (20)
10.29*	Separation Agreement and Release dated November 15, 2018 between the registrant and Kevin Barber (21)
10.30*	Employment offer Letter, dated February 7, 2019 between the registrant and Kermit Nolan (22)
10.31*	Separation Agreement and Release dated April 22, 2019 between the registrant and Huibert Verhoeven
10.32*	Separation Agreement and Release dated May 11, 2019 between the registrant and Richard Bergman
10.33	Written Description of the Synaptics Incorporated Retention Program Adopted May 6, 2019
21	List of Subsidiaries
23.1	Consent of Independent Registered Public Accounting Firm
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a)
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a)
32.1##	Section 1350 Certification of Chief Executive Officer
32.2##	Section 1350 Certification of Chief Financial Officer
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

(1) Incorporated by reference to the registrant’s Form 8-K as filed with the SEC on November 12, 2013.
(2) Incorporated by reference to the registrant’s Form 10-K as filed with the SEC on August 22, 2014.
(3) Incorporated by reference to the registrant’s Current Report on Form 8-K as filed with the SEC on June 12, 2017.
(4) Incorporated by reference to the registrant's Form 10-Q as filed with the SEC on February 21, 2002.
(5) Incorporated by reference to the registrant’s Form 8-A as filed with the SEC on August 16, 2002.
(6) Incorporated by reference to the registrant’s Current Report on Form 8-K as filed with the SEC on August 2, 2010.
(7) Incorporated by reference to the registrant’s Current Report on Form 8-K as filed with the SEC on December 7, 2004.
(8) Incorporated by reference to the registrant’s Current Report on Form 8-K as filed with the SEC on October 22, 2010.
(9) Incorporated by reference to the registrant’s Form 10-K as filed with the SEC on September 12, 2002.
(10) Incorporated by reference to the Registrant’s Current Report on Form 8-K as filed with the SEC on June 26, 2017.
(11) Incorporated by reference to the Registrant’s Annual Report on Form 10-K as filed with the SEC on August 18, 2017.
(12) Incorporated by reference to the registrant’s Current Report on Form 8-K as filed with the SEC on October 2, 2017.
(13) Incorporated by reference to the Registrant’s Form 8-K as filed with the SEC on November 1, 2018.
(14) Incorporated by reference to the registrant’s Form 10-Q as filed with the SEC on November 8, 2007.
(15) Incorporated by reference to the registrant’s Form 10-Q as filed with the SEC on February 6, 2003.
(16) Incorporated by reference to the registrant’s Form 10-K as filed with the SEC on September 7, 2006.
(17) Incorporated by reference to the registrant’s Current Report on Form 8-K as filed with the SEC on October 28, 2016.
(18) Incorporated by reference to the registrant’s Current Report on Form 8-K as filed with the SEC on October 22, 2010.
(19) Incorporated by reference to the registrant's Form 10-Q as filed with the SEC on February 8, 2018.
(20) Incorporated by reference to the registrant’s Current Report on Form 8-K as filed with the SEC on May 17, 2016.
(21) Incorporated by reference to the registrant’s Form 10-Q as filed with the SEC on February 7, 2019.
(22) Incorporated by reference to the registrant’s Form 10-Q as filed with the SEC on May 9, 2019.

* Indicates a contract with management or compensatory plan or arrangement.

\# Certain schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule will be furnished as a supplement to the Securities and Exchange Commission upon request.

\## This certification is being furnished solely pursuant to 18 U.S.C. § 1350 and shall not be deemed filed by the Company for purposes of Section 18 of the Exchange Act or incorporated by reference in any registration statement of the Company filed under the Securities Act.

ITEM 16. FORM 10-K SUMMARY

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

SYNAPTICS INCORPORATED

Date: August 23, 2019

By: /s/ Michael E. Hurlston
Michael E. Hurlston
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
\/s/ Michael E. Hurlston Michael E. Hurlston	President and Chief Executive Officer, and Director	August 23, 2019
/s/ Kermit Nolan Kermit Nolan	Corporate Vice President, Chief Accounting Officer and Interim Chief Financial Officer	August 23, 2019
/s/ Nelson C. Chan Nelson C. Chan	Executive Chairman of the Board	August 23, 2019
/s/ Kiva A. Allgood Kiva A. Allgood	Director	August 23, 2019
/s/ Jeffrey D. Buchanan Jeffrey D. Buchanan	Director	August 23, 2019
/s/ Keith B. Geeslin Keith B. Geeslin	Director	August 23, 2019
/s/ Russell J. Knittel Russell J. Knittel	Director	August 23, 2019
/s/ Francis F. Lee Francis F. Lee	Director	August 23, 2019
/s/ Richard L. Sanquini Richard L. Sanquini	Director	August 23, 2019
/s/ James L. Whims James L. Whims	Director	August 23, 2019

INDEX TO FINANCIAL STATEMENTS

SYNAPTICS INCORPORATED AND SUBSIDIARIES

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Synaptics Incorporated:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Synaptics Incorporated and subsidiaries (the Company) as of June 29, 2019 and June 30, 2018, the related consolidated statements of operations, comprehensive income/(loss), stockholders' equity, and cash flows for each of the years in the three-year period ended June 29, 2019 and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of June 29, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of June 29, 2019 and June 30, 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended June 29, 2019, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of June 29, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting at item 9A. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. 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.

Definition and Limitations of Internal Control Over Financial Reporting

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.

/s/ KPMG LLP

We have served as the Company's auditor since 2003.

Santa Clara, California
August 23, 2019

SYNAPTICS INCORPORATED AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in millions, except par value and share amounts)

	June 2019	June 2018
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 327.8	$ 301.0
Accounts receivable, net of allowances of $2.1 and $1.8 at June 2019 and 2018, respectively	230.0	289.1
Inventories	158.7	131.2
Prepaid expenses and other current assets	14.6	18.2
Total current assets	731.1	739.5
Property and equipment, net	103.0	117.8
Goodwill	372.8	372.8
Acquired intangibles, net	144.8	219.2
Non-current other assets	58.1	50.5
	$ 1,409.8	$ 1,499.8
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	$ 98.3	$ 156.9
Accrued compensation	30.4	25.4
Income taxes payable	19.1	13.1
Acquisition-related liabilities	—	8.7
Other accrued liabilities	106.1	79.7
Total current liabilities	253.9	283.8
Convertible notes, net	468.3	450.7
Other long-term liabilities	30.3	36.0
Total liabilities	752.5	770.5
Commitments and contingencies		
Stockholders' Equity:		
Preferred stock:		
$0.001 par value; 10,000,000 shares authorized; no shares issued and outstanding	—	—
Common stock:		
$0.001 par value; 120,000,000 shares authorized, 64,283,948 and 62,889,679 shares issued, and 33,349,735 and 35,249,803 shares outstanding, at June 2019 and 2018, respectively	0.1	0.1
Additional paid-in capital	1,266.1	1,195.2
Treasury stock: 30,934,213 and 27,639,876 common shares at June 2019 and 2018, respectively, at cost	(1,192.4)	(1,073.9)
Accumulated other comprehensive income	—	1.5
Retained earnings	583.5	606.4
Total stockholders' equity	657.3	729.3
	$ 1,409.8	$ 1,499.8

See accompanying notes to consolidated financial statements.

SYNAPTICS INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(in millions, except per share amounts)

	Fiscal Year		
	2019	2018	2017
Net revenue	$ 1,472.2	$ 1,630.3	$ 1,718.2
Cost of revenue	975.1	1,150.2	1,194.6
Gross margin	497.1	480.1	523.6
Operating expenses:			
Research and development	341.1	363.2	292.3
Selling, general, and administrative	130.4	154.0	137.6
Acquired intangibles amortization	11.7	12.8	11.7
Restructuring costs	17.7	12.0	7.3
Retention costs	2.5	—	—
Litigation settlement charge	—	—	10.0
Total operating expenses	503.4	542.0	458.9
Operating income/(loss)	(6.3)	(61.9)	64.7
Interest and other income	3.9	2.3	0.7
Interest expense	(21.2)	(22.2)	(6.0)
Impairment recovery on investments, net	2.8	—	1.9
Income/(loss) before provision for income taxes and equity investment loss	(20.8)	(81.8)	61.3
Provision for income taxes	0.3	40.5	12.2
Equity investment loss	(1.8)	(1.8)	(0.3)
Net income/(loss)	$ (22.9)	$ (124.1)	$ 48.8
Net income/(loss) per share:			
Basic	$ (0.66)	$ (3.63)	$ 1.40
Diluted	$ (0.66)	$ (3.63)	$ 1.37
Shares used in computing net income/(loss) per share:			
Basic	34.6	34.2	34.8
Diluted	34.6	34.2	35.6

See accompanying notes to consolidated financial statements.

SYNAPTICS INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME/(LOSS)
(in millions)

	Fiscal Year		
	2019	2018	2017
Net income/(loss)	$ (22.9)	$ (124.1)	$ 48.8
Other comprehensive loss, net of tax:			
Change in unrealized net loss on investments	(1.5)	—	(1.5)
Reclassification from accumulated other comprehensive loss to interest income for accretion of non-current investments	—	—	(0.3)
Net current-period other comprehensive loss	(1.5)	—	(1.8)
Comprehensive income/(loss)	$ (24.4)	$ (124.1)	$ 47.0

See accompanying notes to consolidated financial statements.

SYNAPTICS INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in millions, except share amounts)

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Treasury Stock	Accumulated Other Comprehensive Income	Retained Earnings	Total Stockholders' Equity
Balance at June 2016	59,532,148	$ 0.1	$ 928.6	$ (892.3)	$ 3.3	$ 665.3	$ 705.0
Net income	—	—	—	—	—	48.8	48.8
Other comprehensive income	—	—	—	—	(1.8)	—	(1.8)
Issuance of common stock for share-based award compensation plans	1,047,763	—	24.7	—	—	—	24.7
Payroll taxes for deferred stock units	—	—	(6.6)	—	—	—	(6.6)
Purchases of treasury stock	—	—	—	(88.0)	—	—	(88.0)
Tax deficiency associated with share-based awards	—	—	(3.7)	—	—	—	(3.7)
Share-based compensation	—	—	61.8	—	—	—	61.8
Balance at June 2017, as reported	60,579,911	0.1	1,004.8	(980.3)	1.5	714.1	740.2
Cumulative effect of changes in accounting principles for share-based compensation	—	—	1.0	—	—	24.7	25.7
Cumulative effect of changes in accounting principles for income taxes: intra-entity transfers of assets other than inventory						(8.3)	(8.3)
Balance at June 2017, as adjusted	60,579,911	0.1	1,005.8	(980.3)	1.5	730.5	757.6
Net loss	—	—	—	—	—	(124.1)	(124.1)
Issuance of common stock for share-based award compensation plans	1,583,102	—	32.3	—	—	—	32.3
Issuance of common stock for acquisition	726,666	—	39.1	—	—	—	39.1
Payroll taxes for deferred stock units	—	—	(5.4)	—	—	—	(5.4)
Purchases of treasury stock	—	—	—	(93.6)	—	—	(93.6)
Share-based compensation	—	—	71.3	—	—	—	71.3
Issuance of convertible debt	—	—	52.1	—	—	—	52.1
Balance at June 2018	62,889,679	0.1	1,195.2	(1,073.9)	1.5	606.4	729.3
Net loss	—	—	—	—	—	(22.9)	(22.9)
Other comprehensive income	—	—	—	—	(1.5)	—	(1.5)
Issuance of common stock for share-based award compensation plans	1,394,269	—	21.3	—	—	—	21.3
Payroll taxes for deferred stock units	—	—	(9.4)	—	—	—	(9.4)
Purchases of treasury stock	—	—	—	(118.5)	—	—	(118.5)
Share-based compensation	—	—	59.0	—	—	—	59.0
Balance at June 2019	64,283,948	$ 0.1	$ 1,266.1	$ (1,192.4)	$ —	$ 583.5	$ 657.3

See accompanying notes to consolidated financial statements.

SYNAPTICS INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

	Fiscal Year		
	2019	2018	2017
Cash flows from operating activities			
Net income/(loss)	$ (22.9)	$ (124.1)	$ 48.8
Adjustments to reconcile net income/(loss) to net cash provided by operating activities:			
Share-based compensation costs	59.0	71.3	61.8
Depreciation and amortization	35.6	38.9	33.2
Acquired intangibles amortization	74.4	83.9	59.3
Deferred taxes	(15.2)	4.9	(17.4)
Non-cash interest	—	—	(0.3)
Amortization of convertible debt discount and issuance costs	17.6	16.9	—
Amortization of debt issuance costs	0.5	1.6	1.2
Impairment recovery on investments, net	(2.8)	—	(1.9)
Arbitration settlement	(1.9)	—	—
Equity investment loss	1.8	1.8	0.3
Foreign currency remeasurement (gain)/loss	0.1	—	(0.2)
Changes in operating assets and liabilities, net of acquisitions:			
Accounts receivable, net	64.3	(22.7)	(2.6)
Inventories	(27.5)	79.5	15.0
Prepaid expenses and other current assets	3.6	18.8	(9.6)
Other assets	3.9	(7.2)	6.5
Accounts payable	(55.8)	6.2	(38.4)
Accrued compensation	4.9	(8.1)	(7.8)
Acquisition related liabilities	(6.8)	—	(16.8)
Income taxes payable	0.9	5.4	2.3
Other accrued liabilities	20.5	(22.1)	19.5
Net cash provided by operating activities	154.2	145.0	152.9
Cash flows from investing activities			
Acquisition of businesses, net of cash and cash equivalents acquired	—	(396.7)	—
Proceeds from sales of investments	2.8	—	7.5
Purchases of property and equipment	(23.7)	(34.1)	(31.4)
Purchase of intangible assets	—	(7.7)	—
Investment in direct financing lease	—	—	(17.0)
Proceeds from direct financing leases	—	—	17.0
Equity method investment	—	—	(18.4)
Net cash used in investing activities	(20.9)	(438.5)	(42.3)
Cash flows from financing activities			
Proceeds from issuance of convertible debt, net of issuance costs	—	514.5	—
Payment of acquisition-related liabilities	—	—	(5.3)
Payment of debt	—	(220.0)	(18.8)
Purchases of treasury stock	(118.5)	(93.6)	(88.0)
Proceeds from issuance of shares	21.3	32.3	24.7
Payment of debt issuance costs	—	(1.1)	(1.2)
Excess tax benefit from share-based compensation	—	—	1.1
Payroll taxes for deferred stock and market stock units	(9.4)	(5.4)	(6.6)
Net cash provided by/(used in) financing activities	(106.6)	226.7	(94.1)
Effect of exchange rate changes on cash and cash equivalents	0.1	—	(0.9)
Net increase/(decrease) in cash and cash equivalents	26.8	(66.8)	15.6
Cash and cash equivalents at beginning of year	301.0	367.8	352.2
Cash and cash equivalents at end of year	$ 327.8	$ 301.0	$ 367.8
Supplemental disclosures of cash flow information			
Cash paid for interest	$ 3.6	$ 3.8	$ 6.0
Cash paid for taxes	$ 16.4	$ 26.4	$ 22.1
Cash refund on taxes	$ 6.4	$ 1.7	$ 10.1
Non-cash investing and financing activities:			
Property and equipment received but unpaid	$ 3.8	$ 6.6	$ 6.0
Common stock issued pursuant to acquisition	$ —	$ 39.1	$ —

See accompanying notes to consolidated financial statements.

1. Organization and Summary of Significant Accounting Policies

Organization and Basis of Presentation

We are a leading worldwide developer and supplier of custom-designed human interface semiconductor product solutions that enable people to interact more easily and intuitively with a wide variety of mobile computing, communications, entertainment, and other electronic devices. We currently generate revenue from the markets for smartphones, tablets, personal computer, or PC, products, primarily notebook computers, Internet of Things, or IoT, which includes devices with voice, speech and video within smart homes, and other select electronic devices, including devices in automobiles, with our custom human interface solutions. Every solution we deliver either contains or consists of our touch-, display driver-, fingerprint authentication-based-, voice and speech-, or video-semiconductor solutions, which include our chip, customer-specific firmware, and software. Our original equipment manufacturer, or OEM, customers include many of the world's largest OEMs for smartphones, most of the world's largest PC OEMs, and many large OEMs for voice, speech and video products.

The consolidated financial statements are presented in accordance with U.S. generally accepted accounting principles, or U.S. GAAP, and include our financial statements and those of our wholly owned subsidiaries. All significant intercompany balances and transactions have been eliminated upon consolidation.

Our fiscal year is the 52- or 53-week period ending on the last Saturday in June. The fiscal years presented in this report were 52-week periods ended June 29, 2019 and June 24, 2017 and a 53-week period ended June 30, 2018. For simplicity, the accompanying consolidated financial statements are labeled as ending on calendar year end dates as of and for all periods presented, unless otherwise indicated.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue, expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue, allowance for doubtful accounts, cost of revenue, inventories, loss on purchase commitments, product warranty, accrued liabilities, share-based compensation costs, provision for income taxes, deferred income tax asset valuation allowances, uncertain tax positions, goodwill, intangible assets, investments, contingent consideration liability and loss contingencies. We base our estimates on historical experience, applicable laws and regulations, and various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Cash Equivalents and Investments

Cash equivalents consist of highly liquid investments with original maturities of three months or less.

Our cash equivalents and investments classified as available-for-sale securities as of the end of fiscal 2019 and 2018 were as follows (in millions):

	2019		
	Amortized Cost	Gross Unrealized Gains	Fair Value
Reported as cash equivalents:			
Money market funds	$ 313.7	$ —	$ 313.7
Total available-for-sale securities	$ 313.7	$ —	$ 313.7

	2018		
	Amortized Cost	Gross Unrealized Gains	Fair Value
Reported as cash equivalents:			
Money market funds	$ 275.2	$ —	$ 275.2
Reported as non-current assets:			
Auction rate securities	—	1.5	1.5
Total available-for-sale securities	$ 275.2	$ 1.5	$ 276.7

Fair Value

We measure certain financial assets and liabilities at fair value. When we measure fair value on either a recurring or nonrecurring basis, inputs used in valuation techniques are assigned a hierarchical level as follows:

- Level 1 inputs are observable inputs that reflect quoted prices for identical assets or liabilities in active markets.
- Level 2 inputs reflect quoted prices for identical assets or liabilities in markets that are not active; quoted prices for similar assets or liabilities in active markets; inputs other than quoted prices that are observable for the assets or liabilities; or inputs that are derived principally from or corroborated by observable market data by correlation or other means.
- Level 3 inputs are unobservable inputs reflecting our assumptions, which are incorporated into valuation techniques and models used to determine fair value. The assumptions are consistent with market participant assumptions that are reasonably available.

Financial assets measured at fair value on a recurring basis, by level within the fair value hierarchy, as of the end of fiscal 2019 and 2018 were as follows (in millions):

	2019			2018		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Assets:						
Money market	$ 313.7	$ —	$ —	$ 275.2	$ —	$ —
Auction rate securities	—	—	—	—	—	1.5
Total available-for-sale securities	$ 313.7	$ —	$ —	$ 275.2	$ —	$ 1.5

Changes in fair value of our Level 3 financial assets for fiscal 2019 and 2018 were as follows (in millions):

	2019	2018
Beginning balance	$ 1.5	$ 1.5
Redemptions	(1.5)	—
Ending balance	$ —	$ 1.5

There were no transfers in or out of our Level 1, 2 or 3 assets during fiscal 2019 or 2018.

The fair values of our accounts receivable and accounts payable approximate their carrying values because of the short-term nature of those instruments. Intangible assets, property and equipment, and goodwill are measured at fair value on a non-recurring basis if impairment is indicated. The interest rate on our bank debt is variable, which is subject to change from time to time to reflect a market interest rate; accordingly, the carrying value of our bank debt approximates fair value.

Concentration of Credit Risk

Financial instruments that potentially subject us to concentrations of credit risk consist primarily of cash equivalents, investments, and accounts receivable. Our investment policy, which is predicated on capital preservation and liquidity, limits investments to U.S. government treasuries and agency issues, taxable securities, and municipal issued securities with a minimum rating of A1 (Moody’s) or P1 (Standard and Poor’s) or their equivalent.

We sell our products to contract manufacturers that provide manufacturing services for OEMs, and to some OEMs directly. We extend credit based on an evaluation of a customer's financial condition, and we generally do not require collateral.

The following customers accounted for more than 10% of our accounts receivable balance as of the end of fiscal 2019 and 2018:

	2019	2018
Customer A	25%	13%
Customer B	16%	*
Customer C	*	11%
Customer D	*	10%

* Less than 10%

Other Concentrations

Our products include certain components that are currently single sourced. We believe other vendors would be able to provide similar components, however, the qualification of such vendors may require additional lead time. In order to mitigate any potential adverse impact from a supply disruption, we strive to maintain an adequate supply of critical single-sourced components.

