

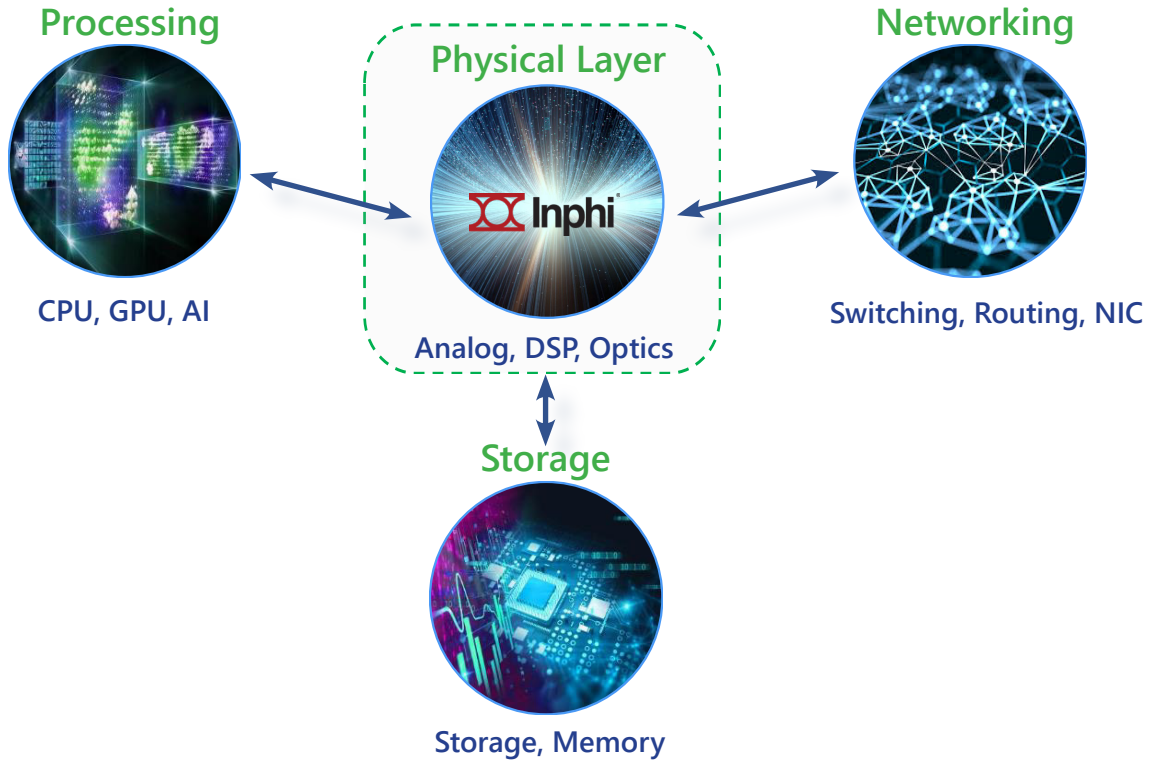


The global leader in high-speed
data movement interconnects



2019 Annual Report
World-leading innovations

Inphi Leads in Physical Layer Data Movement for Cloud & Telecom

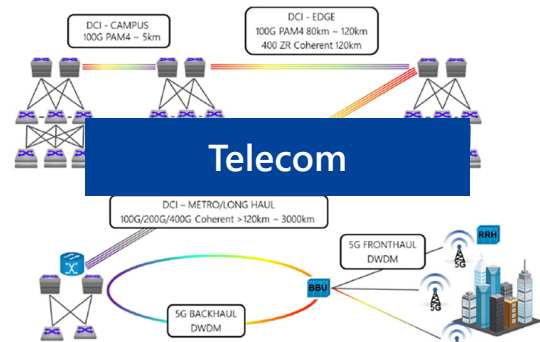


Inphi Provides Differentiated Solutions for Cloud & Telecom



The Data Center is the Computer®

- ✓ PAM is a once in a multi-decade change in data transmission
- ✓ Inside data centers: 7 - 10 km
- ✓ Between data centers: 10 - 120 km



The Cloud is the Network®

- ✓ Coherent transmission: >40km
- ✓ Long Haul: 1,000s km
- ✓ Metro: 600 km
- ✓ 5G: Backhaul 300km, Fronthaul 10km
- ✓ Access: 5G, Cable, 10 - 300 km