Revenue Recognition

Change in Accounting Policy

In May 2014, the Financial Accounting Standards Board, or FASB, issued an Accounting Standards Update, or ASU, on revenue from contracts with customers, ASU No. 2014-09, Revenue from Contracts with Customers, or the new revenue standard. The new revenue standard outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers.

We adopted the new revenue standard at the beginning of our fiscal 2019, using the modified retrospective method applied to all contracts not completed as of the adoption date. Results for reporting periods ending after our fiscal 2018 are presented under the new revenue standard, while prior reporting periods are not adjusted and continue to be reported in accordance with the previous revenue standard. Recognition of revenue has remained substantially unchanged under the new revenue standard as compared to the previous revenue standard. Accordingly, there was no adjustment to the fiscal 2019 opening retained earnings. However, due to the adoption of the new revenue standard, we reclassified certain amounts of incentive items to other accrued liabilities in our consolidated balance sheets as of June 30, 2019, and presented them as part of customer obligations, from the contra accounts receivable. Such information is as follows (in millions):

Adjustments reflected in the consolidated balance sheets:

	As of June 30, 2019		
	As reported under new standard	Adjustments	Pro forma as if previous standard was in effect
Accounts receivable, net	$ 230.0	$ (5.0)	$ 225.0
Inventories	158.7	0.9	159.6
Prepaid expenses and other current assets	14.6	(0.9)	13.7
Total assets	1,409.8	(5.0)	1,404.8
Other accrued liabilities	106.1	(5.0)	101.1
Total liabilities and stockholders' equity	1,409.8	(5.0)	1,404.8

Adjustments reflected in the consolidated statement of cash flows:

	Twelve Months Ended June 30, 2019		
	As reported under new standard	Adjustments	Pro forma as if previous standard was in effect
Cash flows from operating activities:			
Accounts receivable, net	$ 64.3	$ (0.2)	$ 64.1
Inventories	(27.5)	(0.6)	(28.1)
Prepaid expenses and other current assets	3.6	0.6	4.2
Other accrued liabilities	20.5	0.2	20.7

Revenue from contracts with customers disaggregated by geographic area based on customer location and groups of similar products is presented in Note 12. Segment, Customers, and Geographical Information.

Revenue Recognition

Our revenue is primarily generated from the sale of ASIC chips, either directly to a customer or to a distributor. Revenues are recognized when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to receive in exchange for those goods or services. All of our revenue, except an inconsequential amount, is recognized at a point in time, either on shipment or delivery of the product, depending on customer terms and conditions. We generally warrant our products for a period of 12 months from the date of sale and estimate probable product warranty costs at the time we recognize revenue as the warranty is considered an assurance warranty and not a performance obligation. Non-product revenue is recognized over the same period of time such performance obligations are satisfied. We then select an appropriate method for measuring satisfaction of the performance obligations.

Revenue from sales to distributors is recognized upon shipment of the product to the distributors (sell-in basis). Master sales agreements are in place with certain customers, and these agreements typically contain terms and conditions with respect to payment, delivery, warranty and supply. In the absence of a master sales agreement, we consider a customer's purchase order or our standard terms and conditions to be the contract with the customer.

Our pricing terms are negotiated independently, on a stand-alone basis. In determining the transaction price, we evaluate whether the price is subject to refund or adjustment to determine the net consideration which we expect to receive for the sale of such products. In limited situations, we make sales to certain customers under arrangements where we grant stock rotation rights, price protection and price allowances; variable consideration associated with these rights is expected to be inconsequential. These adjustments and incentives are accounted for as variable consideration, classified as other current liabilities under the new revenue standard and are shown as customer obligations in other accrued liabilities on our consolidated balance sheets. We estimate the amount of variable consideration for such arrangements based on the expected value to be provided to customers, and we do not believe that there will be significant changes to our estimates of variable consideration. When incentives, stock rotation rights, price protection, volume discounts, or price allowances are applicable, they are estimated and recorded in the period the related revenue is recognized. Stock rotation reserves are based on historical return rates and recorded as a reduction to revenue with a corresponding reduction to cost of goods sold for the estimated cost of inventory that is expected to be returned and recorded as prepaid expenses and other current assets. In limited circumstances, we enter into volume-based tiered pricing arrangements and we estimate total unit volumes under such arrangement to determine the expected transaction price for the units expected to be transferred. Such arrangements are accounted for as contract liabilities within other accrued liabilities. Sales returns liabilities are recorded as refund liabilities within other accrued liabilities.

Our accounts receivable balance is from contracts with customers and represents our unconditional right to receive consideration from customers. Payments are generally due within three months of completion of the performance obligation and subsequent invoicing and, therefore, do not include significant financing components. To date, there have been no material impairment losses on accounts receivable. There were no contract assets (i.e., unbilled accounts receivable, deferred commissions) recorded on the consolidated balance sheets in the periods presented. Contract liabilities and refund liabilities were $4.5 million and $47.5 million, respectively, as of June 30, 2019 and $1.1 million and $31.6 million, respectively, as of July 1, 2018, the beginning of fiscal 2019. Both contract liabilities and refund liabilities are presented as part of customer obligations in other accrued liabilities on our consolidated balance sheets. During fiscal 2019, we recognized $0.3 million in revenue related to contract liabilities outstanding as of the beginning of fiscal 2019.

We invoice customers for each delivery upon shipment and recognize revenue in accordance with delivery terms. As of June 30, 2019, we did not have any remaining unsatisfied performance obligations with an original duration greater than one year. Accordingly, under the optional exception provided by the ASC, we do not disclose revenues allocated to future performance obligations of partially completed contracts. We have elected to account for shipping and handling costs as fulfillment costs before the customer obtains control of the goods. We continue to classify shipping and handling costs as a cost of revenue. We have elected to continue to account for collection of all taxes on a net basis.

We incur commission expense that is incremental to obtaining contracts with customers. Sales commissions (which are recorded in the selling, general and administrative expense line item in the consolidated statements of operations) are expensed when the product is shipped because such commissions are owed after shipment.

Revenue from contracts with customers disaggregated by geographic area based on customer location and groups of similar products is presented in Note 12 Segment, Customers, and Geographical Information.

Advertising Costs

Advertising costs, if any, are expensed when incurred.

Allowance for Doubtful Accounts

We maintain allowances for doubtful accounts for estimated losses resulting from the inability of customers to meet their financial obligations. On an ongoing basis, we evaluate the collectability of accounts receivable based on a combination of factors. In circumstances in which we are aware of a specific customer's potential inability to meet its financial obligation, we record a specific reserve of the bad debt against amounts due. In addition, we make judgments and estimates on the collectability of accounts receivable based on our historical bad debt experience, customers' creditworthiness, current economic trends, recent changes in customers' payment trends, and deterioration in customers' operating results or financial position. If circumstances change adversely, additional bad debt allowances may be required. For all periods presented, credit losses on our accounts receivable have been insignificant, and we believe that an adequate allowance for doubtful accounts has been provided.

Cost of Revenue

Our cost of revenue includes the cost of products shipped to our customers, which primarily includes the cost of products built to our specifications by our contract manufacturers, the cost of silicon wafers supplied by independent semiconductor wafer manufacturers, and the related assembly, package, and test costs of our products. Also included in our cost of revenue are personnel and related costs, including share-based compensation for quality assurance and manufacturing support personnel; logistics costs; depreciation of equipment supporting manufacturing; acquired intangibles amortization; fair value adjustments associated with acquired businesses; inventory write-downs and losses on purchase obligations; and warranty costs.

Inventories

Inventories are stated at the lower of cost (first-in, first-out method) or net realizable value as of the end of fiscal 2019 and 2018 and consisted of the following (in millions):

	2019	2018
Raw materials and work-in-progress	$ 110.7	$ 105.0
Finished goods	48.0	26.2
	$ 158.7	$ 131.2

We record a write-down, if necessary, to reduce the carrying value of inventory to its net realizable value. The effect of these write-downs is to establish a new cost basis in the related inventory, which we do not subsequently write up. We also record a liability and charge to cost of revenue for estimated losses on inventory we are obligated to purchase from our contract manufacturers when such losses become probable from customer delays, order cancellations, or other factors.

Property and Equipment

We state property and equipment at cost less accumulated depreciation and amortization. We compute depreciation using the straight-line method over the estimated useful lives of the assets. We amortize leasehold improvements over the shorter of the lease term or the useful life of the asset.

Other Assets

In April 2017, we paid $18.4 million for a 14.4% interest in OXi Technology Ltd., or OXi. In April 2019, our investment ownership was reduced to 13.8% as a result of new investment in OXi. Our investment in OXi is included in non-current other assets on our consolidated balance sheets. We determined the equity method of accounting applies to our investment as we have significant influence over OXi's operating and financial policies. We record our portion of OXi's net income/(loss) on a one quarter lag due to the timing of the availability of OXi's financial records. In addition, we amortize intangible assets that we recorded under the equity method of accounting, and such amortization as well as our portion of Oxi's net income/(loss) is included in equity investment loss on our consolidated statements of operations. As of June 30, 2019, we did not have any material related party transactions with OXi. As our investment in OXi is not material in relation to our financial position or results of operations, we have not summarized information as to the assets, liabilities and results of operations of OXi.

Foreign Currency

The U.S. dollar is our functional and reporting currency. We remeasure our monetary assets and liabilities not denominated in the functional currency into U.S. dollar equivalents at the rate of exchange in effect on the balance sheet date. We measure and record non-monetary balance sheet accounts at the historical rate in effect at the date of transaction. We remeasure foreign currency expenses at the weighted average exchange rate in the month that the transaction occurred. These foreign currency transactions and remeasurement gains and losses, resulted in a net loss of $1.1 million, $1.1 million and $0.7 million in fiscal 2019, 2018, and 2017, respectively. Gains and losses resulting from foreign currency transactions are included in selling, general, and administrative expenses in the consolidated statements of operations.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of net tangible and identifiable intangible assets acquired. Changes in our goodwill balance for fiscal 2019 and 2018 were as follows (in millions):

	2019	2018
Beginning balance	$ 372.8	$ 206.8
Acquisition activity	—	166.0
Ending balance	$ 372.8	$ 372.8

We have allocated our goodwill to two reporting units. We perform a qualitative assessment of the goodwill in the fourth quarter of each fiscal year, or earlier if there is a triggering event. In assessing the qualitative factors, we considered the impact of key factors including change in industry and competitive environment, market capitalization, stock price, gross margin and cash flow from operating activities. During our qualitative assessment in fiscal 2019, we determined there were triggering events which led us to performing a step 1 quantitative assessment. We concluded that the fair value of the reporting units exceeded their carrying amount by a significant amount, therefore, there is no need for impairment. No goodwill impairment was recognized for fiscal 2019, 2018, and 2017.

Impairment of Long-Lived Assets

We evaluate long-lived assets, such as property and equipment and intangible assets subject to amortization, for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. We measure recoverability of assets to be held and used by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. We review the carrying value of indefinite-lived intangible assets for impairment at least annually during the last quarter of our fiscal year, or more frequently if we believe indicators of impairment exist. If the carrying amount of the asset exceeds its estimated undiscounted future cash flows, we recognize an impairment charge in an amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of would be separately presented in the consolidated balance sheets and reported at the lower of the carrying amount or fair value less costs to sell and would no longer be depreciated. The assets and liabilities of a disposed group classified as held for sale would be presented separately in the appropriate asset and liability sections of the consolidated balance sheets. No impairment of long-lived assets was recognized for fiscal 2019, 2018 and 2017.

Other Accrued Liabilities

As of the end of fiscal 2019 and 2018, other accrued liabilities consisted of the following (in millions):

	2019	2018
Customer obligations	$ 52.0	$ 26.4
Inventory obligations	26.7	28.8
Warranty	4.0	5.5
Other	23.4	19.0
	$ 106.1	$ 79.7

Retention Costs

Retention costs reflect the cost associated with retention agreements entered into with key employees designed to ensure their continued commitment to the support and management of the operations of the company during the transition to new executive leadership. The retention period for employees covered under the retention program continues through November 2020. For the year ended June 30, 2019, the retention costs are broken down between cost of revenue ($0.1) million, research and development ($1.5) million and selling, general and administrative ($0.9) million.

Segment Information

We operate in one segment: the development, marketing, and sale of intuitive human interface solutions for electronic devices and products. The chief operating decision maker, or CODM, was the chief executive officer, or CEO, through mid-March and upon the departure of our CEO, our Board of Directors collectively became our CODM, on a temporary basis. Our CODMs evaluate financial performance and allocate resources using financial information reported on a company-wide basis.

Share-Based Compensation

We utilize the Black-Scholes option pricing model to estimate the grant date fair value of stock options granted to employees, which requires the input of highly subjective assumptions, including expected volatility and expected life. Historical and implied volatilities were used in estimating the fair value of our stock option awards. The contractual life of our outstanding options is seven years for options granted under our Amended and Restated 2010 Incentive Compensation Plan, or our 2010 Plan, or 10 years for options granted under our Amended and Restated 2001 Incentive Compensation Plan, or our 2001 Plan. Our outstanding options have vesting periods of three or four years, depending on when they were granted, and we used the simplified method to establish the expected life. Changes in these inputs and assumptions can materially affect the measure of estimated fair value of our share-based compensation. In fiscal years prior to 2018, we estimated forfeitures for share-based awards that were not expected to vest. See Note 9 Share-Based Compensation for further discussion on estimated forfeitures. No options were granted in fiscal 2019.

We charge the estimated fair value less actual forfeitures to earnings on a straight-line basis over the vesting period of the entire underlying award, which is generally three to four years for our stock options and deferred stock units, or DSU, awards, three years for our market stock units, or MSU, awards, three years for our performance stock units, or PSU, awards, and up to two years for shares purchased under our employee stock purchase plan.

We estimate the fair value of market-based MSUs at the date of grant using a Monte Carlo simulation model and amortize those fair values over the requisite service period, which is generally three years. The Monte Carlo simulation model that we use to estimate the fair value of market-based MSUs at the date of grant incorporates into the valuation the possibility that the market condition may not be satisfied. Provided that the requisite service is rendered, the total fair value of the market-based MSUs at the date of grant must be recognized as compensation expense even if the market condition is not achieved. However, the number of shares that ultimately vest can vary significantly with the performance of the specified market criteria.

We value PSUs using the aggregate intrinsic value on the date of grant and amortize the compensation expense over the three-year service period on a ratable basis, dependent upon the probability of meeting the performance measures.

Income Taxes

We account for income taxes under the asset and liability method. We recognize deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, and operating loss and tax credit carryforwards. We measure deferred tax assets and liabilities using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. We recognize the effect of a change in tax rates in income on deferred tax assets and liabilities in the period that includes the enactment date. We establish valuation allowances when necessary to reduce deferred tax assets to the amounts that are more likely than not to be realized.

We use a two-step approach to recognizing and measuring uncertain tax positions. The first step is to determine whether it is more-likely-than-not that a tax position will be sustained upon examination, including resolution of any related appeals or litigation processes. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement with a taxing authority. The calculation of tax liabilities involves significant judgment in estimating the impact of uncertainties in the application of highly complex tax laws. Resolution of these uncertainties in a manner inconsistent with our expectations could have a material impact on our consolidated financial position, results of operations, and cash flows. We believe we have adequately provided for reasonably foreseeable outcomes in connection with the resolution of income tax uncertainties. However, our results have in the past, and could in the future, include favorable and unfavorable adjustments to our estimated tax liabilities in the period a determination of such estimated tax liability is made or resolved, upon the filing of an amended return, upon a change in facts, circumstances, or interpretation, or upon the expiration of a statute of limitation. Accordingly, our effective tax rate could fluctuate materially from period to period.

Research and Development

Research and development costs are expensed as incurred.

2. Net Income/(Loss) Per Share

The computation of basic and diluted net income per share for fiscal 2019, 2018, and 2017 was as follows (in millions, except per share amounts):

	2019	2018	2017
Numerator:			
Net income/(loss)	$ (22.9)	$ (124.1)	$ 48.8
Denominator:			
Shares, basic	34.6	34.2	34.8
Effect of dilutive share-based awards	—	—	0.8
Shares, diluted	34.6	34.2	35.6
Net income/(loss) per share:			
Basic	$ (0.66)	$ (3.63)	$ 1.40
Diluted	$ (0.66)	$ (3.63)	$ 1.37

Diluted net income per share does not include the effect of potential common shares related to certain share-based awards for fiscal 2019, 2018, and 2017 as follows (in millions):

	2019	2018	2017
Share-based awards	2.2	2.3	1.4

These share-based awards were not included in the computation of diluted net income per share because the proceeds received, if any, from such share-based awards combined with the average unamortized compensation costs, were greater than the average market price of our common stock, and therefore, their effect would have been antidilutive.

Our basic net income per share amounts for each period presented have been computed using the weighted average number of shares of common stock outstanding. Our diluted net income per share amounts for each period presented include the weighted average effect of potentially dilutive shares. We used the “treasury stock” method to determine the dilutive effect of our stock options, DSUs, MSUs and PSUs.

3. Property and Equipment

Property and equipment as of the end of fiscal 2019 and 2018 consisted of the following (in millions):

	Life	2019	2018
Land	—	$ 13.3	$ 13.3
Building and building improvements	Up to 35 years	52.7	51.8
Computer equipment	3 - 5 years	48.2	42.9
Manufacturing equipment	1 - 5 years	63.0	78.1
Furniture, fixtures, and leasehold improvements	3 - 10 years	25.1	24.1
Capitalized software	3 - 7 years	33.8	35.0
		236.1	245.2
Accumulated depreciation and amortization		(133.1)	(127.4)
Property and equipment, net		$ 103.0	$ 117.8

In fiscal 2019 and 2018, there was $16.8 million and $8.2 million, respectively, of property and equipment retired which was fully amortized.

4. Acquisitions

Conexant

On June 11, 2017, we entered into a securities purchase agreement to acquire all of the outstanding limited liability company interests of Conexant Systems, LLC, or Conexant, a technology leader in voice and audio processing solutions for the smart home, or the Conexant Acquisition. The Conexant Acquisition was intended to increase our presence in the smart home market and increase opportunities to grow revenue. Effective July 25, 2017, or the Conexant Closing Date, we completed the Conexant Acquisition for an initial purchase price of (i) $305.4 million in cash, (ii) 726,666 shares of our common stock, or the Stock Consideration, valued at $39.1 million, and (iii) the assumption of a $3.5 million stock appreciation rights liability, with $16.8 million of the purchase price held in escrow to secure the seller's indemnification obligations under the purchase agreement and $7.0 million of the purchase price held in escrow to secure the seller's adjustment escrow obligations under the purchase agreement. Subsequently, we determined that $1.9 million of net adjustments to the purchase price were required, reducing the acquisition date fair value of the consideration transferred to a total of $346.2 million. The Stock Consideration was issued at closing in an exempt private placement.

The Conexant Acquisition was accounted for using the purchase method of accounting in accordance with the business acquisition guidance. Under the purchase accounting method, the total estimated purchase consideration of the acquisition was allocated to the tangible and identifiable intangible assets acquired and liabilities assumed based on their relative fair values. The excess of the purchase consideration over the net tangible and identifiable intangible assets acquired and liabilities was recorded as goodwill. Our estimate of the fair values of the acquired intangible assets at June 30, 2018, was based on established and accepted valuation techniques performed with the assistance of our third-party valuation specialists.

The following table summarizes the final amounts recorded for the fair values of the assets acquired and liabilities assumed (in millions):

Cash	$ 4.3
Accounts receivable	11.7
Inventory	51.0
Other current assets	3.5
Property and equipment	3.2
Acquired intangible assets	145.7
Other assets	0.9
Total identifiable assets acquired	220.3
Accounts payable	14.2
Accrued compensation	1.3
Other accrued liabilities	9.3
Other long-term liabilities	3.0
Net identifiable assets acquired	192.5
Goodwill	153.7
Net assets acquired	$ 346.2

The estimate of the intangible assets as of June 30, 2018, totaling $145.7 million included the following: $104.9 million was allocated to developed technology and will amortize over an estimated weighted average useful life of 6 years; $38.4 million was allocated to customer relationships and will be amortized over an estimated useful life of 5 years; $1.8 million was allocated to trademarks and will be amortized over an estimated useful life of 7 years; $0.4 million was allocated to backlog and was amortized over an estimated useful life of less than 1 year; and $0.2 million was allocated to in-process research and development, which we began to amortize in fiscal 2019 when the work was determined to be substantively complete and we are amortizing over an estimated useful life of three years. Developed technology consists of semiconductor system solutions for audio and imaging applications. We estimated the fair value of the identified intangible assets using a discounted cash flow model for each of the underlying identified intangible assets. These fair value measurements were based on significant inputs not observable in the market and thus represent a Level 3 measurement. Key assumptions include the level and timing of expected future cash flows, conditions and demands specific to each intangible asset over its remaining useful life, and discount rates we believe to be consistent with the inherent risks associated with each type of asset, which range from 9% to 14%. The fair value of these intangible assets is primarily affected by the projected income and the anticipated timing of the projected income associated with each intangible asset coupled with the discount rates used to derive their estimated present values. We believe the level and timing of expected future cash flows appropriately reflects market participant assumptions.

The value of goodwill reflects the anticipated synergies of the combined operations and workforce of Conexant as of the Conexant Closing Date.

All of the goodwill was deductible for income tax purposes.

Prior to the Conexant Acquisition, we did not have an existing relationship or transactions with Conexant.

Marvell Multimedia Solutions Business

On June 11, 2017, the Company entered into an asset purchase agreement to acquire the assets of the multimedia solutions business of Marvell Technology Group Ltd., or Marvell, a leading provider of advanced video and audio processing applications for the smart home, or the Marvell Business Acquisition. The Marvell Business Acquisition was also intended to increase our presence in the smart home market and increase opportunities to grow revenue. Effective September 8, 2017, or the Marvell Closing Date, we completed the Marvell Business Acquisition for a purchase price of $93.7 million in cash.

The acquisition was accounted for using the purchase method of accounting in accordance with the business acquisition guidance. Under the purchase accounting method, the total estimated purchase consideration of the acquisition was allocated to the tangible and identifiable intangible assets acquired and liabilities assumed based on their relative fair values. The excess of the purchase consideration over the net tangible and identifiable intangible assets acquired and liabilities was recorded as goodwill. The estimate of the fair values of the acquired intangible assets at June 30, 2018, was based on established and accepted valuation techniques performed with the assistance of our third-party valuation specialists.

The following table summarizes the amounts recorded for the estimated fair values of the assets acquired and liabilities assumed as of the Marvell Closing Date (in millions):

Inventory	$	28.4
Property and equipment		5.0
Acquired intangible assets		48.7
Total identifiable assets acquired		82.1
Accrued liabilities		0.7
Net identifiable assets acquired		81.4
Goodwill		12.3
Net assets acquired	$	93.7

Of the $48.7 million of acquired intangible assets, $29.0 million was allocated to developed technology and will be amortized over an estimated weighted average useful life of 3.6 years; $15.1 million was allocated to customer relationships and will be amortized over an estimated useful life of 4 years, $0.1 million was allocated to backlog and will be amortized over an estimated useful life of less than 1 year; and $4.5 million was allocated to in-process research and development and will be amortized over an estimated useful life to be determined at the date the underlying projects are deemed to be substantively complete. Developed technology consists of semiconductor system solutions for advanced video and audio processing applications. We estimated the fair value of the identified intangible assets using a discounted cash flow model for each of the underlying identified intangible assets. These fair value measurements were based on significant inputs not observable in the market and thus represent a Level 3 measurement. Key assumptions include the level and timing of expected future cash flows, conditions and demands specific to each intangible asset over its remaining useful life, and discount rates we believe to be consistent with the inherent risks associated with each type of asset, which range from 14% to 32%. The fair value of these intangible assets is primarily affected by the projected income and the anticipated timing of the projected income associated with each intangible asset, coupled with the discount rates used to derive their estimated present values. We believe the level and timing of expected future cash flows appropriately reflects market participant assumptions.

The value of goodwill reflects the anticipated synergies of the combined operations and workforce of the transferred Marvell Business Acquisition assets as of the Marvell Closing Date.

All of the goodwill was deductible for income tax purposes.

Prior to the Marvell Business Acquisition, we did not have an existing relationship or transactions with Marvell.

5. Acquired Intangibles

The following table summarizes the life, the gross carrying value of our acquired intangible assets, and the related accumulated amortization as of the end of fiscal 2019 and 2018 (in millions):

		2019			2018		
	Weighted Average Life in Years	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
Display driver technology	5.3	$ 164.0	$ (148.1)	$ 15.9	$ 164.0	$ (116.5)	$ 47.5
Audio and video technology	5.3	138.6	(49.4)	89.2	133.9	(22.8)	111.1
Customer relationships	4.1	81.8	(49.9)	31.9	81.8	(38.5)	43.3
Fingerprint authentication technology	4.7	47.2	(47.2)	—	55.7	(53.7)	2.0
Licensed technology and other	4.2	7.7	(3.6)	4.1	9.0	(3.0)	6.0
Patents	8.1	4.4	(2.0)	2.4	4.6	(1.7)	2.9
Tradename	7.0	1.8	(0.5)	1.3	1.9	(0.2)	1.7
Backlog	0.0	—	—	—	0.5	(0.5)	—
In-process research and development	Not applicable	—	—	—	4.7	—	4.7
Acquired intangibles, gross	4.4	$ 445.5	$ (300.7)	$ 144.8	$ 456.1	$ (236.9)	$ 219.2

In fiscal 2019, there was $8.5 million of fingerprint developed technology, $1.3 million of licensed technology and other, $0.5 million of backlog and $0.2 million of patents retired which were fully depreciated. In fiscal 2018, there was $20.1 million of customer relationships, $4.3 million of fingerprint developed technology and $0.1 million of patents retired which were fully depreciated.

Amortization expense is calculated using the straight-line method over the estimated useful lives of the acquired intangibles. The total amortization expense for the acquired intangible assets was $74.4 million in fiscal 2019, $83.9 million in fiscal 2018, and $59.3 million in fiscal 2017. This amortization expense was included in our consolidated statements of operations as acquired intangibles amortization and cost of revenue.

The following table presents expected annual aggregate amortization expense in future fiscal years (in millions):

2020	$	51.4
2021		37.5
2022		32.9
2023		20.4
2024		2.5
Thereafter		0.1
Future amortization	$	144.8

6. Debt

Convertible Debt

On June 20, 2017, we entered into a purchase agreement, or the Purchase Agreement, with Wells Fargo Securities, LLC, as representative of the initial purchasers named therein, or collectively, the Initial Purchasers, pursuant to which we issued and sold, and the Initial Purchasers purchased, $500 million aggregate principal amount of our 0.50% convertible senior notes due 2022, or the Notes, in a private placement transaction. Pursuant to the Purchase Agreement, we also granted the Initial Purchasers a 30-day option to purchase up to an additional $25 million aggregate principal amount of Notes, which was exercised in full on June 21, 2017. The net proceeds, after deducting the Initial Purchasers' discounts, were $514.5 million, which included proceeds from the Initial Purchasers' exercise of their option to purchase additional Notes. We received the net proceeds on June 26, 2017, which we used to repurchase 1,698,400 shares of our common stock, to retire our outstanding bank debt, and to provide additional cash resources to fund the Conexant and Marvell Business Acquisitions.

The Notes bear interest at a rate of 0.50% per year. Interest accrued from June 26, 2017, and is payable semi-annually in arrears, on June 15 and December 15 of each year, beginning on December 15, 2017. The Notes are senior unsecured obligations and rank senior in right of payment to any of our indebtedness that is expressly subordinated in right of payment to the Notes; equal in right of payment to any our liabilities that are not so subordinated; effectively junior in right of payment to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries.

The Notes will mature on June 15, 2022, or the Maturity Date, unless earlier repurchased, redeemed or converted.

Holders may convert all or any portion of their Notes, in multiples of $1,000 principal amounts, at their option at any time prior to the close of business on the business day immediately preceding March 15, 2022 under certain defined circumstances.

On or after March 15, 2022 until the close of business on the business day immediately preceding the Maturity Date, holders may convert all or any portion of their Notes, in multiples of $1,000 principal amounts, at the option of the holder. Upon conversion, we will pay or deliver, at our election, shares of common stock, cash, or a combination of cash and shares of common stock.

The conversion rate for the Notes is initially 13.6947 shares of common stock per $1,000 principal amount of Notes (equivalent to an initial conversion price of approximately $73.02 per share of common stock). The conversion rate is subject to adjustment in certain circumstances.

Upon the occurrence of a fundamental change (as defined in the Notes indenture), holders of the Notes may require us to repurchase for cash all or a portion of their Notes at a fundamental change repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest up to, but excluding, the fundamental change repurchase date.

We may not redeem the Notes prior to June 20, 2020. We may redeem for cash all or any portion of the Notes, at our option, on or after June 20, 2020, if the last reported sale price of our common stock, as determined by us, has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide notice of redemption at a redemption price equal to 100% of the principal amount of the Notes to be redeemed, plus accrued and unpaid interest up to, but excluding, the redemption date. Our policy is to settle the principal amount of our Notes with cash upon conversion or redemption.

As of the issuance date of the Notes, we recorded $82.1 million of the principal amount to equity, representing the debt discount for the difference between our estimated nonconvertible debt borrowing rate of 4.39% and the coupon rate of the Notes of 0.50% using a five-year life, which coincides with the term of the Notes. In addition, we allocated the total of $11.1 million of debt issuance costs, consisting of the Initial Purchaser's discount of $10.5 million and legal, accounting, and printing costs of $579,000, pro rata, to the equity and debt components of the Notes, or $1.9 million and $9.2 million, respectively. The debt discount and the debt issuance costs allocated to the debt component are amortized as interest expense using the effective interest method over five years.

The contractual interest expense and amortization of discount on the Notes for fiscal 2019, were as follows (in millions):

	Fiscal 2019
Interest expense	$ 2.6
Amortization of discount and debt issuance costs	17.6
Total interest	$ 20.2

The unamortized amounts of the debt issuance cost and discount associated with the Notes as of June 30, 2019, were $5.7 million and $51.0 million, respectively.

Revolving Credit Facility

At the end of fiscal 2017, we had $220.0 million principal outstanding under our Credit Agreement consisting of $100.0 million under our revolving credit facility and $120.0 million under our term loan arrangement. At the beginning of fiscal 2018, we issued $525.0 million principal amount of convertible senior notes, or the Notes, and utilized a portion of the proceeds from our Notes to retire the outstanding principal and interest balances on our revolving credit facility and our term loan arrangement. At the end of July 2017, we made an election to reduce the commitment under the revolving credit facility from $450.0 million to $250.0 million as we were able to complete the Conexant Acquisition with available cash.

In September 2017, we entered into an Amendment and Restatement Agreement, or the Agreement, with the lenders that are party thereto, or the Lenders, and Wells Fargo Bank, National Association, as administrative agent for the Lenders. The Agreement terminated our term loan arrangement and provides for a revolving credit facility in a principal amount of up to $200 million, which includes a $20 million sublimit for letters of credit and a $20 million sublimit for swingline loans. Under the terms of the Agreement, we may, subject to the satisfaction of certain conditions, request increases in the revolving credit facility commitments in an aggregate principal amount of up to $100 million to the extent existing or new lenders agree to provide such increased or additional commitments, as applicable. Proceeds under the revolving credit facility are available for working capital and general corporate purposes. As of June 30, 2019, there is no balance outstanding under the revolving credit facility. As a result of terminating our term loan arrangement, we expensed the remaining debt issuance costs attributable to the term loan of $1.0 million during the first quarter of fiscal 2018.

The revolving credit facility is required to be repaid in full on the earlier of (i) September 27, 2022, and (ii) the date 91 days prior to the Maturity Date of the Notes if the Notes have not been refinanced in full by such date. Debt issuance costs of $2.3 million will be amortized over 60 months.

Our obligations under the Agreement are guaranteed by the material domestic subsidiaries of our company, subject to certain exceptions (such material subsidiaries, together with our company, collectively, the Credit Parties). The obligations of the Credit Parties under the Agreement and the other loan documents delivered in connection therewith are secured by a first priority security interest in substantially all of the existing and future personal property of the Credit Parties, including, without limitation, 65% of the voting capital stock of certain of the Credit Parties' direct foreign subsidiaries, subject to certain exceptions.

The revolving credit facility bears interest at our election of a Base Rate plus an Applicable Margin or LIBOR plus an Applicable Margin. Swingline loans bear interest at a Base Rate plus an Applicable Margin. The Base Rate is a floating rate that is the greater of the Prime Rate, the Federal Funds Rate plus 50 basis points, or LIBOR plus 100 basis points. The Applicable Margin is based on a sliding scale which ranges from 0.25 to 100 basis points for Base Rate loans and 100 basis points to 175 basis points for LIBOR loans. We are required to pay a commitment fee on any unused commitments under the Agreement which is determined on a leverage-based sliding scale ranging from 0.175% to 0.25% per annum. Interest and fees are payable on a quarterly basis. The LIBOR index is expected to be discontinued the end of 2021. Under our credit facility, when the LIBOR index is discontinued, we will switch to a comparable or successor rate as approved by the Administrative Agent, which is currently anticipated to be the Secured Overnight Financing Rate, or SOFR.

Under the Agreement, there are various restrictive covenants, including financial covenants which limit the consolidated total leverage ratio, or leverage ratio, the consolidated interest coverage ratio, or interest coverage ratio, a restriction which places a limit on the amount of capital expenditures that may be made in any fiscal year, a restriction that permits up to $50 million per fiscal quarter of accounts receivable financings, and sets the Specified Leverage Ratio. The leverage ratio is the ratio of debt as of the measurement date to earnings before interest, taxes, depreciation and amortization, or EBITDA, for the four consecutive quarters ending with the quarter of measurement. The current leverage ratio shall not exceed 3.50 to 1.00 provided that for the four fiscal quarters ending after the date of a material acquisition, such maximum leverage ratio shall be adjusted to 3.75 to 1.00, and thereafter, shall not be more than 3.50 to 1.00. The interest coverage ratio is EBITDA to interest expense for the four consecutive quarters ending with the quarter of measurement. The interest coverage ratio must not be less than 3.50 to 1.0 during the term of the Agreement. The Specified Leverage Ratio is the ratio used in determining, among other things, whether we are permitted to make dividends and/or prepay certain indebtedness, at a fixed ratio of 3.00 to 1.00. As of the end of the fiscal year, we were in compliance with the restrictive covenants.

7. Commitments and Contingencies

Leases

We maintain office facilities in various locations under operating leases with expiration dates from fiscal 2019 to fiscal 2024, some of which have renewal options of one to five years. Our leased office facilities are located in Armenia, China, Denmark, Hong Kong, India, Japan, Korea, Switzerland, Taiwan, and the United States. We recognized rent expense on a straight-line basis of $10.3 million, $12.0 million, and $10.6 million for fiscal 2019, 2018, and 2017, respectively.

The aggregate minimum rental commitments in future fiscal years for non-cancelable operating leases with initial or remaining terms in excess of one year were as follows (in millions):

Fiscal Year	Operating Lease Payments
2020	$ 7.4
2021	3.2
2022	0.9
2023	0.3
2024	0.1
Total minimum operating lease payments	$ 11.9

Contingencies

We have in the past and may in the future receive notices from third parties that claim our products infringe their intellectual property rights. We cannot be certain that our technologies and products do not and will not infringe issued patents or other proprietary rights of third parties.

Any infringement claims, with or without merit, could result in significant litigation costs and diversion of management and financial resources, including the payment of damages, which could have a material adverse effect on our business, financial condition, and results of operations.

Indemnifications

In connection with certain agreements, we are obligated to indemnify the counterparty against third party claims alleging infringement of certain intellectual property rights by us. We have also entered into indemnification agreements with our officers and directors. Maximum potential future payments under these agreements cannot be estimated because these agreements do not have a maximum stated liability. However, historical costs related to these indemnification provisions have not been significant. We have not recorded any liability in our consolidated financial statements for such indemnification obligations.

8. Stockholders' Equity

Preferred Stock

We are authorized, subject to limitations imposed by Delaware law, to issue up to a total of 10,000,000 shares of preferred stock in one or more series without stockholder approval. Our Board of Directors has the power to establish, from time to time, the number of shares to be included in each series and to fix the rights, preferences, and privileges of the shares of each wholly unissued series and any of its qualifications, limitations, or restrictions. Our Board of Directors can also increase or decrease the number of shares of a series, but not below the number of shares of that series then outstanding, without any further vote or action by the stockholders.

Our Board of Directors may authorize the issuance of preferred stock with voting or conversion rights that could harm the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring, or preventing a change in control of our company and might harm the market price of our common stock and the voting power and other rights of the holders of our common stock. As of the end of fiscal 2019, there were no shares of preferred stock outstanding.

Shares Reserved for Future Issuance

Shares of common stock reserved for future issuance as of the end of fiscal 2019 were as follows:

Stock options outstanding	1,191,929
Deferred stock units outstanding	1,878,853
Market stock units outstanding	210,732
Performance stock units outstanding	192,618
Awards available for grant under all share-based compensation plans	2,891,466
Reserved for future issuance	6,365,598

Treasury Stock

Our cumulative authorization for our common stock repurchase program as of the end of fiscal 2019 is $1.3 billion, which was set to expire in July 2019. The program authorizes us to repurchase our common stock in the open market or in privately negotiated transactions depending upon market conditions and other factors. The number of shares repurchased and the timing of repurchases is based on the level of our cash balances, general business and market conditions, and other factors, including alternative investment opportunities. Common stock repurchased under this program is held as treasury stock. As of the end of fiscal 2019, we had $107.6 million remaining under our common stock repurchase program. In August 2019, our Board of Directors authorized the purchase of up to an additional $100.0 million of our common stock and extended the stock repurchase program through July 2021.

9. Share-Based Compensation

The purpose of our various share-based compensation plans is to attract, motivate, retain, and reward high-quality employees, directors, and consultants by enabling such persons to acquire or increase their proprietary interest in our common stock in order to strengthen the mutuality of interests between such persons and our stockholders and to provide such persons with annual and long-term performance incentives to focus their best efforts on the creation of stockholder value. Consequently, we determine whether to grant share-based compensatory awards subsequent to the initial award for our employees and consultants primarily on individual performance. Our share-based compensation plans with outstanding awards consist of our 2001 Plan; our 2010 Plan; and our 2010 Employee Stock Purchase Plan, or our 2010 ESPP.

Share-based compensation awards available for grant or issuance for each plan as of the beginning of the fiscal year, including changes in the balance of awards available for grant for fiscal 2019, were as follows:

	Awards Available Under All Share-Based Award Plans	2010 Incentive Compensation Plan	2010 Employee Stock Purchase Plan
Balance at June 2018	2,210,217	1,969,926	240,291
Additional shares authorized	1,852,498	1,400,000	452,498
Stock options granted	—	—	—
Deferred stock units granted	(1,266,131)	(1,266,131)	—
Market stock units granted	(163,059)	(163,059)	—
Performance stock units granted	(147,005)	(147,005)	—
Performance stock units performance adjustment	(1,065)	(1,065)	—
Market stock units performance adjustment	46,663	46,663	—
Purchases under employee stock purchase plan	(544,886)	—	(544,886)
Forfeited	1,328,116	1,328,116	—
Fungible Shares Ratio Adjustment	(423,882)	(423,882)	—
Balance at June 2019	2,891,466	2,743,563	147,903

Our 2001 Plan, which expired in March 2011, was replaced by our 2010 Plan. Option awards that are currently outstanding under our 2001 Plan will remain outstanding until exercised, delivered, forfeited, or cancelled under the terms of their respective grant agreements.

During the three months ended September 30, 2017, we adopted the ASU for Compensation-Stock Compensation which was issued by the FASB. This update simplifies several aspects of the accounting for employee share-based payment transactions, including the accounting for income taxes, forfeitures, and statutory tax withholding requirements, as well as classification in the statement of cash flows. Upon adoption of this ASU, we elected to change our accounting policy to account for forfeitures as they occur and we applied the accounting policy change on a modified retrospective basis. As a result of the adoption of this ASU, we recognized the net cumulative effect of this change as a $24.7 million increase to retained earnings, a $1.0 million increase to additional paid-in capital and established an additional $25.7 million of deferred tax assets for research credit and alternative minimum tax credit carryforwards. We have reflected excess tax benefits for share-based payments in the statement of cash flows as operating activities rather than financing activities on a prospective basis and therefore, prior periods have not been adjusted.