Forward Looking Statements

This Annual Report and letter to Stockholders contains forward-looking statements that involve risks and uncertainties. These forward-looking statements include, but are not limited to, statements regarding our strategy, our products, the anticipated benefits and features of our products, use of our products, market acceptance and market share of our products, growth and revenue drivers, industry and market trends, our positioning, our international operations and investments in technology. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements to differ materially from those expressed or implied by such forward-looking statements, and reported results should not be considered as an indication of future performance. Factors that may cause actual results to differ include public health requirements in response to the outbreak of COVID-19 and the impact on our business and operations, which is evolving and beyond our control, and the timing of customer orders and product shipments; members of our management team or a significant number of our global employee base becoming ill with COVID-19; changes in government regulations and mandates to address COVID-19 that may adversely impact our ability to continue to operate without disruption; a significant decline in global macroeconomic conditions that may have an adverse impact on our business and financial results; challenges to our infrastructure because of the number of employees working from remote locations, a cyberattack or other issues associated with remote connectivity; business interruptions related to our supply chain; our ability to manage our business and expenses if customers cancel or delay orders, and other business-related risks and uncertainties that are set forth in our Form 10-K attached hereto, including the section entitled "Risk Factors," and in other reports filed by us with the SEC from time-to-time. You are cautioned not to unduly rely on these forward-looking statements, which speak only as of the date of this Annual Report. Inphi Corporation undertakes no obligation to publicly revise any forward-looking statement to reflect circumstances or event after the date of this Annual Report or to report the occurrence of unanticipated events.

April 21, 2020

Dear Inphi Stockholders:

What a difference a few weeks can make. When I sat down to write this letter, I was looking forward to sharing details about our company's many successes in 2019. While last year was a very good one for us, my focus now, like that of the rest of the world, is on COVID-19 and what it means for our employees, our stockholders, our customers, our business and our world. First, I would like to recognize the medical professionals, first responders, emergency personnel, and law enforcement who are taking risks on the frontline to keep us safe. On the Inphi front, our employees are key to everything we do, and they are Inphi's number one priority. In these most uncertain of times, we have instituted programs to allow our valued employees to work from home, and to assist with the challenges that may arise for them or their families. At the same time, we are focused on steering our company's business through these uncharted waters. Because we have operations in both Wuhan, China and Pavia, Italy, we had an early glimpse of the impact of the pandemic. In response, we organized ourselves to continue to deliver on our customer commitments, including taping out chips, finalizing firmware, validating new products and taking them to production. We have also strengthened our supply chain and continued to deliver to customer commitments with only minor disruptions. And finally, Inphi provided support to the communities of 11 of Inphi's sites in 9 countries. This support covered critical needs such as housing, food, medical research, medical supplies and equipment. Due to the work from home and social distancing initiatives, the demand for bandwidth is skyrocketing and we are currently experiencing accelerating demand for our solutions. In response, we are working in overdrive to help our customers roll out fast, reliable connections over short, medium and long-haul distances. While much of this letter will focus on the accomplishments of the long ago world of 2019, please be assured that Inphi is putting on a full court press to meet current marketplace conditions and to be well situated when we emerge from the current state of affairs. The multi-legged stool strategy that we put in place several years back continues to serve us well. We plan to meet the growing demand for our existing products with an impressive list of new product introductions; and hope to continue expanding our market, our customer list, and our impact on the industry now and in the years ahead. None of us knows what the rest of 2020 will ultimately bring, but we are confident that we are up to the challenge, with the right products and customer focus to continue as the global leader in high-speed data movement interconnects.

Robust financial results as the company rebounded from a challenging 2018. Total revenue for 2019 was \$366 million, a 24% improvement over 2018 revenue of \$295 million. The improvement reflects both a strong rebound from the macroeconomic challenges the company faced in 2018 and the robust demand for our products throughout 2019. Quarter by quarter, we gained momentum such that in the fourth quarter of 2019, we delivered record revenue, operating and net income. The stock market took note. After a disappointing performance in 2018, our stock roared back in 2019 finishing the year 142% higher than it was when the market opened in January of 2019. This compares to the robust 35% increase for the Nasdaq composite.