Share-based compensation and the related tax benefit recognized in our consolidated statements of income for fiscal 2019, 2018, and 2017 were as follows (in millions):

	2019	2018	2017
Cost of revenue	$ 3.1	$ 3.2	$ 2.2
Research and development	33.7	38.6	33.1
Selling, general, and administrative	22.2	29.5	26.5
Total	$ 59.0	$ 71.3	$ 61.8
Income tax benefit on share-based compensation	$ 4.3	$ 11.1	$ 16.1

We recognize a tax benefit upon expensing certain share-based awards associated with our share-based compensation plans, including nonqualified stock options, DSUs, MSUs, and PSUs, but we cannot recognize a tax benefit concurrent with the recognition of share-based compensation expenses associated with incentive stock options and employee stock purchase plan shares (qualified stock awards). For qualified stock awards we recognize a tax benefit only in the period when disqualifying dispositions of the underlying stock occur, which historically has been up to several years after vesting and in a period when our stock price substantially increases.

We determine excess tax benefit using the long-haul method in which we compare the actual tax benefit associated with the tax deduction from share-based award activity to the hypothetical tax benefit based on the grant date fair values of the corresponding share-based awards. Tax benefit associated with excess tax deduction creditable to income tax provision is recognized when incurred. Tax deficiency associated with a tax shortfall is debited to income tax provision when incurred.

Historically, we have issued new shares in connection with our share-based compensation plans, however, treasury shares are also available for issuance. Any additional shares repurchased under our common stock repurchase program will be available for issuance under our share-based compensation plans.

Stock Options

Our share-based compensation plans with outstanding stock option awards include our 2001 Plan and our 2010 Plan. Under our 2010 Plan, we may grant incentive stock options or nonqualified stock options to purchase shares of our common stock at not less than 100% of the fair market value, or FMV, on the date of grant.

Options granted under our 2010 Plan generally vest three to four years from the vesting commencement date and expire seven years after the date of grant if not exercised.

Certain stock option activity for fiscal 2019 and balances as of the end of fiscal 2019 were as follows:

	Stock Option Awards Outstanding	Weighted Average Exercise Price	Intrinsic Value (In millions)
Balance at June 2018	1,618,209	$ 57.14	
Exercised	(177,823)	29.16	
Forfeited	(57,091)	52.96	
Expired	(191,366)	72.40	
Balance at June 2019	1,191,929	59.07	$ 0.4
Exercisable at June 2019	1,163,841	59.23	$ 0.4

The aggregate intrinsic value was determined using the closing price of our common stock on the last trading day of fiscal 2019, or June 28, 2019, of $29.14 and excludes the impact of options that were not in-the-money. Approximately 8% of the stock option awards outstanding were vested and in-the-money as of the end of fiscal 2019.

At the end of fiscal 2019, we estimated that we have 1.2 million fully vested options with an aggregate intrinsic value of $0.4 million, having a weighted average exercise price of $59.07 and a weighted average remaining contractual term of 1.8 years. The weighted average remaining contractual term for the options exercisable is approximately 1.7 years.

Cash received and the aggregate intrinsic value of stock options exercised for fiscal 2019, 2018, and 2017 were as follows (in millions):

	2019	2018	2017
Cash received	$ 5.2	$ 16.7	$ 10.7
Aggregate intrinsic value	$ 2.4	$ 15.2	$ 12.3

There were no stock options granted in fiscal 2019. The fair value of each award granted under our share-based compensation plans for fiscal 2018 and 2017 was estimated at the date of grant using the Black-Scholes option pricing model, assuming no expected dividends and the following range of assumptions:

	2018	2017
Expected volatility	46.2%	45.2% - 48.3%
Expected life in years	4.4	3.8 - 4.6
Risk-free interest rate	1.8%	1.03% - 1.94%
Fair value per award	$ 18.04	$ 21.08

The unrecognized share-based compensation costs for stock options granted under our various plans were approximately $0.4 million as of the end of fiscal 2019, to be recognized over a weighted average period of approximately 0.71 years.

Deferred Stock Units

Our 2010 Plan provides for the grant of DSU awards to our employees, consultants, and directors. A DSU is a promise to deliver shares of our common stock at a future date in accordance with the terms of the DSU grant agreement. We began granting DSUs in January 2006.

DSUs granted under our 2010 Plan generally vest ratably over three to four years from the vesting commencement date. Delivery of shares under the plan takes place on the quarterly vesting dates. At the delivery date, we withhold shares to cover statutory minimum tax withholding by delivering a net quantity of shares. Until delivery of shares, the grantee has no rights as a stockholder.

An election to defer delivery of the underlying shares for unvested DSUs can be made by the grantee provided the deferral election is made at least one year before vesting and the deferral period is at least five years from the scheduled delivery date.

DSU activity, including DSUs granted, delivered, and forfeited in fiscal 2019, and the balance and aggregate intrinsic value of DSUs as of the end of fiscal 2019 was as follows:

	DSU Awards Outstanding	Aggregate Intrinsic Value (in millions)	Weighted Average Grant Date Fair Value
Balance at June 30, 2018	1,853,558		$ 49.75
Granted	1,266,131		36.90
Delivered	(729,564)		54.67
Forfeited	(511,272)		43.49
Balance at June 30, 2019	1,878,853	$ 54.7	40.90

Of the shares delivered, 172,363 shares valued at $6.7 million were withheld to meet statutory minimum tax withholding requirements. The aggregate intrinsic value was determined using the closing price of our common stock on the last trading day of fiscal 2019, or June 28, 2019, of $29.14.

The unrecognized share-based compensation cost for DSUs granted under our 2010 Plan was approximately $50.9 million as of the end of fiscal 2019, which will be recognized over a weighted average period of approximately 1.84 years. The aggregate market value of DSUs delivered in fiscal 2019, 2018, and 2017 was $35.7 million, $21.4 million, and $24.3 million, respectively.

Market Stock Units

Our 2010 Plan provides for the grant of MSU awards, to our employees, consultants, and directors. An MSU is a promise to deliver shares of our common stock at a future date based on the achievement of market-based performance requirements in accordance with the terms of the MSU grant agreement.

We have granted MSUs to our executive officers and other management members, which are designed to vest in three tranches with the target quantity for each tranche equal to one-third of the total MSU grant. The first tranche vests based on a one-year performance period; the second tranche vests based on a two-year performance period; and the third tranche vests based on a three-year performance period. Performance is measured based on the achievement of a specified level of total stockholder return, or TSR, relative to the TSR of the S&P Semiconductor Select Industry Index, or SPSISC Index, for grants made beginning in fiscal 2018 and relative to the Philadelphia Semiconductor Index, or SOX Index, for grants made prior to fiscal 2018. The potential payout ranges from 0% to 200% of the grant target quantity and is adjusted on a two-to-one ratio based on our TSR performance relative to the SPSISC Index TSR or SOX Index TSR using the following formula:

(100% + ([Synaptics TSR—{SPSISC Index TSR or SOX Index TSR}] x 2))

The payout for tranche one and two will not exceed 100% and the payout for tranche three will be calculated based on the total target quantity for the entire grant multiplied by the payout factor, based on performance for the three-year performance period, less shares issued for the first tranche and the second tranche.

Delivery of shares earned, if any, will take place on the dates provided in the applicable MSU grant agreement, assuming the grantee is still an employee, consultant, or director of our company at the end of the applicable performance period. On the delivery date, we withhold shares to cover statutory tax withholding requirements and deliver a net quantity of shares to the employee, consultant, or director after such withholding. Until delivery of shares, the grantee has no rights as a stockholder with respect to any shares underlying the MSU award.

MSU activity, including MSUs granted, delivered, and forfeited in fiscal 2019, and the balance and aggregate intrinsic value of MSUs as of the end of fiscal 2019 were as follows:

	MSU Awards Outstanding	Aggregate Intrinsic Value (in millions)	Weighted Average Grant Date Fair Value
Balance at June 30, 2018	354,726		$ 59.37
Granted	163,059		46.69
Performance adjustment	(46,663)		—
Delivered	(92,202)		53.33
Forfeited	(168,188)		59.41
Balance at June 30, 2019	210,732	$ 6.1	52.15

As a result of the Synaptics TSR underperforming the SOX Index TSR by 154 percentage points for the payout period ended in fiscal 2019, we did not deliver any of the targeted shares underlying the October 2015 MSU grants. As a result of the Synaptics TSR underperforming the SOX Index TSR by 90 percentage points for the payout period ended in fiscal 2019, we did not deliver any of the targeted shares underlying the October 2016 MSU grants. As a result of the Synaptics TSR outperforming the SOX Index TSR by 11 percentage points for the payout period ended in fiscal 2019, we delivered 100% of the targeted shares underlying the October and December 2017 MSU grants.

Of the shares delivered, 33,981 shares valued at $1.3 million were withheld to meet statutory minimum tax withholding requirements. The aggregate intrinsic value assumes a 100% payout factor and was determined using the closing price of our common stock on the last trading day of fiscal 2019, or June 28, 2019, of $29.14.

The fair value of each MSU granted from our plans for fiscal 2019, 2018, and 2017 was estimated at the date of grant using the Monte Carlo simulation model, assuming no expected dividends and the following assumptions:

	2019	2018	2017
Expected volatility of company	50.58%	49.16% - 50.60%	52.54%
Expected volatility of SOX index	23.40%	22.37% - 22.52%	21.23%
Correlation coefficient	0.51	0.52 - 0.53	0.45
Expected life in years	2.88	2.80 - 2.92	2.92
Risk-free interest rate	2.92%	1.72% - 1.88%	1.01%
Fair value per award	$27.70 - $85.52	$48.22 - $59.19	$67.51

We amortize the compensation expense over the three-year performance and service period. The unrecognized share-based compensation cost of our outstanding MSUs was approximately $7.0 million as of the end of fiscal 2019, which will be recognized over a weighted average period of approximately 0.94 years.

Performance Stock Units

Our 2010 Plan provides for the grant of PSU awards to our employees, consultants, and directors. A PSU is a promise to deliver shares of our common stock at a future date based on the achievement of performance-based requirements in accordance with the terms of the PSU grant agreement.

We have granted PSUs to our executive officers and other management members, which are designed to vest in three tranches with the target quantity for each tranche equal to one-third of the total PSU grant. The grants have a specific one-year performance period and vesting occurs over three service periods with the final service period ending approximately three years from the grant date. Performance is measured based on the achievement of a specified level of non-GAAP earnings per share. The potential payout ranges from 0% to 200% of the grant target quantity and is adjusted on a linear basis with a payout triggering if our non-GAAP earnings per share equals greater than 65% of the target with a maximum payout achieved at 135% of target.

Delivery of shares earned, if any, will take place on the dates provided in the applicable PSU grant agreement, assuming the grantee is still an employee, consultant, or director of our company at the end of the applicable service period. On the delivery date, we withhold shares to cover statutory tax withholding requirements and deliver a net quantity of shares to the employee, consultant, or director after such withholding. Until delivery of shares, the grantee has no rights as a stockholder with respect to any shares underlying the PSU award.

During the fiscal year ended June 30, 2019, PSU activity, including PSUs granted, delivered, and forfeited, and the balance and aggregate intrinsic value of PSUs as of June 30, 2019 was as follows:

	PSU Awards Outstanding	Aggregate Intrinsic Value (in millions)	Weighted Average Grant Date Fair Value
Balance at June 30, 2018	294,541		$ 39.48
Granted	147,005		35.41
Performance adjustment	1,065		—
Delivered	(92,470)		39.54
Forfeited	(157,523)		37.00
Balance at June 30, 2019	192,618	$ 5.6	38.35

We value PSUs using the aggregate intrinsic value on the date of grant and amortize the compensation expense over the three-year service period on a ratable basis, dependent upon the probability of meeting the performance measures. Of the shares delivered, 36,332 shares valued at $1.4 million were withheld to meet statutory minimum tax withholding requirements. The unrecognized share-based compensation cost of our outstanding PSUs was approximately $2.4 million as of June 30, 2019, which will be recognized over a weighted average period of approximately 1.03 years.

Employee Stock Purchase Plan

Our 2010 ESPP, became effective on January 1, 2011. The 2010 ESPP allows employees to designate up to 15% of their base compensation, subject to legal restrictions and limitations, to purchase shares of common stock at 85% of the lesser of the FMV at the beginning of the offering period or the exercise date. The offering period extends for up to two years and includes four exercise dates occurring at six-month intervals. Under the terms of our 2010 ESPP, if the FMV at an exercise date is less than the FMV at the beginning of the offering period, the current offering period will terminate and a new two-year offering period will commence.

Shares purchased, weighted average purchase price, cash received, and the aggregate intrinsic value for employee stock purchase plan purchases in fiscal 2019, 2018, and 2017 were as follows (in millions, except shares purchased and weighted average purchase price):

	2019	2018	2017
Shares purchased	544,886	486,263	302,085
Weighted average purchase price	$ 29.48	$ 32.07	$ 46.74
Cash received	$ 16.1	$ 15.6	$ 14.1
Aggregate intrinsic value	$ 2.8	$ 3.9	$ 2.7

The fair value of each award granted under our 2010 ESPP for fiscal 2019, 2018, and 2017 was estimated using the Black-Scholes option pricing model, assuming no expected dividends and the following range of assumptions:

	2019	2018	2017
Expected volatility	43.8%-44.23%	43.7% - 49.8%	38.4% - 54.9%
Expected life in years	0.5 - 1.5	0.5 - 2.0	0.5 - 2.0
Risk-free interest rate	2.43%-2.68%	1.42% - 2.45%	0.62% - 1.20%
Fair value per award	$ 15.63	$ 13.54	$ 20.44

The expected volatility is based on either implied volatility for the expected lives of 0.5 years or a weighting of implied and historical volatility for expected lives greater than 0.5 years. The expected life is the period starting at the enrollment date until each purchase date remaining in the offering period at the date of enrollment in the plan. The risk-free interest rate is based on U.S. Treasury yields or yield curve in effect for each expected life.

Unrecognized share-based compensation costs for awards granted under our 2010 ESPP at the end of fiscal 2019 were approximately $3.4 million that will be amortized over the next 4 months.

10. Employee Benefit Plans

401(k) Plan

We have a 401(k) Retirement Savings Plan for full-time employees in the United States. Under the plan, eligible employees may contribute a portion of their net compensation up to the annual limit of $19,000, or $25,000 for employees who are 50 years or older. In fiscal 2019, we provided matching funds of 25% of our employees’ contributions, excluding catch-up contributions. The employer matching funds vest 25% over four years and are fully vested at the end of the fourth year. We made matching contributions of $2.4 million, $2.8 million, and $2.3 million in fiscal 2019, 2018, and 2017 respectively.

11. Income Taxes

On December 22, 2017, the U.S. government enacted comprehensive tax legislation, commonly known as the Tax Cuts and Jobs Act of 2017, or the Act, which significantly revised the Internal Revenue Code of 1986, as amended. The Act contains broad and complex changes to corporate taxation, including, in part, reduction of the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously considered permanently reinvested, and creates new taxes on certain foreign sourced earnings. As our accounting and tax year is the fiscal period ending on the last Saturday in June, U.S. federal tax law requires that taxpayers with a fiscal year that spans the effective date of a rate change to calculate a blended tax rate based on the pro rata number of days in the fiscal year before and after the effective date. As a result, our U.S. federal tax rate for fiscal 2018 was a days-weighted blended tax rate of 28.17%. For fiscal 2019 and subsequent tax years, our U.S. federal tax rate is 21%.

Staff Accounting Bulletin 118 allows companies to record provisional amounts and recognize the effect of the tax law during a measurement period. The measurement period ended in the second quarter of our fiscal 2019. As of June 30, 2019, we have finalized our accounting for the tax impact of the Act. However, further technical guidance related to the Act, including final regulations on a broad range of topics, is expected to be issued and, as such, if our interpretation and final accounting are inconsistent with future regulations and guidance, we will recognize the impact as a discrete item in the period such guidance is issued.

The Global Intangible Low-Tax Income, or GILTI, which is a provision under the Act, imposes a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. GILTI requires an accounting policy election of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current period expense when incurred, or (2) factoring such amounts into the measurement of deferred taxes. We elected to treat GILTI as a period cost and recognize the impact in the period when it is incurred.

Income/(loss) before provision for income taxes for fiscal 2019, 2018, and 2017 consisted of the following (in millions):

	2019	2018	2017
United States	$ (40.6)	$ (51.1)	$ (10.1)
Foreign	19.8	(30.7)	71.4
Income/(loss) before provision for income taxes	$ (20.8)	$ (81.8)	$ 61.3

The provision for income taxes for fiscal 2019, 2018, and 2017 consisted of the following (in millions):

	2019	2018	2017
Current tax expense/(benefit)			
Federal	$ (4.9)	$ 21.5	$ 9.6
Foreign	20.4	14.1	25.5
	15.5	35.6	35.1
Deferred tax expense/(benefit)			
Federal	(8.5)	14.4	(10.6)
Foreign	(6.7)	(9.5)	(12.3)
	(15.2)	4.9	(22.9)
Provision for income taxes	$ 0.3	$ 40.5	$ 12.2

The provision for income taxes differs from the federal statutory rate for fiscal 2019, 2018, and 2017 as follows (in millions):

	2019	2018	2017
Provision at U.S. federal statutory tax rate	$ (4.4)	$ (22.9)	$ 21.5
Qualified stock options	4.0	4.9	5.5
Shortfall related to share-based compensation	3.3	4.1	—
Non-deductible officer compensation	1.1	—	—
Business credits	(6.1)	(4.9)	(3.6)
Foreign tax differential	1.0	16.5	(13.2)
Non-deductible portion of contingent consideration	—	—	0.9
Change in valuation allowance	—	—	(0.8)
Nondeductible amortization	0.7	1.2	1.6
Taxes associated with one-time transition tax	—	44.1	—
Impact of corporate tax rate change on deferred taxes	—	(2.7)	—
Other differences	0.7	0.2	0.3
Provision for income taxes	$ 0.3	$ 40.5	$ 12.2

Net deferred tax assets of $31.1 million and $15.9 million were non-current as of the end of fiscal 2019 and 2018, respectively, and were included in other assets in the accompanying consolidated balance sheets.

Significant components of our deferred tax assets (liabilities) as of the end of fiscal 2019 and 2018 consisted of the following (in millions):

	2019	2018
Deferred tax assets:		
Investment writedowns	$ —	$ 1.1
Inventory writedowns	12.1	11.6
Property and equipment	1.5	1.9
Accrued compensation	0.8	0.1
Deferred compensation	0.5	0.6
Share-based compensation	9.5	11.1
Business credit carryforward	37.3	25.3
Acquisition intangibles	7.0	0.6
Other accruals	3.3	1.6
	72.0	53.9
Valuation allowance	(30.4)	(23.3)
	41.6	30.6
Deferred tax liabilities:		
Interest	(10.5)	(14.7)
	(10.5)	(14.7)
Net deferred tax assets	$ 31.1	$ 15.9

Realization of deferred tax assets depends on our generating sufficient U.S. and certain foreign taxable income in future years to obtain a benefit from the utilization of those deferred tax assets on our tax returns. Accordingly, the amount of deferred tax assets considered realizable may increase or decrease when we reevaluate the underlying basis for our estimates of future U.S. and foreign taxable income. As of the end of fiscal 2019, a valuation allowance of $30.4 million is maintained to reduce deferred tax assets to levels we believe are more likely than not to be realized through future taxable income. The net change in the valuation allowance during fiscal 2019 was an increase of $7.1 million.

Undistributed earnings of our foreign subsidiaries were approximately $859.3 million as of the end of fiscal 2019 and are considered to be indefinitely reinvested overseas.

As of the end of fiscal 2019, we had federal and California net operating loss carryforwards of approximately zero and $33.2 million, respectively. The California net operating loss will begin to expire in fiscal 2020, if not utilized. Under current tax law, net operating loss and tax credit carryforwards available to offset future income or income taxes may be limited by statute or upon the occurrence of certain events, including significant changes in ownership.

We had $11.0 million and $37.8 million of federal and state research tax credit carryforwards, respectively, as of the end of fiscal 2019. The federal research tax credit carryforward will begin to expire in 2026 and the state research tax credit can be carried forward indefinitely. We also had $0.8 million of federal alternative minimum tax credit carryforward available to offset future federal tax liabilities with no expiration or potentially refundable under current tax laws.

The total liability for gross unrecognized tax benefits related to uncertain tax positions, included in other liabilities in our consolidated balance sheets, decreased by $5.9 million from $24.8 million in fiscal 2018 to $18.9 million in fiscal 2019. Of this amount, $13.1 million will reduce the effective tax rate on income from continuing operations, if recognized. A reconciliation of the beginning and ending balance of gross unrecognized tax benefits for fiscal 2019, 2018, and 2017 consisted of the following (in millions):

	2019	2018	2017
Beginning balance	$ 24.8	$ 15.2	$ 13.4
Increase in unrecognized tax benefits related to current year tax positions	4.2	10.5	2.5
Increase in unrecognized tax benefits related to prior year tax positions	—	—	0.1
Decrease due to effective settlement with tax authorities	(6.2)	—	—
Remeasurement of unrecognized tax benefits	(2.0)	—	—
Decrease due to statute expiration	(1.9)	(0.9)	(0.8)
Ending Balance	$ 18.9	$ 24.8	$ 15.2

Accrued interest and penalties remained flat, increased by $0.7 million, and decreased by $0.2 million representing income tax expense or benefit, in fiscal 2019, 2018, and 2017, respectively. Accrued interest and penalties were $1.9 million as of June 30, 2019 and 2018. Our policy is to classify interest and penalties, if any, as components of income tax expense.

It is reasonably possible that the amount of liability for unrecognized tax benefits may change within the next 12 months; an estimate of the range of possible changes could result in a decrease of $1.8 million to an increase of $3.0 million.

In July 2018, the U.S. Ninth Circuit Court of Appeals reversed a 2015 decision of the U.S. Tax Court in Altera Corp. v. Commissioner that found that the Treasury regulations addressing the treatment of stock-based compensation in a cost-sharing arrangement with a related party were invalid. In August 2018, the U.S. Ninth Circuit Court of Appeals withdrew its July 2018 opinion to allow time for the reconstituted panel to confer on this appeal. In June 2019, the reconstituted panel of the U.S. Ninth Circuit Court of appeals reversed the 2015 Tax Court decision. As our tax filing position is consistent with the treasury regulations, no adjustment to our financial statements is required. However, due to the uncertainties with respect to the ultimate resolution, we will continue to monitor developments in this case.

Our major tax jurisdictions are the United States, Hong Kong SAR, and Japan. From fiscal 2013 onward, we remain subject to examination by one or more of these jurisdictions. In August 2018, we received the revenue agent’s report resolving the fiscal 2014 and 2015 examination by the Internal Revenue Service with no material impact on our consolidated financial statements. Our case is pending review by the Joint Committee on Taxation, which we anticipate will conclude in our fiscal 2020. Any prospective adjustments to our unrecognized tax benefits will be recorded as an increase or decrease to income tax expense and cause a corresponding change to our effective tax rate. Accordingly, our effective tax rate could fluctuate materially from period to period.

12. Segment, Customers, and Geographic Information

We operate in one segment: the development, marketing, and sale of semiconductor products used in electronic devices and products. We generate our revenue from three broad product categories: the mobile product applications market, the personal computing, or PC, product applications market, and the Internet of Things, or IoT, product market.

Net revenue within geographic areas based on our customers' locations for fiscal 2019, 2018, and 2017, consisted of the following (in millions):

	2019	2018	2017
China	$ 844.8	$ 803.2	$ 844.8
Taiwan	239.8	235.2	66.4
Japan	234.6	358.6	426.5
Other	64.9	74.9	25.3
South Korea	63.5	67.5	123.8
United States	24.6	90.9	231.4
	$ 1,472.2	$ 1,630.3	$ 1,718.2

Net revenue from external customers for each group of similar products for fiscal 2019, 2018, and 2017 consisted of the following (in millions):

	2019	2018	2017
Mobile product applications	$ 900.1	$ 1,021.0	$ 1,406.0
PC product applications	258.9	257.8	229.2
IoT product applications	313.2	351.5	83.0
	$ 1,472.2	$ 1,630.3	$ 1,718.2

Long-lived assets within geographic areas as of the end of fiscal 2019 and 2018 consisted of the following (in millions):

	2019	2018
United States	$ 149.8	$ 193.3
Asia/Pacific	257.0	273.8
Europe	213.8	242.7
	$ 620.6	$ 709.8

Our goodwill of $372.8 million has been allocated to two reporting units which include IoT and Mobile/PC.

Major customers' revenue as a percentage of total net revenue for fiscal 2019, 2018, and 2017 were as follows:

	2019	2018	2017
Customer A	15%	15%	24%
Customer B	14%	*	10%
Customer C	10%	*	*
Customer D	*	12%	*
Customer E	*	*	19%

* Less than 10%

13. Restructuring Activities

In August 2018, we committed to and initiated a restructuring of our mobile fingerprint optical business. The costs for this restructuring activity primarily related to severance costs for a reduction in headcount and related costs. These activities are complete as of June 30, 2019. In June 2019, we committed to and initiated a restructuring action intended to reduce our operating cost structure further. The costs for this restructuring action primarily related to severance costs for a reduction in headcount. Restructuring costs related to these fiscal 2019 restructuring activities were recorded to the restructuring costs line item within our consolidated statements of operations. We expect to complete activities relating to the June 2019 restructuring action in the first half of fiscal 2020.

The restructuring liability activities during fiscal 2019 for restructurings initiated in fiscal 2019 were as follows (in millions):

	Employee Severance and Benefits
Accruals	$ 17.7
Cash payments	(12.5)
Balance as of June 30, 2019	$ 5.2

In November 2017, we committed to and initiated a restructuring action intended to streamline and reduce our operating cost structure and capitalize on acquisition synergies. The costs relating to this restructuring primarily related to severance costs for a reduction in headcount, facility consolidation and related costs. In April 2018, we committed to and initiated a restructuring to close a research and development facility. The costs relating to this restructuring include employee severance and related benefits and facility closure charges. Restructuring costs related to both the November 2017 and April 2018 restructuring activities were recorded to the restructuring costs line item within our consolidated statements of operations and were complete as of June 30, 2018.

The restructuring liability activities during fiscal years 2018 and 2019 for restructurings initiated in fiscal 2018 were as follows (in millions):

	Employee Severance and Benefits	Facility Consolidation and Related Charges	Total
Accruals	$ 11.0	$ 1.0	$ 12.0
Cash payments	(8.8)	(0.2)	(9.0)
Non-cash settlements	—	(0.7)	(0.7)
Balance as of June 30, 2018	2.2	0.1	2.3
Additional accruals	$ 0.2	—	$ 0.2
Cash payments	(2.4)	(0.1)	(2.5)
Balance as of June 30, 2019	$ —	$ —	$ —

In June 2016, our management committed to and initiated plans to restructure and further improve efficiencies in our operational activities to align the Company’s cost structure consistent with its revenue levels. Restructuring costs related to the June 2016 restructuring activities were recorded to the restructuring costs line item within our consolidated statements of income. These costs primarily related to severance costs for a reduction in headcount and facility consolidation and related costs. These restructuring charges were complete as of June 30, 2017.

The restructuring liability activities during fiscal years 2018, 2017, and 2016 for restructurings initiated in fiscal 2016 were as follows (millions):

	Employee Severance and Benefits	Facility Consolidation and Related Charges	Total
Balance as of June 30, 2015	$ —	$ —	$ —
Accruals	6.7		6.7
Balance as of June 30, 2016	6.7	—	6.7
Additional accruals	5.0	2.3	7.3
Cash payments	(11.7)	(0.9)	(12.6)
Non-cash settlements	—	(0.8)	(0.8)
Balance as of June 30, 2017	—	0.6	0.6
Adjustments	—	(0.2)	(0.2)
Cash payments	—	(0.4)	(0.4)
Balance as of June 30, 2018	$ —	$ —	$ —

EXHIBIT 4.4

DESCRIPTION OF REGISTRANT'S SECURITIES

The following brief description of the capital stock of Synaptics Incorporated ("us", "our", "we", or the "Company") is a summary. This summary is not complete and is subject to and qualified in its entirety by reference to the complete text of our Certificate of Incorporation, as amended ("Certificate of Incorporation"), and our Third Amended and Restated Bylaws ("Bylaws") previously filed with the U.S. Securities and Exchange Commission and incorporated by reference as an exhibit to this Annual Report on Form 10-K of which this Exhibit 4.4 forms a part. We encourage you to read our Certificate of Incorporation and our Bylaws carefully.

General

The Company's Certificate of Incorporation provide that it may issue 120,000,000 shares of common stock, par value $0.001 per share, and 10,000,000 shares of preferred stock, par value $0.001 per share.

Common Stock

Voting and Other Rights

Each outstanding share of our common stock is entitled to one vote per share of record on all matters submitted to a vote of stockholders and to vote together as a single class for the election of directors and in respect of other corporate matters. At a meeting of stockholders at which a quorum is present, a majority of the votes cast decides all questions, unless the matter is one upon which a different vote is required by express provision of law or our Certificate of Incorporation or Bylaws. Our Company has a staggered Board of Directors divided into three classes, meaning approximately one-third of the members of the Board of Directors are elected as a class for a three-year term at each annual stockholder meeting. Directors of each class standing for election will be elected by a majority of the votes of the shares present at a meeting. Holders of shares of common stock do not have cumulative voting rights with respect to the election of directors or any other matter.

Dividends

Subject to preferences that may be applicable to any outstanding preferred stock, holders of our common stock are entitled to receive such dividends as may be declared by the Board of Directors out of funds legally available therefor. We have not paid any cash dividends on our common stock. The right of our Board of Directors to declare dividends, however, is subject to any rights of the holders of other classes of our capital stock, any indebtedness outstanding from time to time, and the availability of sufficient funds under General Corporation Law of the State of Delaware to pay dividends.

Preemptive Rights

The holders of our common stock do not have preemptive rights to purchase or subscribe to any of our capital stock or other securities.

Redemption

The shares of our common stock are not subject to redemption by operation of a sinking fund or otherwise.

Liquidation Rights

In the event of our liquidation, dissolution, or winding up, holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities and the liquidation preference of any outstanding preferred stock.

Options and Other Stock-Based Rights

From time to time, we have issued and expect to continue to issue stock-based rights to directors, officers, and other employees of our Company.

Preferred Stock

The Board of Directors has the authority, without further action by stockholders, to issue preferred stock from time to time in one or more series. The Board of Directors has the authority to determine the terms of each series of preferred stock, within the limits of the Certificate of Incorporation and the General Corporation Law of the State of Delaware, including the number of shares in a series, dividend rights, liquidation rights, terms of redemption, conversion rights and voting rights. The rights, preferences and privileges of holders of common stock are subject to the rights of the holders of any shares of preferred stock.

Anti-takeover Effects of Certain Provisions of the Certificate of Incorporation and Bylaws

The provisions of the Company's Certificate of Incorporation and Bylaws summarized below may have an anti-takeover effect and may delay, defer or prevent a tender offer or takeover attempt.

Voting Thresholds

The Company's Certificate of Incorporation provide that any amendment of provisions of the Certificate of Incorporation concerning the 66-2/3% voting provisions, the number of directors constituting the Board of Directors, and the removal of directors, also requires the approval of the holders of 66-2/3% of the outstanding common stock, voting as a single class. These provisions with respect to super-majority voting requirements may make it more difficult for any person interested in acquiring the Company to effect a merger or other business combination with the Company. Any shareholder or group of shareholders owning more than 33-1/3% of the common stock will have effective veto power over certain proposed acquisitions of the Company. Such provisions could result in the holders of a majority of the outstanding voting common stock being unable to effect requisite shareholder approval, even though the terms of such combination might be considered favorable.

Authorized but Unissued Common Stock and Preferred Stock

The Company's shares of authorized and unissued common stock will be available for future issuance without additional stockholder approval, provided that the Company shall at all times keep available enough shares of common stock as would be needed to convert all outstanding shares of preferred stock on a share-for-share basis. The existence of authorized but unissued shares of common stock may enable our Board of Directors to render more difficult or to discourage an attempt to obtain control of the Company by means of a merger, tender offer or otherwise. Additionally, our Certificate of Incorporation also authorizes our Board of Directors, without stockholder approval, to issue one or more series of preferred stock, which could have voting and conversion rights that adversely affect or dilute the voting power of the holders of our common stock.

No Cumulative Voting

The Certificate of Incorporation do not grant holders of the common stock the right to vote cumulatively, and any attempt to change or amend this with respect to the election of directors requires a supermajority vote of 66-2/3% of the outstanding common stock.

Notice Provisions Relating to Stockholder Proposals and Nominees

The Company's Bylaws contain provisions requiring stockholders to give advance written notice to the Company of a proposal or director nomination in order to have the proposal or the nominee considered at an annual meeting of stockholders. The notice for a shareholder proposal must be received not less than 90 days prior or more than 120 days prior to the meeting.

Listing

Our common stock is listed on The Nasdaq Global Select Market under the symbol "SYNA."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, 6201 15th Avenue, Brooklyn, New York, NY 11219.

EXHIBIT 10.26

SYNAPTICS INCORPORATED
CHANGE OF CONTROL SEVERANCE POLICY FOR PRINCIPAL EXECUTIVE OFFICERS

Effective June 28, 2019

1. **Purpose**. The purpose of this Synaptics Incorporated Change of Control Severance Policy for Principal Executive Officers (the "CoC Severance Policy") is to provide a fair framework in the event of the termination of employment of one or more key executive officers (an "Executive") of Synaptics Incorporated or any subsidiary of Synaptics Incorporated (collectively, the "Company").

2. **Covered Principal Executive Officers**. This CoC Severance Policy shall be applicable to each Executive to the extent such Executive has been designated and notified in writing by the Company upon nomination by the Chief Executive Officer (the "CEO") and approval of the Board of Directors (the "Board") or the Compensation Committee of the Board of Directors (the "Committee").

3. **Definitions**.

(a) **Change of Control**. For the purpose of this CoC Severance Policy, a "Change of Control" shall mean any of the following:

(i) **Change of Control**. A change in control of a nature that would be required to be reported in response to Item 6(e) of Schedule 14A of Regulation 14A promulgated under the Securities Exchange Act of 1934, as amended, or if Item 6(e) is no longer in effect, any regulations issued by the Securities and Exchange Commission pursuant to the Securities Exchange Act of 1934, as amended, which serve similar purposes;

(ii) **Tender Offer**. A tender offer or exchange offer is made whereby the effect of such offer is to take over and control the Company, and such offer is consummated for the equity securities of the Company representing 50% or more of the combined voting power of the Company's then outstanding voting securities;

(iii) **Merger or Consolidation**. The stockholders of the Company shall approve a merger, consolidation, recapitalization, or reorganization of the Company, a reverse stock split of outstanding voting securities, or consummation of any such transaction if stockholder approval is not obtained, other than any such transaction that would result in at least 50% of the total voting power represented by the voting securities of the surviving entity outstanding immediately after such transaction being beneficially owned by the holders of outstanding voting securities of the Company immediately prior to the transaction, with the voting power of each such continuing holder relative to other such continuing holders not substantially altered in the transaction;

(iv) **Liquidation or Sale of Assets**. The stockholders of the Company shall approve a plan of complete liquidation of the Company or an agreement for the sale or disposition by the Company of all or a substantial portion of the Company's assets to another person, which is not a wholly owned subsidiary of the Company (i.e., 50% or more of the total assets of the Company); or

(v) **Stockholdings**. Any "person" (as that term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended) is or becomes the "beneficial owner" (as defined in Rule 13d-3 under that act), directly or indirectly of more than 50% of the total voting power represented by the Company's then outstanding voting securities.

(b) **Change of Control Period.** The “Change of Control Period” shall mean the period commencing on the date that is three (3) months prior to the Effective Date and ending on the eighteen (18) month anniversary of the Effective Date.

(c) **Effective Date**. The “Effective Date” shall be the closing date of the transaction on which a Change of Control occurs.

(d) **Good Cause**. “Good Cause,” as it applies to the determination of the Company to terminate the employment of an Executive, shall mean any one or more of the following: (i) Executive’s willful, material, and irreparable breach of Executive’s duties to the Company; (ii) Executive’s gross negligence in the performance or intentional nonperformance (continuing for 30 days after receipt of written notice of need to cure) of any of Executive’s material duties and responsibilities; (iii) Executive’s willful dishonesty, fraud, or misconduct with respect to the business or affairs of the Company, which materially and adversely affects the operations or reputation of the Company; (iv) Executive’s indictment for, conviction of, or guilty plea to a felony crime involving dishonesty or moral turpitude whether or not relating to the Company; or (v) a confirmed positive illegal drug test result.

(e) **Good Reason**. “Good Reason,” as it applies to the determination by an Executive to terminate the Executive’s employment shall mean the occurrence of any of the following events without Executive’s prior written approval: (i) Executive is demoted by means of a material reduction in authority, responsibilities, or duties or Executive is required to render Executive’s primary employment services from a Company location that is more than 50 miles from the Company location from which Executive provides employment services to the Company at the time Executive becomes an Executive other than as has been previously contemplated by the Company and Executive; (ii) Executive’s annual base salary for a fiscal year is reduced to a level that is less than 90% of the base salary paid to Executive during the prior fiscal year; or (iii) Executive’s Targeted Bonus is reduced to a level that is less than ninety percent (90%) of the Targeted Bonus for Executive during the prior fiscal year.

(f) **Insurance Coverage**. “Insurance Coverage” shall mean, for Executive and/or Executive’s family who are qualified to participate, as the case may be, all benefits under welfare benefit plans, practices, policies, and programs provided by the Company and its subsidiaries (including, without limitation, medical, prescription, dental, disability, salary continuance, employee life, group life, accidental death, and travel accident insurance plans and programs), at least as favorable as the most favorable of such plans, practices, policies, and programs in effect at any time during the one hundred eighty (180) day period immediately preceding the Effective Date or, if more favorable to Executive and/or Executive’s family, as in effect at any time thereafter with respect to other key executives.

(g) **Targeted Bonus**. “Targeted Bonus” shall mean, for each fiscal year of the Company, either (i) a bonus program in which Executive shall be entitled to participate, which provides Executive with a reasonable opportunity, based on the past compensation practices of the Company and Executive’s then base salary, to maintain or increase Executive’s total compensation compared to the previous fiscal year or (ii) a targeted bonus based on such factors as the Board may determine.

4. **Termination; Rights on Termination.**

(a) **Termination**. Executive’s employment under this CoC Severance Policy may be terminated in any one of the followings ways:

(i) **Death of Executive**. The employment of Executive shall terminate during the Change of Control Period immediately upon Executive’s death. In the event Executive’s employment is terminated as a result of Executive’s death, Executive shall have no right under this CoC Severance Policy to any severance compensation.

(ii) **Disability of Executive**. If, during the Change of Control Period, as a result of incapacity due to physical or mental illness or injury, Executive shall have been absent from Executive's full-time duties hereunder for six (6) consecutive months, then thirty (30) days after giving written notice to Executive (which notice may occur before or after the end of such six (6) month period, but which shall not be effective earlier than the last day of such six (6) month period), the Company may terminate Executive's employment provided Executive is unable to resume Executive's full-time duties at the conclusion of such notice period. Also, Executive may terminate Executive's employment if Executive's health should become impaired to an extent that makes the continued performance of Executive's duties hereunder hazardous to Executive's physical or mental health or Executive's life, provided that Executive shall have furnished the Company with a written statement from a qualified doctor to such effect and provided, further, that, at the Company's request made within ten (10) days of the date of such written statement, Executive shall submit to an examination by a doctor selected by the Company who is reasonably acceptable to Executive or Executive's doctor and such doctor shall have concurred in the conclusion of Executive's doctor. In the event Executive's employment is terminated as a result of Executive's disability, Executive shall have no right under this CoC Severance Policy to any severance compensation.

(iii) **Termination by the Company for Good Cause**. The Company may terminate Executive's employment during the Change of Control Period upon ten (10) days prior written notice to Executive for Good Cause. In the event of a termination by the Company for Good Cause, Executive shall have no right under this CoC Severance Policy to any severance compensation.

(iv) **Termination by the Company Without Good Cause or by Executive with Good Reason**. The Company may terminate Executive's employment without Good Cause during the Change of Control Period upon the approval of a majority of the members of the Board, excluding Executive if Executive is a member of the Board. Executive may terminate Executive's employment with Good Reason during the Change of Control Period upon ten (10) days prior written notice to the Company. For purposes of this paragraph 4(a)(iv), any good faith determination of "Good Reason" made by Executive shall be conclusive. Should the Company terminate Executive's employment without Good Cause during the Change of Control Period or should Executive terminate Executive's employment with Good Reason during the Change of Control Period, the Company shall, for a period of eighteen (18) months after termination, pay to Executive on each regular payroll date as in effect on termination a pro-rata amount equal to the sum of (A) two hundred percent (200%) of Executive's Base Salary in the case of the CEO and one hundred fifty percent (150%) in the case of any other Executive and (B) two hundred percent (200%) of Executive's Targeted Bonus in the case of the CEO and one hundred fifty percent (150%) in the case of any other Executive, in each case for the fiscal year during which termination occurs. Further, if during the Change of Control Period the Company terminates Executive's employment without Good Cause or Executive terminates Executive's employment with Good Reason, (1) the Company shall, for a period of eighteen (18) months after termination, continue the Insurance Coverage if and to the extent required by COBRA by way of making the family medical insurance premium payments contemplated by COBRA; (2) the Company shall, for a period of eighteen (18) months after termination, maintain life insurance coverage comparable to that provided immediately prior to termination, if any, with the beneficiary designated by Executive; and (3) Executive shall be entitled to receive all other accrued but unpaid benefits relating to vacations, Insurance Coverage, and other executive perquisites through Executive's last day of employment.