The good news was not just on the revenue growth line; our non-GAAP gross margin grew from 68.5% in 2018 to a robust 70.0% for the full year 2019. On a bottom line basis, our company produced non-GAAP earnings per share on a fully diluted basis of \$1.61 per share as compared to \$0.86 in 2018. This 87% year over year increase on a 24% revenue gain clearly illustrates that while we continued to invest for the long term, we remain focused on delivering solid earnings on the bottom line.

2019 revenue diversification demonstrates the benefits of our cloud initiative. Historically, Inphi's revenue was predominantly derived from long-haul and metro markets, for telecom customers, with a heavy dependence on China. And while these markets remain very important to our company, they are now just one engine of our growth. Based on the strength of our new PAM and Data Center Interconnect (DCI) product lines, our sales to mostly US cloud customers increased to 57% of our revenue in 2019, up from 50% and 35% respectively in 2018 and 2017. And we expect that diversification to continue as new customers adopt Inphi's 200G and 400G PAM solutions for inside data centers and our 400G ZR solutions for ZR between data centers.

We lead in physical layer data movement for cloud and telecom customers. In 2019, we saw robust demand for our products serving both the cloud and the telecom markets. In the cloud, whether within the data center or between data centers, from 7 meters to 120 kilometers, our high-speed data interconnects continue to lead the market. Our customers increasingly turn to us as they embrace the transition to cloud computing, look to big data analytics and artificial intelligence (AI) to guide their businesses, and unceasingly expand their need for and use of data, transmitted at high speed. In telecom, we have been taking share with our 200G coherent DSP for long-haul and metro applications. And, 5G is a new opportunity that will be unlocked in 2020 and expand in 2021, enabling Inphi to continue to grow that business segment.

Continuous ramp in demand from top US cloud vendors for our PAM products. Inphi's PAM 4 DSP-based platforms lead the inside data center interconnect market. Period. Our PAM4 galaxy had many new stars starting to ramp in 2019 and we look for them to shine brightly in 2020 and beyond. Our 50G PAM4 DSP Polaris along with 28 Gigabaud TiAs and Drivers, our 100G PAM4 DSP Porrima along with 56 Gigabaud TiAs and Drivers, and our PAM4 retimer, Vega went to production with existing and new customers throughout the year. Our multi-generation solutions provide the right answers for our customers' current requirements and have defined a clear upgrade path as their needs expand. As I wrote one year ago, our customers remain focused on the ongoing and massive build-out inside the data center and Inphi will be there to meet their demands with our family of PAM based optical modules. We expect this stellar family will prove to be one of our key growth drivers for years to come.

We have expanded our leadership between Data Centers with our Silicon Photonics, DCI Edge Solutions. As the trend in datacenter is to move towards distributed architectures, we see a significant opportunity to assist our customers as they require increased speed and bandwidth moving data to the edge and between sites. Our

innovative COLORZ® Silicon photonics and DSP-based solutions are the DCI solution for some of the largest datacenter operators. For example, our Dense Wavelength Division Multiplexing (DWDM) PAM DSP-based solution raised the bar by delivering the lowest power and most cost effective 4 Terabit per second per fiber bandwidth, COLORZ. Customers were able to connect multiple data centers in the same metropolitan area at distances up to 80km, and run them as a single, efficient, virtual data center. As a result, we passed a key milestone when cumulative shipments of COLORZ passed the 100,000 unit mark. In time, we expect customers to transition from the award winning COLORZ module to the next generation coherent DSP-based COLORZ II, an advance that brings to data center interconnects a higher density solution requiring less power at a lower cost. As we previewed last year, we are also bringing our customers even more choice with the ZR- and ZR+ solutions for those sending data shorter distances (5 kilometers) to much longer distances (3,000 kilometers) respectively. The upshot is that whatever the distance, we have the solutions to help our customers move their data fast and efficiently. We expect COLORZ to contribute meaningfully to our revenue in 2020, while COLORZ II will be a major revenue contributor in 2021.

Telecom picking up steam driven by our coherent DSP. 5G offers a compelling opportunity for future growth.

After a challenging period reflecting an industry-wide inventory build and the subsequent work-through, the telecom markets are back on track. Inphi has taken a leadership role with our coherent offerings, with the M200 coherent DSP, and our family of coherent TiAs and drivers from 28 to 96 Gbaud. Whether for long-haul and metro, DCI applications, or cable and access networks, our coherent solutions have been gaining market share. We have gone from the underdog in the coherent DSP market to become the leader in the current 7nm generation of coherent DSP with our latest shining star, Canopus. This is a strong achievement from our coherent DSP team. Furthermore, as 5G rolls-out, it will expand the telecom market for our PAM4 solutions for links under 40 kilometers and for coherent solutions for links above 40 kilometers. In 5G, Inphi focuses on the midhaul and backhaul infrastructure aggregation and core transport systems. As a reminder, 5G remains a much discussed new architecture for cellular communications that promises advances in higher data rate, energy savings, and reduced cost and latency for data transmission. We expect 5G to start contributing to revenue in 2020, and ramp significantly in 2021.

The acquisition of e-Silicon which closed on January 10, 2020 strengthens our market position, our product line and our deeply talented team. With the eSilicon acquisition, we expanded our core competencies in digital, memory and high-performance analog design, and leading-edge packaging. We also expanded our customer intimacy at key Tier 1 customers for both the cloud and telecom markets. Now as a combined company, we look to provide leading-edge solutions for the high-bandwidth needs of our joint customers. We are pleased with the way the integration has gone and look to demonstrate the incremental power of the combined team and business in 2020 and beyond.

Another year of high praise and industry recognition. I would be remiss if I did not mention that our differentiated products and customer support efforts again turned heads in 2019 as evidenced by the important customer and industry awards earned by our team during the year. In 2019, we were honored as a Fujitsu Distinguished Partner, Innolight's Supplier of the Year for the second year in a row, and received further accolades from FiberHome, Hisense, H3C, and LightWave Innovation. While as I have previously said, their confidence in us is best demonstrated by ongoing orders, we were very pleased to have been formally recognized as a top performing partner by these important customers.

Looking ahead to 2020. As we look to 2020, the good news is we are very confident in our team and our products, both the stalwarts and the more recently introduced. We are also confident that our R&D efforts will continue to deliver the high performance solutions our customers have come to expect from us. However, as I write this letter, I am concerned with the potential impact of factors in the world around us, including the impact of geopolitical tensions and the as yet not fully knowable impact of the COVID-19 virus on people and production lines around the world. There is no telling what the year ahead holds or when and how fast our daily lives can return to "normal." Nonetheless, we are prepared, focused and alert and will respond to these conditions as they unfold.

"It is not the critic who counts... The credit belongs to the man who is actually in the arena... who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly..."
Theodore Roosevelt

Thank you for your continued support. We thank you, our stockholders, for your ongoing support and look forward to delivering another year of solid customer engagements, innovative product introductions, and strong financial results. We also hope to return to a more healthy world in the months ahead. In these difficult times caused by the unprecedented COVID-19 pandemic, we affirm our commitment to the communities in which we live and work by continuing to keep people employed, and to go further, by continuing to hire and grow. We have the team and the financial wherewithal to step up alongside our customers. Our goals are aligned with their success and our stockholders' returns. We plan to continue to invest, in a responsible and ROI-driven manner, to be ready to meet the evolving asks and needs of our Tier 1 cloud and telecom customers. Even in tough times, we will remain focused on building the global leader in data-movement interconnects. Leadership is not easy to earn and difficult to keep, but we are confident that we are on our way!

Stay safe, and thank you,

Ford Tamer

Ford Tamer

Inphi President and Chief Executive Officer

Reconciliation of GAAP to Non-GAAP Financial Measures

A reconciliation of non-GAAP gross margin and non-GAAP earnings per share on a fully diluted basis to their GAAP equivalents, and a discussion as to why management uses these measures, is set forth in our Form 8-K dated February 4, 2020 (see www.inphi.com under "Investors" and "SEC Filings")

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

Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2019

Or

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

Commission file number 001-34942



Inphi Corporation

(Exact Name of Registrant as Specified in Its Charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization)

77-0557980

(I.R.S. Employer Identification No.)

2953 Bunker Hill Lane, Suite 300, Santa Clara, California 95054

(Address of Principal Executive Offices) (Zip Code)

Registrant's telephone number, including area code: (408) 217-7300

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

| Title of Class | Trading Symbol(s) | Name of Exchange on Which Registered |
|---------------------------------|-------------------|--------------------------------------|
| Common Stock, \$0.001 par value | IPHI | The New York Stock Exchange |

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

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

As of June 30, 2019, the aggregate market value of the Registrant's common stock held by non-affiliates of the Registrant was approximately \$2.2 billion, based on the closing price of \$50.10 per share of common stock as reported on the New York Stock Exchange for June 28, 2019.