(v) **Resignation by Executive Without Good Reason**. Executive may without cause and without Good Reason terminate Executive's own employment during the Change of Control Period, effective thirty (30) days after written notice is provided to the Company or such earlier time as any such resignation may be accepted by the Company. If Executive resigns or otherwise terminates Executive's employment without Good Reason, Executive shall receive no severance compensation under this CoC Severance Policy.

(vi) **Effect on Equity Incentives**. In the event Executive is terminated during the Change of Control Period by the Company without Good Cause or by Executive with Good Reason, all unvested equity incentives (which shall not include "market stock units" that vest based on the achievement of a specified level of total stockholder return compared with a predetermined stock index over a performance period) held by Executive shall vest as of the day immediately preceding any such termination of Executive's employment, provided that any equity incentives granted prior to the date hereof that included specific provisions regarding accelerated vesting shall be unchanged. In addition, any vested stock options (including those vested as a result of this paragraph 4(a)(vi)) held by Executive shall be exercisable for ninety (90) days after the termination of Executive's employment, but not beyond their original term.

5. **Certain Reduction of Payment by the Company.**

(a) **Potential Section 280G Reductions**. Notwithstanding anything in this CoC Severance Policy to the contrary, in the event that it shall be determined that any payment, distribution, or other action by the Company to or for the benefit of Executive (whether paid or payable or distributed or distributable pursuant to the terms of this CoC Severance Policy or otherwise (a "Payment")) would result in an "excess parachute payment" within the meaning of Section 280G(b)(i) of the Internal Revenue Code of 1986, as amended (the "Code"), and the value determined in accordance with Section 280G(d)(4) of the Code of the Payments, net of all taxes imposed on Executive (the "Net After-Tax Amount"), that Executive would receive would be increased if the Payments were reduced, then the Payments shall be reduced by an amount (the "Reduction Amount") so that the Net After-Tax Amount after such reduction is greatest. For purposes of determining the Net After-Tax Amount, Executive shall be deemed to (i) pay federal income taxes at the highest marginal rates of federal income taxation for the calendar year in which the Payment is to be made, and (ii) pay applicable state and local income taxes at the highest marginal rate of taxation for the calendar year in which the Payment is to be made, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes.

(b) **Determinations**. Subject to the provisions of this paragraph 5(b), all determinations required to be made under this paragraph 5, including the Net After-Tax Amount, the Reduction Amount, and the Payment that is to be reduced pursuant to paragraph 5(a), and the assumptions to be utilized in arriving at such determinations, shall be made by the Company's independent registered public accounting firm (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and Executive within fifteen (15) business days of the receipt of notice from Executive that there has been a Payment, or such earlier time as is requested by the Company. The Accounting Firm's decision as to which Payments are to be reduced shall be made (i) only from Payments that the Accounting Firm determines reasonably may be characterized as "parachute payments" under Section 280G of the Code; (ii) first, only from Payments that are required to be made in cash; (iii) only with respect to any amounts that are not payable pursuant to a "nonqualified deferred compensation plan" subject to Section 409A of the Code, until those payments have been reduced to zero; and (iv) in reverse chronological order, to the extent that any Payments subject to reduction are made over time (e.g., in installments). In no event, however, shall any Payments be reduced if and to the extent such reduction would cause a violation of Section 409A of the Code or other applicable law. All fees and expenses of the Accounting Firm shall be borne solely by the Company. Any determination by the Accounting Firm shall be binding upon the Company and Executive.

6. **Release of Claims**. The Company's obligations under Section 4 are contingent upon Executive's executing (and not revoking during any applicable revocation period) a valid, enforceable, full and unconditional release of all claims Executive may have against the Company (whether known or unknown) as of the date of termination in such form as provided by the Company no later than sixty (60) days after the date of termination. If the foregoing release is executed and delivered and no longer subject to revocation within 60 days after the date of termination, then the following shall apply:

(a) To the extent any payments due to Executive under Section 4 are not "deferred compensation" for purposes of Section 409A of the Internal Revenue Code of 1986, as amended, then such payments shall commence upon the first scheduled payment date immediately after the date the release is executed and no longer subject to revocation (the "Release Effective Date"). The first such cash payment shall include payment of all amounts that otherwise would have been due prior to the Release Effective Date under the terms of this CoC Severance Policy had such payments commenced after the date of Employment Termination, and any payments to be made thereafter shall continue as provided herein. The delayed payments shall in any event expire at the time such payments would have expired had such payments commenced after the date of termination.

(b) To the extent any payments due to Executive under Section 4 above are "deferred compensation" for purposes of Section 409A, then such payments shall commence upon the sixtieth (60^{th}) day following the date of termination. The first such cash payment shall include payment of all amounts that otherwise would have been due prior thereto under the terms of this CoC Severance Policy had such payments commenced after the date of termination, and any payments to be made thereafter shall continue as provided herein. The delayed payments shall in any event expire at the time such payments would have expired had such payments commenced immediately following the date of termination.

7. **Resignation from Directorships**. The Company's obligations under Section 4 are further contingent upon Executive's written voluntary resignation, concurrent with or prior to the execution and delivery to the Company of the release of claims referenced in Section 6 above, from all directorships held by Executive at the Company and its subsidiaries and affiliates.

8. **Section 409A**. Notwithstanding any provisions in this CoC Severance Policy to the contrary, if at the time of the termination the Executive is a "specified employee" as defined in Section 409A and the deferral of the commencement of any payments or benefits otherwise payable as a result of such termination is necessary to avoid the additional tax under Section 409A, the Company will defer the payment or commencement of the payment of any such payments or benefits (without any reduction in such payments or benefits ultimately paid or provided to Executive) until the date that is six months following the termination. Any monthly payment amounts deferred will be accumulated and paid to Executive (without interest) six months after the date of termination in a lump sum, and the balance of payments due to Executive will be paid as otherwise provided in this CoC Severance Policy. Each monthly payment described in this CoC Severance Policy is designated as a "separate payment" for purposes of Section 409A and, subject to the six month delay, if applicable, and Section 5 the first monthly payment shall commence on the payroll date as in effect on termination following the termination. For purposes of this CoC Severance Policy, a termination of employment means a separation from service as defined in Section 409A. No reimbursement payable to Executive pursuant to any provisions of this CoC Severance Policy or pursuant to any plan or arrangement of the Company shall be paid later than the last day of the calendar year following the calendar year in which the related expense was incurred, and no such reimbursement during any calendar year shall affect the amounts eligible for reimbursement in any other calendar year, except, in each case, to the extent that the right to reimbursement does not provide for a "deferral of compensation" within the meaning of Section 409A. This CoC Severance Policy will be interpreted, administered and operated in accordance with Section 409A, although nothing herein will be construed as an entitlement to or guarantee of any particular tax treatment to Executive.

9. **Term**. This CoC Severance Policy will be effective as of June 28, 2019. At first meeting of the Board or Committee in every third fiscal year following the date of effectiveness of this CoC Severance Policy, the Board or the Committee, as the case may be, will review the CoC Severance Policy and resolve to continue with, modify, or terminate the CoC Severance Policy. If the Board or the Committee fails to take action regarding the CoC Severance Policy, the CoC Severance Policy will remain in effect in accordance with its then-current terms until such time as the Board or Committee takes action.

EXHIBIT 10.27

SYNAPTICS INCORPORATED
SEVERANCE POLICY FOR PRINCIPAL EXECUTIVE OFFICERS

Effective June 28, 2019

1. **Purpose**. The purpose of this Synaptics Incorporated Severance Policy (the "Severance Policy") is to provide a fair framework in the event of the termination of employment of one or more key executive officers (each an "Executive") of Synaptics Incorporated or any subsidiary of Synaptics Incorporated (collectively, the "Company").

2. **Covered Principal Executive Officers**. This Severance Policy shall be applicable to each Executive to the extent such Executive has been designated and notified in writing by the Company upon nomination by the Chief Executive Officer (the "CEO") and approval of the Board of Directors or the Compensation Committee of the Board of Directors (a "Covered Executive").

3. **Definitions**.

(a) **Change of Control**. For the purpose of this Severance Policy, a "Change of Control" shall mean any of the following:

(i) **Change of Control**. A change in control of a nature that would be required to be reported in response to Item 6(e) of Schedule 14A of Regulation 14A promulgated under the Securities Exchange Act of 1934, as amended, or if Item 6(e) is no longer in effect, any regulations issued by the Securities and Exchange Commission pursuant to the Securities Exchange Act of 1934, as amended, which serve similar purposes;

(ii) **Tender Offer**. A tender offer or exchange offer is made whereby the effect of such offer is to take over and control the Company, and such offer is consummated for the equity securities of the Company representing 50% or more of the combined voting power of the Company's then outstanding voting securities;

(iv) **Merger or Consolidation**. The stockholders of the Company shall approve a merger, consolidation, recapitalization, or reorganization of the Company, a reverse stock split of outstanding voting securities, or consummation of any such transaction if stockholder approval is not obtained, other than any such transaction that would result in at least 50% of the total voting power represented by the voting securities of the surviving entity outstanding immediately after such transaction being beneficially owned by the holders of outstanding voting securities of the Company immediately prior to the transaction, with the voting power of each such continuing holder relative to other such continuing holders not substantially altered in the transaction;

(v) **Liquidation or Sale of Assets**. The stockholders of the Company shall approve a plan of complete liquidation of the Company or an agreement for the sale or disposition by the Company of all or a substantial portion of the Company's assets to another person, which is not a wholly owned subsidiary of the Company (i.e., 50% or more of the total assets of the Company); or

(vi) **Stockholdings**. Any "person" (as that term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended) is or becomes the "beneficial owner" (as defined in Rule 13d-3 under that act), directly or indirectly of more than 50% of the total voting power represented by the Company's then outstanding voting securities.

(b) **Effective Date**. The "Effective Date" shall be the closing date of the transaction on which a Change of Control occurs.

(c) **Good Cause**. "Good Cause," as it applies to the determination of the Company to terminate the employment of a Covered Executive, shall mean any one or more of the following: (i) Executive's willful, material, and irreparable breach of Executive's duties to the Company; (ii) Executive's gross negligence in the performance or intentional nonperformance (continuing for 30 days after receipt of written notice of need to cure) of any of Executive's material duties and responsibilities; (iii) Executive's willful dishonesty, fraud, or misconduct with respect to the business or affairs of the Company, which materially and adversely affects the operations or reputation of the Company; (iv) Executive's indictment for, conviction of, or guilty plea to a felony crime involving dishonesty or moral turpitude whether or not relating to the Company; or (v) a confirmed positive illegal drug test result.

(d) **Good Reason**. "Good Reason," as it applies to the determination by a Covered Executive to terminate the Executive's employment shall mean the occurrence of any of the following events without Executive's prior written approval: (i) Executive is demoted by means of a material reduction in authority, responsibilities, or duties or Executive is required to render Executive's primary employment services from a Company location that is more than 50 miles from the Company location from which Executive provides employment services to the Company at the time Executive becomes a Covered Executive other than as has been previously contemplated by the Company and Executive; (ii) Executive's annual base salary for a fiscal year is reduced to a level that is less than 90% of the base salary paid to Executive during the prior fiscal year; or (iii) Executive's Targeted Bonus is reduced to a level that is less than 90% of the Targeted Bonus for Executive during the prior fiscal year.

(e) **Employment Termination**. "Employment Termination" shall mean a Covered Executive no longer being an employee of the Company as a result of a termination with Good Reason or without Good Cause.

4. **Result of Termination by the Company without Good Cause or by Executive with Good Reason**. The following provisions shall apply should the Company terminate a Covered Executive's employment without Good Cause or should a Covered Executive terminate Executive's employment with Good Reason:

(a) **Salary and Bonus**. The Company shall, for a period of one year following the Employment Termination in the case of the CEO and six months following the Employment Termination in the case of any other Covered Executive, pay to Executive on each regular payroll date as in effect on termination a pro rata amount equal to the sum of (i) 100% of Executive's base salary in the case of the CEO and 50% of Executive's base salary in the case of any other Covered Executive, and (ii) 100% of Executive's Targeted Bonus in the case of the CEO, the greater of 50% of Executive's Targeted Bonus or a pro rata amount of Executive's Targeted Bonus in the case of the Company's Chief Financial Officer, and a pro rata amount of Executive's Targeted Bonus in the case of any other Covered Executive, in each case for the fiscal year during which termination occurs.

(b) **Welfare Benefit Plans**. The Company will continue, for one year following the Employment Termination in the case of the CEO and for six months following Employment Termination in the case of each other Covered Executive, coverage for Executive and Executive's dependent family members under the Company's medical plan for the applicable continuation period described in this sentence by paying the COBRA premium for such coverage, but such coverage shall not extend beyond the period during which Executive and his dependents are eligible for COBRA.

(c) **Equity Incentives**. All unvested equity incentives held by Executive as of Employment Termination shall cease to vest on the date of Employment Termination. Vested options will be exercisable for 90 days after the date of Employment Termination, but not beyond their original term.

(d) **Accrued Benefits**. Executive shall be entitled to receive all other accrued but unpaid benefits relating to vacations and other executive perquisites through the date of Employment Termination, except that Executive shall not continue to accrue vacation benefits or other executive perquisites after the date of Employment Termination.

5. **Release of Claims**. The Company's obligations under Section 4 are contingent upon a Covered Executive's executing (and not revoking during any applicable revocation period) a valid, enforceable, full and unconditional release of all claims Executive may have against the Company (whether known or unknown) as of the date of Employment Termination in such form as provided by the Company no later than 60 days after the date of Employment Termination. If the foregoing release is executed and delivered and no longer subject to revocation within 60 days after the date of Employment Termination, then the following shall apply:

(a) To the extent any payments due to Executive under Section 4 are not "deferred compensation" for purposes of Section 409A of the Internal Revenue Code of 1986, as amended, then such payments shall commence upon the first scheduled payment date immediately after the date the release is executed and no longer subject to revocation (the "Release Effective Date"). The first such cash payment shall include payment of all amounts that otherwise would have been due prior to the Release Effective Date under the terms of this Severance Policy had such payments commenced after the date of Employment Termination, and any payments to be made thereafter shall continue as provided herein. The delayed payments shall in any event expire at the time such payments would have expired had such payments commenced after the date of Employment Termination.

(b) To the extent any payments due to Executive under Section 4 above are "deferred compensation" for purposes of Section 409A, then such payments shall commence upon the 60th day following the date of Employment Termination. The first such cash payment shall include payment of all amounts that otherwise would have been due prior thereto under the terms of this Severance Policy had such payments commenced after the date of Employment Termination, and any payments to be made thereafter shall continue as provided herein. The delayed payments shall in any event expire at the time such payments would have expired had such payments commenced immediately following the date of Employment Termination.

6. **Resignation from Directorships**. The Company's obligations under Section 4 are further contingent upon Executive's written voluntary resignation, concurrent with or prior to the execution and delivery of the release of claims referenced in Section 5 above, from all directorships held by Executive at the Company and its subsidiaries and affiliates.

7. **Section 409A**. Notwithstanding any provisions in this Severance Policy to the contrary, if at the time of the Employment Termination the Covered Executive is a "specified employee" as defined in Section 409A and the deferral of the commencement of any payments or benefits otherwise payable as a result of such Employment Termination is necessary to avoid the additional tax under Section 409A, the Company will defer the payment or commencement of the payment of any such payments or benefits (without any reduction in such payments or benefits ultimately paid or provided to Executive) until the date that is six months following the Employment Termination. Any monthly payment amounts deferred will be accumulated and paid to Executive (without interest) six months after the date of Employment Termination in a lump sum, and the balance of payments due to Executive will be paid as otherwise provided in this Severance Policy. Each monthly payment described in this Severance Policy is designated as a "separate payment" for purposes of Section 409A and, subject to the six month delay, if applicable, and Section 5 the first monthly payment shall commence on the payroll date as in effect on termination following the termination. For purposes of this Severance Policy, a termination of employment means a separation from service as defined in Section 409A. No reimbursement payable to Executive pursuant to any provisions of this Severance Policy or pursuant to any plan or arrangement of the Company shall be paid later than the last day of the calendar year following the calendar year in which the related expense was incurred, and no such reimbursement during any calendar year shall affect the amounts eligible for reimbursement in any other calendar year, except, in each case, to the extent that the right to reimbursement does not provide for a "deferral of compensation" within the meaning of Section 409A. This Severance Policy will be interpreted, administered and operated in accordance with Section 409A, although nothing herein will be construed as an entitlement to or guarantee of any particular tax treatment to Executive.

8. **Term**. This Severance Policy shall terminate on the Effective Date of a Change of Control.

<u>SEPARATION AGREEMENT AND RELEASE</u>

This Separation Agreement and Release (“Agreement”) is made by and between Huibert Verhoeven (“Employee”) and Synaptics Incorporated (the “Company”) (jointly referred to as the “Parties”):

WHEREAS, Employee was employed by the Company pursuant to an employment arrangement and began employment with the Company on August 25, 2014 (the “Service Arrangement”), and Employee’s employment terminated on April 22, 2019 (the “Termination Date”);

WHEREAS, the Parties wish to resolve any and all disputes, claims, complaints, grievances, charges, actions, petitions, and demands that the Employee may have against the Company, including, but not limited to, any and all claims arising or in any way related to Employee’s employment with or separation from the Company; and

WHEREAS, this Agreement will become effective on the eighth day after it is signed by Employee (such date being the “Effective Date”), provided that Employee has not revoked this Agreement by written notice to the General Counsel of the Company prior to the Effective Date.

NOW THEREFORE, in consideration of the promises made herein, the Parties hereby agree as follows:

1. <u>Termination of Service Arrangement</u>. Employee’s employment with the Company ceases as of the Termination Date. Employee agrees to resign as a director or officer of any Company subsidiaries or affiliates upon the request of the Company.

2. <u>Consideration</u>. As consideration for the release of claims and all other covenants made herein, the Parties agree that the Employee shall receive aggregate consideration of (i) $323,750, less applicable withholdings, payable in 12 equal installments on each regular semi-monthly payroll date over the next six calendar months following the Termination Date; and (ii) direct payment or reimbursement (grossed up for tax purposes) of COBRA premiums for Employee and Employee’s dependent family members under the Company’s medical plan for a period of six calendar months following the Termination Date, provided that such payments or reimbursements shall not extend beyond the period during which Employee and Employee’s dependents are eligible for COBRA.

3. <u>Benefits</u>. Employee’s health insurance benefits (including medical, dental and vision) cease at the end of the calendar month in which the Termination Date occurs, subject to Employee’s right to continue Employee’s health insurance under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended. Employee’s participation in, and accrual of, all other benefits and incidents of employment, including but not limited to incentives, vacation time, and paid time off, cease on the Termination Date.

4. <u>Reserved</u>.

5. <u>Equity Incentives</u>. Pursuant to the terms of the Synaptics Incorporated Amended and Restated 2010 Incentive Compensation Plan and the equity incentive agreements effective by and between Employee and the Company, under which the Company granted to Employee deferred stock units (“DSUs”), market stock units (“MSUs”), performance stock units (“PSUs”) and options to purchase common units of the Company (“Options,” and collectively, the “Equity Incentives”), as of the Termination Date: (i) Employee’s MSUs, DSUs, PSUs and Options cease vesting; (ii) Employee has and shall have no right to exercise any unvested portion of the Options or receive any unvested portion of the DSUs; (iii) Employee does not have and shall not have any rights under the unvested portion of the Options or DSUs and does not have other any rights or entitlements to purchase units or

shares of the Company or any subsidiary or affiliate of the Company; and (iv) Employee's MSUs and PSUs cease vesting, are voided and Employee shall have no right to any compensation under the MSUs or PSUs. Employee has until July 21, 2019, to exercise any vested portion of Employee's Options or the Employee will lose all rights to such vested portion of the Options. The exercise price for the Options cannot be offset against any amounts payable to the Employee by the Company or any subsidiary or affiliate thereof.

6. Payment of Salary, Accrued Vacation and Expense Reimbursements. Except as provided in Section 2 above, Employee acknowledges and represents that the Company has paid all salary, wages, bonuses, annual incentives, accrued vacation and paid time off, commissions, expense reimbursements, severance and separation benefits, and any and all other benefits due to Employee as of the Termination Date. Employee acknowledges that Employee is not eligible for any pro rata portion of Employee's fiscal year 2019 or fiscal year 2020 target cash incentive. Employee represents and warrants that Employee never suffered an on-the-job or occupational injury or incurred any wage, overtime or leave claims while working at the Company.