The total number of shares outstanding of the Registrant's common stock, \$0.001 par value per share, as of February 26, 2020 was 46,077,975.

DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates by reference certain information from the registrant's definitive proxy statement for the 2020 Annual Meeting of Stockholders to be filed no later than 120 days after the conclusion of the registrant's fiscal year ended December 31, 2019.

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INPHI CORPORATION
ANNUAL REPORT ON FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2019

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PART I

ITEM 1. BUSINESS

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. When used in this report, the terms “may,” “might,” “will,” “objective,” “intend,” “should,” “could,” “can,” “would,” “expect,” “believe,” “estimate,” “predict,” “potential,” “plan,” “anticipate,” “seek,” “future,” “strategy,” “likely,” or the negative of these terms, and similar expressions are intended to identify forward-looking statements. These statements include statements regarding our anticipated trends and challenges in our business and the markets in which we operate, including the market for 25G to 600G high-speed analog semiconductor solutions, our competitive position, demand for our current products, our plans for future products and anticipated features and benefits thereof, expansion of our product offerings and business activities, our plans to expand international operations, enhancements of existing products, the benefits of outsourcing, our ability to forecast demand and its effects, the impact of U.S. government export restrictions on Huawei, our acquisitions and investments in other companies or technologies, including our acquisition of eSilicon Corporation and the anticipated benefits thereof, critical accounting policies and estimates, our expectations regarding our expenses and revenue, sources of revenue, our effective tax rate and tax benefits, the benefits of our products and services, our technological capabilities and expertise, our liquidity position and sufficiency thereof, including our anticipated cash needs and uses of cash, our ability to generate cash, our operating and capital expenditures and requirements and our needs for additional financing and potential consequences thereof, repatriation of cash balances from our foreign subsidiaries, our contractual obligations, our anticipated growth and growth strategies, including growing our end customer base, interest rate sensitivity, adequacy of our disclosure controls, and our legal proceedings and warranty claims. These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these or any other forward-looking statements. These risks and uncertainties include, but are not limited to, those risks discussed below, as well as factors affecting our results of operations, our ability to manage our growth, our ability to sustain or increase profitability, demand for our solutions, the effect of changes in average selling prices for our products, our ability to compete, our ability to rapidly develop new technology and introduce new products, our ability to safeguard our intellectual property, our ability to qualify for tax holidays and incentives, trends in the semiconductor industry and fluctuations in general economic conditions, and the risks set forth throughout this report, including the risks set forth under Part I, “Item 1A, Risk Factors.” Readers are cautioned not to place undue reliance on these forward-looking statements, which are based on current expectations and reflect management’s opinions only as of the date hereof. These forward-looking statements speak only as of the date of this Report. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations with regard thereto or any changes in events, conditions or circumstances on which any such statement is based.

All references to “Inphi,” “we,” “us” or “our” mean Inphi Corporation.

Inphi®, iKON™, InphiNityCore™, Canopus™, ColorZ®, ColorZ-Lite™, iMB™, OmniConnect™, Polaris™, Tri-rate®, Vega™, M200 LightSpeed-III™, Porrima™ and the Inphi logo are among the trademarks, registered trademarks, or service marks owned by Inphi.

Overview

Our Company

We are a fabless provider of high-speed analog and mixed signal semiconductor solutions for the communications and cloud markets. Our analog and mixed signal semiconductor solutions provide high signal integrity at leading-edge data speeds while reducing system power consumption. Our semiconductor solutions are designed to address bandwidth bottlenecks in networks, maximize throughput and minimize latency in computing environments and enable the rollout of next generation communications and cloud infrastructures. Our solutions provide a vital high-speed interface between analog and mixed signals and digital information in high-performance systems such as telecommunications transport systems, enterprise networking equipment and data centers. We provide 25G to 600G high-speed analog and mixed signal semiconductor solutions for the communications market.