7. Confidential Information.

(a) Employee acknowledges that Employee has signed a Proprietary Information and Invention Assignment Agreement dated as of August 25, 2014 (the "Confidential Information Agreement"). Employee reaffirms Employee's obligation to comply with the terms and conditions of the Confidential Information Agreement. Employee will hold in strictest confidence and will not disclose, use, lecture upon, or publish any of the Company's Proprietary Information. Employee hereby assigns to the Company any rights that Employee may have or acquire in Proprietary Information and recognizes that all Proprietary Information shall be the sole property of the Company and its assigns. For purposes of this Agreement, the term "Proprietary Information" shall mean any and all confidential and/or proprietary knowledge, data or information of the Company. By way of illustration but not limitation, "Proprietary Information" includes (i) trade secrets, inventions, mask works, ideas, processes, formulas, source and object codes, data, programs, other works of authorship, know-how, improvements, discoveries, developments, designs and techniques; (ii) information regarding plans for research, development, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers; and (iii) information regarding the skills and compensation of other employees of the Company

(b) Employee shall return all of the Company's property and Proprietary Information in Employee's possession to the Company as required by the terms of the Confidential Information Agreement. By signing this Agreement, Employee represents and declares under penalty of perjury under the laws of the State of California that Employee has returned all Company property and Proprietary Information in Employee's possession to the Company.

(c) Employee understands, in addition, that the Company has received and in the future may receive from third parties confidential or proprietary information ("Third Party Information") subject to a duty on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. Employee will hold Third Party Information in the strictest confidence and will not disclose to anyone other than Company personnel who need to know such information in connection with their work for the Company.

8. Release of Claims. Employee agrees that the foregoing consideration represents settlement in full of all outstanding obligations owed to Employee by the Company, any subsidiaries or affiliates thereof, and all officers, managers, members, supervisors, members of their board of directors, agents and employees thereof. Employee, on Employee's own behalf, and on behalf of Employee's respective heirs, family members, executors, agents, and assigns, hereby fully and forever releases the Company, its affiliates and subsidiaries, and all officers, members of their board of directors, employees, agents, investors, shareholders, members, administrators, affiliates, divisions, predecessor and successor corporations, and assigns of the Company or any subsidiary or affiliate thereof ("the Releasees"), from, and agrees not to sue concerning, any claim, duty, obligation or cause of action relating to any matters of any kind, whether presently known or unknown, suspected or unsuspected, that Employee may possess arising from any omissions, acts or facts that have occurred up until and including the Termination Date including, without limitation:

(a) any and all claims relating to or arising from Employee's employment relationship with the Company and the termination of that relationship;

(b) any and all claims relating to, or arising from, Employee's right to purchase, or actual purchase of, equity of the Company or any subsidiary or affiliate thereof, including, without limitation, any claims for fraud, misrepresentation, breach of fiduciary duty, breach of duty under applicable state corporate law, and securities fraud under any state or federal law;

(c) any and all claims under the law of any jurisdiction including, but not limited to, wrongful discharge of employment, constructive discharge from employment, termination in violation of public policy, discrimination, harassment, retaliation, breach of contract, both express and implied, breach of a covenant of good faith and fair dealing, both express and implied; promissory estoppel, negligent or intentional infliction of emotional distress, negligent or intentional misrepresentation, negligent or intentional interference with contract or prospective economic advantage, unfair business practices, defamation, libel, slander, negligence, personal injury, assault, battery, invasion of privacy, false imprisonment, and conversion;

(d) any and all claims for violation of any national, federal, state or municipal statute, including, but not limited to, Title VII of the Civil Rights Act of 1964, the Civil Rights Act of 1991, the Age Discrimination in Employment Act of 1967, the Americans with Disabilities Act of 1990, the Fair Labor Standards Act, the Employee Retirement Income Security Act of 1974, The Worker Adjustment and Retraining Notification Act, the Older Workers Benefit Protection Act; the Family and Medical Leave Act; the California Family Rights Act; the California Fair Employment and Housing Act, and the California Labor Code, including, but not limited to Labor Code sections 1400-1408;

(e) any and all claims for violation of the federal, or any state, constitution;

(f) any and all claims arising out of any other laws and regulations relating to employment or employment discrimination;

(g) any claim for any loss, cost, damage, or expense arising out of any dispute over the non-withholding or other tax treatment of any of the proceeds received by Employee as a result of this Agreement; and

(h) any and all claims for attorneys' fees and costs.

The Company and Employee agree that the release set forth in this Section shall be and remain in effect in all respects as a complete general release as to the matters released. This release does not extend to any obligations incurred under this Agreement nor to any claims that, by statute, may not be waived.

Furthermore, nothing in this Agreement is intended to, or shall, interfere with Employee's rights under federal, state, or municipal civil rights or employment discrimination laws, including, but not limited to, the statutes specified in Paragraph 8(d) above, or their state or local counterparts, to file or otherwise institute a charge of discrimination with a government agency or regulatory body, to testify or participate in such an agency or administrative hearing or proceeding, or to otherwise cooperate with a federal, state, or municipal government agency proceeding. However, Employee understands and agrees that Employee is waiving any right to personal monetary or other recovery as to such charges or participation, and Employee shall not be entitled to any relief, recovery, or damages in connection with such an agency or administrative complaint, charge or proceeding, regardless of who filed or initiated the complaint, charge, or proceeding.

Additionally, nothing in this Agreement is intended to, or shall, interfere with Employee's rights to cooperate, participate, or testify in an administrative, legislative, or judicial proceeding, or to receive and fully retain a monetary award from a government-administered whistleblower award program for providing information directly to a government agency. Nothing in this Agreement is intended to, or shall, interfere with the Company's obligation to indemnify Employee against any claims, damages, liabilities pursuant to the Indemnification Agreement, dated May 16, 2016, and executed by and between Employee and the Company, and in accordance with applicable state corporate law.

9. <u>Acknowledgement of Waiver of Claims Under ADEA</u>. Employee acknowledges that Employee is waiving and releasing any rights Employee may have under the Age Discrimination in Employment Act of 1967 ("ADEA") and that this waiver and release is knowing and voluntary. Employee and the Company agree that this waiver and release does not apply to any rights or claims that may arise under ADEA after the Effective Date of this Agreement. Employee acknowledges that the consideration given for this waiver and release Agreement is in addition to anything of value to which Employee was already entitled. Employee further acknowledges that Employee has been advised by this writing that:

(a) Employee should consult with an attorney <u>prior</u> to executing this Agreement;

(b) Employee has up to twenty-one (21) days within which to consider this Agreement;

(c) Employee has seven (7) days following Employee's execution of this Agreement to revoke the Agreement;

(d) this Agreement shall not be effective until the revocation period has expired; and

(e) nothing in this Agreement prevents or precludes Employee from challenging or seeking a determination in good faith of the validity of this waiver under the ADEA, nor does it impose any condition precedent, penalties or costs from doing so, unless specifically authorized by federal law.

10. <u>Civil Code Section 1542</u>. Employee represents that Employee is not aware of any claim by Employee other than the claims that are released by this Agreement. Employee acknowledges that Employee has had the opportunity to be advised by legal counsel and is familiar with the provisions of California Civil Code Section 1542, which provides as follows:

A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN EMPLOYEE'S FAVOR AT THE TIME OF EXECUTING THE RELEASE, AND THAT IF KNOWN BY EMPLOYEE WOULD HAVE MATERIALLY AFFECTED EMPLOYEE'S SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.

Employee, being aware of said code section, agrees to expressly waive any rights Employee may have thereunder, as well as under any other statute or common law principles of similar effect.

11. No Pending or Future Lawsuits. Employee represents that Employee has no lawsuits, claims, or actions pending in Employee's name, or on behalf of any other person or entity, against the Company or any other Releasee. Employee also represents that Employee does not intend to bring any claims on Employee's own behalf or on behalf of any other person or entity against the Company or any other Releasee.

12. Application for Employment. While Company may offer to re-hire Employee, Employee understands and agrees that, as a condition of this Agreement, Employee shall not be entitled to any employment with the Company, and Employee hereby waives any right, or alleged right, of employment or re-employment with the Company. Employee further agrees that Employee will not apply for employment with the Company.

13. Confidentiality. The Parties acknowledge that Employee's agreement to keep the terms and conditions of this Agreement confidential was a material factor on which all parties relied in entering into this Agreement. Employee agrees to use Employee's best efforts to maintain in confidence the existence of this Agreement, the contents and terms of this Agreement, and the consideration for this Agreement (hereinafter collectively referred to as "Settlement Information"). Employee agrees to take every reasonable precaution to prevent disclosure of any Settlement Information to third parties, and agrees that there will be no publicity, directly or indirectly, concerning any Settlement Information. Employee agrees to take every precaution to disclose Settlement Information only to those attorneys, accountants, governmental entities, courts of law and family members who have a reasonable need to know (or as required by applicable law) of such Settlement Information. Employee will not have communication with any Company employees, partners, customers, unitholders, or any other third party regarding Employee's separation from the Company without prior consent of Company's General Counsel or Senior Vice President, Human Resources.

14. No Cooperation. Employee agrees Employee will not act in any manner that might damage the business of the Company. Employee agrees that Employee will not encourage, counsel or assist any attorneys or their clients in the presentation or prosecution of any disputes, differences, grievances, claims, charges, or complaints by any third party against any of the Releasees, unless under a subpoena or other court order to do so or unless as otherwise provided for in Section 8. Employee shall inform the Company in writing within three (3) business days of receiving any such subpoena or other court order.

15. Non-Disparagement. Employee agrees to refrain from any defamation, libel, or slander of the Releasees, and any tortious interference with the contracts, relationships and prospective economic advantage of the Releasees. Employee agrees that Employee shall direct all inquiries by potential future employers to the Company's Senior Vice President, Human Resources.

16. Reserved.

17. Reserved.

18. Breach. Employee acknowledges and agrees that any breach of any provision of this Agreement shall constitute a material breach of this Agreement and shall entitle the Company immediately to recover and/or cease the consideration payments provided to Employee under this Agreement.

19. No Knowledge of Wrongdoing. Employee represents that Employee has no knowledge of any wrongdoing involving improper or false claims against a national, federal, or state governmental agency, or any other wrongdoing that involves Employee or other present or former Company employees.

20. No Admission of Liability. The Parties understand and acknowledge that this Agreement constitutes a compromise and settlement of actual or potential disputed claims. No action taken by the Parties hereto, or either of them, either previously or in connection with this Agreement shall be deemed or construed to be:

(a) an admission of the truth or falsity of any claims made or any potential claims; or

(b) an acknowledgment or admission by either Party of any fault or liability whatsoever to the other Party or to any third party.

21. Indemnification. Employee agrees to indemnify and hold harmless the Company from and against any and all loss, costs, damages or expenses, including, without limitation, attorneys' fees or expenses incurred by the Company arising out of the breach of this Agreement by Employee, or from any false representation made herein by Employee, or from any action or proceeding which may be commenced, prosecuted or threatened by Employee or for Employee's benefit, upon Employee's initiative, or with Employee's aid or approval, contrary to the provisions of this Agreement. Employee further agrees that in any such action or proceeding, this Agreement may be pled by the Company as a complete defense, or may be asserted by way of counterclaim or cross-claim. In the event that Employee incurs an indemnification obligation under this Agreement, Employee acknowledges and agrees that Company may in its discretion pursue remedies available to the Company at equity and at law.

22. Reasonable Assistance. Employee acknowledges the continuation of Employee's obligations to assist Company pursuant to the Confidential Information Agreement. In addition, Employee acknowledges that Employee's assistance may be required regarding certain ongoing dispute resolution and corporate matters of Company. To that end, Employee will execute, verify and deliver such documents and perform such other acts (including appearances as a witness) as the Company may reasonably request. Employee's obligation to assist the Company under this Section shall continue beyond the Termination Date, provided that Company shall compensate Employee at a reasonable rate after the Termination Date for the time actually spent by Employee and fees incurred (including attorneys' fees and costs) at the Company's request on such assistance.

23. Costs. The Parties shall each bear their own costs, expert fees, attorneys' fees, and other fees incurred in connection with this Agreement, except as provided herein.

24. Tax Consequences. The Company makes no representations or warranties with respect to the tax consequences of the payment of any sums to Employee under the terms of this Agreement. Employee agrees and understands that Employee is responsible for payment, if any, of local, state and/or federal taxes on the sums paid hereunder by the Company and any penalties or assessments thereon; provided, however, that the Company shall withhold from the consideration and other benefits due hereunder any taxes, charges, or other assessments of any kind required under law to be withheld by the Company. Employee further agrees to indemnify and hold the Company harmless from any claims, demands, deficiencies, penalties, assessments, executions, judgments, or recoveries by any government agency against the Company for any amounts claimed due on account of Employee's failure to pay federal or state taxes or damages sustained by the Company by reason of any such claims, including reasonable attorneys' fees.

25. Arbitration. The Parties agree that any and all disputes arising out of the terms of this Agreement, their interpretation, and any of the matters herein released, shall be subject to binding arbitration before the American Arbitration Association under its Employment Arbitration Rules and Mediation Procedures (the "Rules"). The Company will pay for all professional fees for the arbitrator's services, regardless of who is determined to be the prevailing party. The Parties agree that the prevailing Party in any arbitration shall be awarded its reasonable attorneys' fees and costs, unless contrary to applicable law or the Rules. The arbitration will take place in Santa Clara County, California. The Parties agree that the prevailing Party in any arbitration shall be entitled to injunctive relief in any court of competent jurisdiction to enforce the arbitration award. **The Parties hereby agree to waive their right to have any dispute between them resolved in a court of law by a judge or jury.** This Section will not prevent either Party from seeking injunctive relief (or any other provisional remedy) from any court having jurisdiction over the Parties and the subject matter of their dispute upon such grounds permitted by the applicable law without waiving the right to compel arbitration, such as the circumstances set forth in California Code of Civil Procedure Section 1281.8.

26. Authority. The Company represents and warrants that the undersigned has the authority to act on behalf of the Company and to bind the Company and all who may claim through it to the terms and conditions of this Agreement. Employee represents and warrants that Employee has the capacity to act on Employee's own behalf and on behalf of all who might claim through Employee to bind them to the terms and conditions of this Agreement. Each Party warrants and represents that there are no liens or claims of lien or assignments in law or equity or otherwise of or against any of the claims or causes of action released herein.

27. No Representations. Each Party represents that it has had the opportunity to consult with an attorney, and has carefully read and understands the scope and effect of the provisions of this Agreement. In entering into this Agreement, neither Party has relied upon any representations or statements made by the other Party hereto which are not specifically set forth in this Agreement.

28. Severability. In the event that any provision, or any portion thereof, becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement shall continue in full force and effect without said provision or portion of said provision.

29. Entire Agreement. This Agreement, together with the Confidential Information Agreement and Employee's equity incentive agreements and Indemnification Agreement, represent the entire agreement and understanding between the Company and Employee concerning the subject matter of this Agreement and Employee's relationship with the Company, and supersedes and replaces any and all prior agreements and understandings between the Parties concerning the subject matter of this Agreement and Employee's relationship with the Company.

30. No Waiver. The failure of the Company to insist upon the performance of any of the terms and conditions in this Agreement, or the failure to prosecute any breach of any of the terms and conditions of this Agreement, shall not be construed thereafter as a waiver of any such terms or conditions. This entire Agreement shall remain in full force and effect as if no such forbearance or failure of performance had occurred.

31. No Oral Modification. This Agreement may only be amended in a writing signed by Employee and the Chief Executive Officer or other duly authorized officer of the Company.

32. Governing Law. This Agreement shall be construed, interpreted, governed, and enforced in accordance with the laws of the State of California, without regard to choice of law provisions.

33. Counterparts. This Agreement may be executed in counterparts and by facsimile, and each counterpart shall have the same force and effect as an original and shall constitute an effective, binding agreement on the part of each of the undersigned.

34. Binding Effect. This Agreement shall be binding upon and inure to the benefit of Employee and Employee's heirs, executors, personal representatives, assigns, administrators, and legal representatives. This Agreement shall be binding upon and inure to the benefit of the Company and its successors, assigns and legal representatives.

35. Voluntary Execution of Agreement. This Agreement is executed voluntarily and without any duress or undue influence on the part or behalf of the Parties, with the full intent of releasing all claims. Employee acknowledges that Employee:

(a) has read this Agreement;

(b) has been represented in the preparation, negotiation, and execution of this Agreement by legal counsel of Employee's own choice or that Employee has voluntarily declined to seek such counsel;

(c) understands the terms and consequences of this Agreement and of the releases it contains; and

(d) is fully aware of the legal and binding effect of this Agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have executed and agreed to this Agreement on the respective dates set forth below.

COMPANY:

Synaptics Incorporated

Dated: 5/8/19

By: /s/ John McFarland
Name: John McFarland
Title: Senior Vice President, General Counsel & Sec’y

EMPLOYEE:

Dated: 5/8/19

/s/ Huibert Verhoeven
Huibert Verhoeven

[SIGNATURE PAGE TO SEPARATION AGREEMENT AND RELEASE]

EXHIBIT 10.32

SEPARATION AGREEMENT AND RELEASE

This Separation Agreement and Release ("Agreement") is made by and between Richard Bergman ("Employee") and Synaptics Incorporated (the "Company") (jointly referred to as the "Parties"):

WHEREAS, Employee was employed by the Company pursuant to an employment arrangement and began employment with the Company on September 28, 2011 (the "Service Arrangement"), Employee's employment terminated on March 14, 2019 (the "Termination Date"), and Employee agrees to resign as a director of the Company, and as a director or officer of all Company subsidiaries and affiliates on which Employee served, on the Effective Date, as hereinafter defined;

WHEREAS, the Parties wish to resolve any and all disputes, claims, complaints, grievances, charges, actions, petitions, and demands that the Employee may have against the Company, including, but not limited to, any and all claims arising or in any way related to Employee's employment with or separation from the Company; and

WHEREAS, this Agreement will become effective on the eighth day after it is signed by Employee (such date being the "Effective Date"), provided that Employee has not revoked this Agreement by written notice to the General Counsel of the Company prior to the Effective Date.

NOW THEREFORE, in consideration of the promises made herein, the Parties hereby agree as follows:

1. Termination of Service Arrangement. Employee's employment with the Company ceased as of the Termination Date, and Employee resigned from all Company directorships on the Effective Date.

2. Consideration. As consideration for the release of claims and all other covenants made herein, the Parties agree that the Employee shall receive aggregate consideration of (i) $1,715,000, less applicable withholdings, payable in 24 equal installments on each regular semi-monthly payroll date over the next twelve calendar months following the Effective Date; (ii) $425,400, less applicable withholdings, payable within five (5) business days of the Effective Date; and (iii) $46,309.00, less applicable withholdings, representing payment of 18 months of COBRA premiums for Employee and Employee's dependent family members, payable within five (5) business days of the Effective Date.

3. Benefits. Employee's health insurance benefits (including medical, dental and vision) ceased on March 31, 2019, subject to Employee's right to continue Employee's health insurance under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended. Employee's participation in, and accrual of, all other benefits and incidents of employment, including but not limited to incentives, vacation time, and paid time off, cease on the Termination Date.

4. Reserved.

5. Equity Incentives. Pursuant to the terms of the Synaptics Incorporated Amended and Restated 2010 Incentive Compensation Plan and the equity incentive agreements effective by and between Employee and the Company under which the Company granted to Employee deferred stock units ("DSUs"), market stock units ("MSUs"), performance stock units ("PSUs"), and options to purchase common stock of the Company ("Options," and collectively, the "Equity Incentives"), as of the Effective Date: (i) Employee's Equity Incentives cease vesting; (ii) Employee has and shall have no right to exercise any unvested portion of the Options or receive any unvested portion of the DSUs; (iii) Employee does not have and shall not have any rights under the unvested portion of the Options or DSUs and does not have other any rights or entitlements to purchase units or shares of

the Company or any subsidiary or affiliate of the Company; and (iv) Employee's MSUs and PSUs cease vesting, are voided and Employee shall have no right to any compensation under the MSUs or PSUs. Employee has until the earlier of (i) March 14, 2020, or (ii) such date upon which any particular Option grant expires, to exercise any vested portion of Employee's Options or the Employee will lose all rights to such vested portion of the Options. The exercise price for the Options cannot be offset against any amounts payable to the Employee by the Company or any subsidiary or affiliate thereof.