In January 2020, we completed the acquisition of eSilicon Corporation (eSilicon) for approximately \$215.0 million in cash, subject to certain adjustments including cash, debt and transaction expenses. A portion of the consideration has been placed in an escrow fund for up to 12 months (or up to 36 months in certain circumstances) following the closing for the satisfaction of certain indemnification obligations. We acquired eSilicon to accelerate our roadmap in developing electro-optics solutions for cloud and telecommunications customers.

We leverage our proprietary high-speed analog and mixed signal processing expertise and our deep understanding of system architectures to address data bottlenecks in current and emerging communications, enterprise network, computing and storage architectures. We develop these solutions as a result of our competitive strengths, including our system-level simulation capabilities, analog design expertise, strong relationships with industry leaders, extensive broad process technology experience and high-speed package modeling and design expertise. We use our core technology and strength in high-speed analog design to enable our customers to deploy next generation communications systems that operate with high performance at high-speed. We believe we are at the forefront of developing semiconductor solutions that deliver up to multi-Terabit speeds throughout the network infrastructure, including core, metro and the cloud.

We have ongoing, informal collaborative discussions with industry and technology leaders in Tier-1 cloud providers, telecom operators, network system original equipment manufacturers (OEMs) and optical module and component vendors to design architectures and products that solve bandwidth bottlenecks in existing and next generation communications systems. Although we generally do not have any formal collaboration agreements with these entities, we often engage in informal discussions with these entities with respect to anticipated technological challenges, next generation customer requirements and industry conventions and standards. We help define industry conventions and standards within the markets we target by collaborating with technology leaders, OEMs systems manufacturers and standards bodies. Our products are designed into systems sold by OEMs, including Tier-1 OEMs in the telecom and networking system markets worldwide. We believe we are one of a limited number of suppliers to these OEMs for the type of products we sell, and in some cases we may be the sole supplier for certain applications. We sell both directly to these OEMs and to other intermediary systems or module manufacturers that, in turn, sell to these OEMs.

Our Business

Our semiconductor solutions leverage our deep understanding of high-speed analog and mixed signal processing and our system architecture knowledge to address data bottlenecks in current and emerging network and cloud architectures. We design and develop our products for the communications and computing markets, which typically have two to three year design cycles, and product life cycles of five or more years. We believe our leadership position in developing high-speed analog and mixed signal semiconductors is a result of the following core strengths:

- ***System-Level Simulation Capabilities.*** We design our high-speed analog and mixed signal semiconductor solutions to be critical components in complex systems. In order to understand and solve system problems, we work closely with systems vendors to develop proprietary component, channel and system simulation models. We use these proprietary simulation and validation tools to accurately predict system performance prior to fabricating the semiconductor or alternatively, to identify and optimize critical semiconductor parameters to satisfy customer system requirements. We use these simulation and validation capabilities to reduce our customers' time to market and engineering investments, thus enabling us to establish differentiated design relationships with our customers.
- ***Analog Design Expertise.*** We believe that we are a leader in developing broadband analog and mixed signal semiconductors operating at high frequencies of up to 100 GHz. High-speed analog circuit design is extremely challenging because, as frequencies increase, semiconductors are increasingly sensitive to temperature, power supply noise, process variation and interaction with neighboring circuit elements. Development of components that work robustly at high frequencies requires an understanding of analog circuit design, including electromagnetic theory and practical experience in implementation and testing. Our analog design expertise has enabled us to design and commercially ship several first in the world technologies including the first 100G linear transimpedance amplifier (TIA) and the first 400G linear modulator driver that is now being widely deployed in volume globally in telecommunications networking infrastructures. We launched the world's first 50/100/200/400G 4-level Pulse Amplitude Modulation (PAM4) interconnect ICs for cloud interconnects. The chipset solution included multiple variants of the PAM4 PHY IC based on a highly adaptable and scalable InphiNityCore™ digital signal processing (DSP) engine and the OmniConnect™ transmitter for copper and optics media along with a companion linear TIA for Nx50G PAM4 interfaces.
- ***Silicon Photonics Design Expertise.*** We have developed deep expertise in Silicon photonics (Sipho) and successfully commercialized the world first 100G dense wavelength division multiplexing (DWDM) Sipho-based solutions that consumes as little as 4.5W of power versus alternate solutions at 25W. This Sipho-based solution has been deployed in high volume at a Tier-1 cloud vendor and continues to gain market acceptance at Tier-1 OEMs for the enterprise and internet exchange customers.
- ***DSP Design Expertise.*** Our DSP algorithm engineers and digital designers are experts on low-power and low-latency DSP designs for equalization, estimation, clock recovery, carrier recovery, forward error correction, and

coded modulation enabling the highest performance PAM4 and higher-order-modulation serdes, optical interconnects, and coherent modems. Our low-power and low-latency DSP application-specific integrated circuit provides a critical advantage for small-form factor pluggable modules, on board optics, in package optics or any other highly integrated electrical or electro-optical communication systems for high speed data center interconnect and fiber optic telecom networks.