6. Payment of Salary, Accrued Vacation and Expense Reimbursements. Except as provided in Section 2 above, Employee acknowledges and represents that the Company has paid all salary, wages, bonuses, annual incentives, accrued vacation and paid time off, commissions, expense reimbursements, severance and separation benefits, and any and all other benefits due to Employee as of the Termination Date. Employee acknowledges that Employee is not eligible for any pro rata portion of Employee's fiscal year 2019 target cash incentive. Employee represents and warrants that Employee never suffered an on-the-job or occupational injury or incurred any wage, overtime or leave claims while working at the Company.

7. Confidential Information.

(a) Employee acknowledges that Employee has signed a Proprietary Information and Invention Assignment Agreement dated as of September 28, 2011 (the "Confidential Information Agreement"). Employee reaffirms Employee's obligation to comply with the terms and conditions of the Confidential Information Agreement. Employee will hold in strictest confidence and will not disclose, use, lecture upon, or publish any of the Company's Proprietary Information. Employee hereby assigns to the Company any rights that Employee may have or acquire in Proprietary Information and recognizes that all Proprietary Information shall be the sole property of the Company and its assigns. For purposes of this Agreement, the term "Proprietary Information" shall mean any and all confidential and/or proprietary knowledge, data or information of the Company. By way of illustration but not limitation, "Proprietary Information" includes (i) trade secrets, inventions, mask works, ideas, processes, formulas, source and object codes, data, programs, other works of authorship, know-how, improvements, discoveries, developments, designs and techniques; (ii) information regarding plans for research, development, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers; and (iii) information regarding the skills and compensation of other employees of the Company

(b) Employee shall return all of the Company's property and Proprietary Information in Employee's possession to the Company as required by the terms of the Confidential Information Agreement. By signing this Agreement, Employee represents and declares under penalty of perjury under the laws of the State of California that Employee has returned all Company property and Proprietary Information in Employee's possession to the Company.

(c) Employee understands, in addition, that the Company has received and in the future may receive from third parties confidential or proprietary information ("Third Party Information") subject to a duty on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. Employee will hold Third Party Information in the strictest confidence and will not disclose to anyone other than Company personnel who need to know such information in connection with their work for the Company.

8. Release of Claims. Employee agrees that the foregoing consideration represents settlement in full of all outstanding obligations owed to Employee by the Company, any subsidiaries or affiliates thereof, and all officers, managers, members, supervisors, members of their board of directors, agents and employees thereof. Employee, on Employee's own behalf, and on behalf of Employee's respective heirs, family members, executors, agents, and assigns, hereby fully and forever releases the Company, its affiliates and subsidiaries, and all officers, members of their board of directors, employees, agents, investors, shareholders, members, administrators, affiliates, divisions, predecessor and successor corporations, and assigns of the Company or any subsidiary or affiliate thereof ("the Releasees"), from, and agrees not to sue concerning, any claim, duty, obligation or cause of action relating to any matters of any kind, whether presently known or unknown, suspected or unsuspected, that Employee may possess arising from any omissions, acts or facts that have occurred up until and including the Effective Date including, without limitation:

(a) any and all claims relating to or arising from Employee's employment relationship with the Company and the termination of that relationship;

(b) any and all claims relating to, or arising from, Employee's right to purchase, or actual purchase of, equity of the Company or any subsidiary or affiliate thereof, including, without limitation, any claims for fraud, misrepresentation, breach of fiduciary duty, breach of duty under applicable state corporate law, and securities fraud under any state or federal law;

(c) any and all claims under the law of any jurisdiction including, but not limited to, wrongful discharge of employment, constructive discharge from employment, termination in violation of public policy, discrimination, harassment, retaliation, breach of contract, both express and implied, breach of a covenant of good faith and fair dealing, both express and implied; promissory estoppel, negligent or intentional infliction of emotional distress, negligent or intentional misrepresentation, negligent or intentional interference with contract or prospective economic advantage, unfair business practices, defamation, libel, slander, negligence, personal injury, assault, battery, invasion of privacy, false imprisonment, and conversion;

(d) any and all claims for violation of any national, federal, state or municipal statute, including, but not limited to, Title VII of the Civil Rights Act of 1964, the Civil Rights Act of 1991, the Age Discrimination in Employment Act of 1967, the Americans with Disabilities Act of 1990, the Fair Labor Standards Act, the Employee Retirement Income Security Act of 1974, The Worker Adjustment and Retraining Notification Act, the Older Workers Benefit Protection Act; the Family and Medical Leave Act; the California Family Rights Act; the California Fair Employment and Housing Act, and the California Labor Code, including, but not limited to Labor Code sections 1400-1408;

(e) any and all claims for violation of the federal, or any state, constitution;

(f) any and all claims arising out of any other laws and regulations relating to employment or employment discrimination;

(g) any claim for any loss, cost, damage, or expense arising out of any dispute over the non-withholding or other tax treatment of any of the proceeds received by Employee as a result of this Agreement; and

(h) any and all claims for attorneys' fees and costs.

The Company and Employee agree that the release set forth in this Section shall be and remain in effect in all respects as a complete general release as to the matters released. This release does not extend to any obligations incurred under this Agreement nor to any claims that, by statute, may not be waived.

Furthermore, nothing in this Agreement is intended to, or shall, interfere with Employee's rights under federal, state, or municipal civil rights or employment discrimination laws, including, but not limited to, the statutes specified in Paragraph 8(d) above, or their state or local counterparts, to file or otherwise institute a charge of discrimination with a government agency or regulatory body, to testify or participate in such an agency or administrative hearing or proceeding, or to otherwise cooperate with a federal, state, or municipal government agency proceeding. However, Employee understands and agrees that Employee is waiving any right to personal monetary or other recovery as to such charges or participation, and Employee shall not be entitled to any relief, recovery, or damages in connection with such an agency or administrative complaint, charge or proceeding, regardless of who filed or initiated the complaint, charge, or proceeding.

Additionally, nothing in this Agreement is intended to, or shall, interfere with Employee's rights to cooperate, participate, or testify in an administrative, legislative, or judicial proceeding, or to receive and fully retain a monetary award from a government-administered whistleblower award program for providing information directly to a government agency. Nothing in this Agreement is intended to, or shall, interfere with the Company's obligation to indemnify Employee against any claims, damages, liabilities pursuant to the Indemnification Agreement, dated May 17, 2016, and executed by and between Employee and the Company, and in accordance with applicable state corporate and labor law.

9. Acknowledgement of Waiver of Claims Under ADEA. Employee acknowledges that Employee is waiving and releasing any rights Employee may have under the Age Discrimination in Employment Act of 1967 ("ADEA") and that this waiver and release is knowing and voluntary. Employee and the Company agree that this waiver and release does not apply to any rights or claims that may arise under ADEA after the Effective Date of this Agreement. Employee acknowledges that the consideration given for this waiver and release Agreement is in addition to anything of value to which Employee was already entitled. Employee further acknowledges that Employee has been advised by this writing that:

(a) Employee should consult with an attorney prior to executing this Agreement;

(b) Employee has up to twenty-one (21) days within which to consider this Agreement;

(c) Employee has seven (7) days following Employee's execution of this Agreement to revoke the Agreement;

(d) this Agreement shall not be effective until the revocation period has expired; and

(e) nothing in this Agreement prevents or precludes Employee from challenging or seeking a determination in good faith of the validity of this waiver under the ADEA, nor does it impose any condition precedent, penalties or costs from doing so, unless specifically authorized by federal law.

10. Civil Code Section 1542. Employee represents that Employee is not aware of any claim by Employee other than the claims that are released by this Agreement. Employee acknowledges that Employee has had the opportunity to be advised by legal counsel and is familiar with the provisions of California Civil Code Section 1542, which provides as follows:

A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN EMPLOYEE'S FAVOR AT THE TIME OF EXECUTING THE RELEASE, AND THAT IF KNOWN BY EMPLOYEE WOULD HAVE MATERIALLY AFFECTED EMPLOYEE'S SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.

Employee, being aware of said code section, agrees to expressly waive any rights Employee may have thereunder, as well as under any other statute or common law principles of similar effect.

11. No Pending or Future Lawsuits. Employee represents that Employee has no lawsuits, claims, or actions pending in Employee's name, or on behalf of any other person or entity, against the Company or any other Releasee. Employee also represents that Employee does not intend to bring any claims on Employee's own behalf or on behalf of any other person or entity against the Company or any other Releasee.

12. Application for Employment. While Company may offer to re-hire Employee, Employee understands and agrees that, as a condition of this Agreement, Employee shall not be entitled to any employment with the Company, and Employee hereby waives any right, or alleged right, of employment or re-employment with the Company. Employee further agrees that Employee will not apply for employment with the Company.

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14. No Cooperation. Employee agrees Employee will not act in any manner reasonably calculated to damage the business of the Company. Employee agrees that Employee will not encourage, counsel or assist any attorneys or their clients in the presentation or prosecution of any disputes, differences, grievances, claims, charges, or complaints by any third party against any of the Releasees, unless under a subpoena or other court order to do so or unless as otherwise provided for in Section 8. Employee shall inform the Company in writing within three (3) business days of receiving any such subpoena or other court order.

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16. Reserved.

17. Reserved.

18. Breach. Employee acknowledges and agrees that any breach of any provision of this Agreement shall constitute a material breach of this Agreement and shall entitle the Company immediately to cease the consideration payments provided to Employee under this Agreement.

19. No Knowledge of Wrongdoing. Employee represents that Employee has no knowledge of any wrongdoing involving improper or false claims against a national, federal, or state governmental agency, or any other wrongdoing that involves Employee or other present or former Company employees.

20. No Admission of Liability. The Parties understand and acknowledge that this Agreement constitutes a compromise and settlement of actual or potential disputed claims. No action taken by the Parties hereto, or either of them, either previously or in connection with this Agreement shall be deemed or construed to be:

(a) an admission of the truth or falsity of any claims made or any potential claims; or

(b) an acknowledgment or admission by either Party of any fault or liability whatsoever to the other Party or to any third party.

21. Indemnification. Employee agrees to indemnify and hold harmless the Company from and against any and all loss, costs, damages or expenses, including, without limitation, attorneys' fees or expenses incurred by the Company arising out of the breach of this Agreement by Employee, or from any false representation made herein by Employee, or from any action or proceeding which may be commenced, prosecuted or threatened by Employee or for Employee's benefit, upon Employee's initiative, or with Employee's aid or approval, contrary to the provisions of this Agreement. Employee further agrees that in any such action or proceeding, this Agreement may be pled by the Company as a complete defense, or may be asserted by way of counterclaim or cross-claim. In the event that Employee incurs an indemnification obligation under this Agreement, Employee acknowledges and agrees that Company may in its discretion pursue remedies available to the Company at equity and at law.

22. Reasonable Assistance. Employee acknowledges the continuation of Employee's obligations to assist Company pursuant to the Confidential Information Agreement. In addition, Employee acknowledges that Employee's assistance may be required regarding certain ongoing dispute resolution and corporate matters of Company. To that end, Employee will execute, verify and deliver such documents and perform such other acts (including appearances as a witness) as the Company may reasonably request. Employee's obligation to assist the Company under this Section shall continue beyond the Termination Date, provided that Company shall compensate Employee at a reasonable rate after the Termination Date for the time actually spent by Employee and fees incurred (including attorneys' fees and costs) at the Company's request on such assistance.

23. Costs. The Parties shall each bear their own costs, expert fees, attorneys' fees, and other fees incurred in connection with this Agreement, except as provided herein.

24. Tax Consequences. The Company makes no representations or warranties with respect to the tax consequences of the payment of any sums to Employee under the terms of this Agreement. Employee agrees and understands that Employee is responsible for payment, if any, of local, state and/or federal taxes on the sums paid hereunder by the Company and any penalties or assessments thereon; provided, however, that the Company shall withhold from the consideration and other benefits due hereunder any taxes, charges, or other assessments of any kind required under law to be withheld by the Company. Employee further agrees to indemnify and hold the Company harmless from any claims, demands, deficiencies, penalties, assessments, executions, judgments, or recoveries by any government agency against the Company for any amounts claimed due on account of Employee's failure to pay federal or state taxes or damages sustained by the Company by reason of any such claims, including reasonable attorneys' fees.

25. Arbitration. The Parties agree that any and all disputes arising out of the terms of this Agreement, their interpretation, and any of the matters herein released, shall be subject to binding arbitration before the American Arbitration Association under its Employment Arbitration Rules and Mediation Procedures (the “Rules”). The Company will pay for all professional fees for the arbitrator’s services, regardless of who is determined to be the prevailing party. The Parties agree that the prevailing Party in any arbitration shall be awarded its reasonable attorneys’ fees and costs, unless contrary to applicable law or the Rules. The arbitration will take place in Santa Clara County, California. The Parties agree that the prevailing Party in any arbitration shall be entitled to injunctive relief in any court of competent jurisdiction to enforce the arbitration award. **The Parties hereby agree to waive their right to have any dispute between them resolved in a court of law by a judge or jury.** This Section will not prevent either Party from seeking injunctive relief (or any other provisional remedy) from any court having jurisdiction over the Parties and the subject matter of their dispute upon such grounds permitted by the applicable law without waiving the right to compel arbitration, such as the circumstances set forth in California Code of Civil Procedure Section 1281.8.

26. Authority. The Company represents and warrants that the undersigned has the authority to act on behalf of the Company and to bind the Company and all who may claim through it to the terms and conditions of this Agreement. Employee represents and warrants that Employee has the capacity to act on Employee’s own behalf and on behalf of all who might claim through Employee to bind them to the terms and conditions of this Agreement. Each Party warrants and represents that there are no liens or claims of lien or assignments in law or equity or otherwise of or against any of the claims or causes of action released herein.

27. No Representations. Each Party represents that it has had the opportunity to consult with an attorney, and has carefully read and understands the scope and effect of the provisions of this Agreement. In entering into this Agreement, neither Party has relied upon any representations or statements made by the other Party hereto which are not specifically set forth in this Agreement.

28. Severability. In the event that any provision, or any portion thereof, becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement shall continue in full force and effect without said provision or portion of said provision.

29. Entire Agreement. This Agreement, together with the Confidential Information Agreement and Employee’s equity incentive agreements and Indemnification Agreement, represent the entire agreement and understanding between the Company and Employee concerning the subject matter of this Agreement and Employee’s relationship with the Company, and supersedes and replaces any and all prior agreements and understandings between the Parties concerning the subject matter of this Agreement and Employee’s relationship with the Company.

30. No Waiver. The failure of the Company to insist upon the performance of any of the terms and conditions in this Agreement, or the failure to prosecute any breach of any of the terms and conditions of this Agreement, shall not be construed thereafter as a waiver of any such terms or conditions. This entire Agreement shall remain in full force and effect as if no such forbearance or failure of performance had occurred.

31. No Oral Modification. This Agreement may only be amended in a writing signed by Employee and the Chief Executive Officer or other duly authorized officer of the Company.

32. Governing Law. This Agreement shall be construed, interpreted, governed, and enforced in accordance with the laws of the State of California, without regard to choice of law provisions.

33. Counterparts. This Agreement may be executed in counterparts and by facsimile, and each counterpart shall have the same force and effect as an original and shall constitute an effective, binding agreement on the part of each of the undersigned.

34. Binding Effect. This Agreement shall be binding upon and inure to the benefit of Employee and Employee's heirs, executors, personal representatives, assigns, administrators, and legal representatives. This Agreement shall be binding upon and inure to the benefit of the Company and its successors, assigns and legal representatives.

35. Voluntary Execution of Agreement. This Agreement is executed voluntarily and without any duress or undue influence on the part or behalf of the Parties, with the full intent of releasing all claims. Employee acknowledges that Employee:

(a) has read this Agreement;

(b) has been represented in the preparation, negotiation, and execution of this Agreement by legal counsel of Employee's own choice or that Employee has voluntarily declined to seek such counsel;

(c) understands the terms and consequences of this Agreement and of the releases it contains; and

(d) is fully aware of the legal and binding effect of this Agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have executed and agreed to this Agreement on the respective dates set forth below.

COMPANY:

Synaptics Incorporated

Dated:	May 3, 2019 May 3, 2019	By:	/s/ John McFarland Name: John McFarland Title: Senior Vice President, General Counsel & Sec'y

EMPLOYEE:

Dated:	May 3, 2019 May 3, 2019	/s/ Richard Bergman Richard Bergman

Employee hereby affirms this Agreement, and all terms herein, on May 11, 2019.

EMPLOYEE:

Dated:	May 11, 2019	/s/ Rick Bergman Rick Bergman

[SIGNATURE PAGE TO SEPARATION AGREEMENT AND RELEASE]

Exhibit 10.33

Written Description of the Synaptics Incorporated Retention Program Adopted May 6, 2019

On May 6, 2019, the Executive Committee of the Board of Directors of Synaptics Incorporated (“Synaptics”) instituted a retention program applicable to certain of Synaptics’ executive officers.

The retention program provides that the participating executive officers will receive lump-sum cash award payments (determined in each case by the Executive Committee) in November 2020 should they remain as full-time active employees of Synaptics in good standing for 18 consecutive calendar months starting May 1, 2019. Certain voluntary and unpaid leaves will result in a termination of the applicable retention award. No retention award will be paid to any executive who resigns without Good Reason or who is terminated for Good Cause prior to the end of the retention period (both capitalized terms as defined in the Synaptics Incorporated Severance Policy for Principal Executive Officers, which has previously been filed with the Securities and Exchange Commission). Should Synaptics terminate a participating executive’s employment without Good Cause, or if such executive resigns for Good Reason, Synaptics will pay (i) two-thirds of such executive’s eligible award if the termination occurs during the first twelve months of the retention period, and (ii) a portion of such executive’s eligible award prorated for the actual number of consecutive full calendar months completed as a full-time employee of Synaptics if the termination occurs between the twelfth and eighteenth month of the retention period, provided that such executive resigns from all Synaptics and Synaptics’ affiliate director and officer positions and executes a separation agreement and release in a form acceptable to Synaptics.

Exhibit 21

List of Subsidiaries

NAME	STATE OR JURISDICTION OF ORGANIZATION
Conexant Systems, LLC	Delaware
Synaptics Japan GK	Japan
Synaptics Holding GmbH	Switzerland
Synaptics Hong Kong Limited	Hong Kong
Synaptics LLC	Delaware

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Synaptics Incorporated:

We consent to the incorporation by reference in the registration statements (Nos. 333-81820, 333-99529, 333-99531, 333-146145, 333-146146, 333-170400, 333-170401, 333-193470, 333-214950, 333-221585, 333-228118, and 333-233338) on Form S-8, (Nos. 333-193469 and 333-219713) on Form S-3, and (No. 333-115274) on Form S-4 of Synaptics Incorporated (the Company) of our report dated August 23, 2019, with respect to the consolidated balance sheets of Synaptics Incorporated and its subsidiaries as of June 29, 2019 and June 30, 2018, and the related consolidated statements of operations, comprehensive income/(loss), stockholders' equity, and cash flows for each of the years in the three-year period ended June 29, 2019, and the related notes, and the effectiveness of internal control over financial reporting of Synaptics Incorporated as of June 29, 2019, which report appears in the June 29, 2019 annual report on Form 10-K of Synaptics Incorporated.

/S/ KPMG LLP

Santa Clara, California
August 23, 2019

Exhibit 31.1

Certification of Chief Executive Officer Pursuant to Rule 13a-14(a)/15d-14(a)

I, Michael E. Hurlston, certify that:

1. I have reviewed this annual report on Form 10-K of Synaptics Incorporated;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 23, 2019

/s/ *Michael E. Hurlston*
Michael E. Hurlston
Chief Executive Officer

Exhibit 31.2

Certification of Chief Financial Officer Pursuant to Rule 13a-14(a)/15d-14(a)

I, Kermit Nolan, certify that:

1. I have reviewed this annual report on Form 10-K of Synaptics Incorporated;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 23, 2019

/s/ *Kermit Nolan*

Kermit Nolan
Interim Chief Financial Officer

Exhibit 32.1

Section 1350 Certification of Chief Executive Officer

In connection with the Annual Report on Form 10-K of Synaptics Incorporated (the “Company”) for the year ended June 29, 2019 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Michael E. Hurlston, President and Chief Executive Officer of the Company, certify, to the best of my knowledge and belief, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ *Michael E. Hurlston*
Michael E. Hurlston
Chief Executive Officer
August 23, 2019

Exhibit 32.2

Section 1350 Certification of Chief Financial Officer

In connection with the Annual Report on Form 10-K of Synaptics Incorporated (the "Company") for the year ended June 29, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Kermit Nolan, Interim Chief Financial Officer of the Company, certify, to the best of my knowledge and belief, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ *Kermit Nolan*
Kermit Nolan
Interim Chief Financial Officer
August 23, 2019