- ***Strong Relationships with Industry Leaders.*** We develop many of our high-speed analog and mixed signal semiconductor solutions for applications and systems that are driven by industry leaders in the communications and cloud markets. Through our established relationships with industry leaders, we have repeatedly demonstrated the ability to address their technological challenges. As a result, we are designed into several of their current systems and believe we are well-positioned to develop high-speed analog and mixed signal semiconductor solutions for their emerging architectures. We have ongoing, informal collaborative discussions with communication, networking companies, and cloud companies in Tier-1 cloud providers, telecom operators, network system OEMs and optical module and component vendors to address their next generation 100G and beyond 100G efforts. Specifically, we engage in informal discussions with these entities with respect to anticipated technological challenges, next generation customer requirements and industry conventions and standards. As a result of our development efforts with industry leaders, we help define industry conventions and standards within the markets we target by collaborating with technology leaders, OEMs and systems manufacturers, as well as standards bodies such as the Institute of Electrical and Electronic Engineers (IEEE) and the Optical Internetworking Forum (OIF) to establish industry standards.
- ***Broad Process Technology.*** We employ process technology experts, device technologists and circuit designers who have extensive experience in many process technologies including CMOS, SiGe, Silicon photonics (Sipho) and III-V technologies such as gallium arsenides or indium phosphide. We have developed specific internal models and design kits for each process to support a uniform design methodology across all of our semiconductor solutions. For example, our products using 16 nanometer CMOS technology require development of accurate models for sub-circuits such as integrated phase lock loops, varactors and inductors. In addition, for Sipho and III-V materials-based processes, in-house model development is a necessity and we believe also provides a substantial competitive advantage because these processes have complex material and device interactions. Combined with our fabless manufacturing strategy, our design expertise, proprietary model libraries and uniform design methodology allow us to use the best possible materials and substrates to design and develop our semiconductor solutions. We believe that our ability to design high-speed analog and mixed signal semiconductors in a wide range of materials and process technologies allows us to provide superior performance, power, cost and reliability for a specific set of market requirements.
- ***High-Speed Package Modeling and Design.*** We have developed deep expertise in high-speed package modeling and design, since introducing the first high-speed 50 GHz MUX and DEMUX product in 2001. At high frequencies, the interaction between an analog device, its package and the external environment can significantly affect product performance. Accurately modeling and developing advanced packaging allows semiconductor solutions to address this challenge. Due to the advanced nature of this work, there is a limited supply of engineers with experience in high-speed package modeling and design, and therefore, this required expertise can be difficult to acquire for companies that have not invested in developing such a skill set. We have developed an infrastructure to simulate electrical, mechanical and thermal properties of devices and packages that we integrate within our semiconductor design process and implement at our third-party packaging providers. Modeling is an inherently iterative process, and since our model libraries are used extensively by our circuit designers, the accuracy and value of these models increases over time. Our current packaging and modeling techniques enable us to deliver semiconductors that are energy efficient, offer high-speed processing and enable advanced signal integrity, all in a small footprint.

We believe that our system-level simulation capabilities, our analog design and broad process technology design capabilities as well as our strengths in packaging enable us to differentiate ourselves by delivering advanced high-speed analog and mixed signal processing solutions. For example, we believe we are the first vendor who has successfully commercialized DSP base 100G Ethernet PHYs running PAM4 standard CMOS process.

We believe the key benefits that our solutions provide to our customers are as follows:

- ***High Performance.*** Our high-speed analog and mixed signal semiconductor solutions are designed to meet the specific technical requirements of our customers in their respective end markets. In many cases, our close design relationships and deep engineering expertise put us in a position where we are one of a limited group of semiconductor vendors that can provide the necessary solution. For instance, in the broadband communications

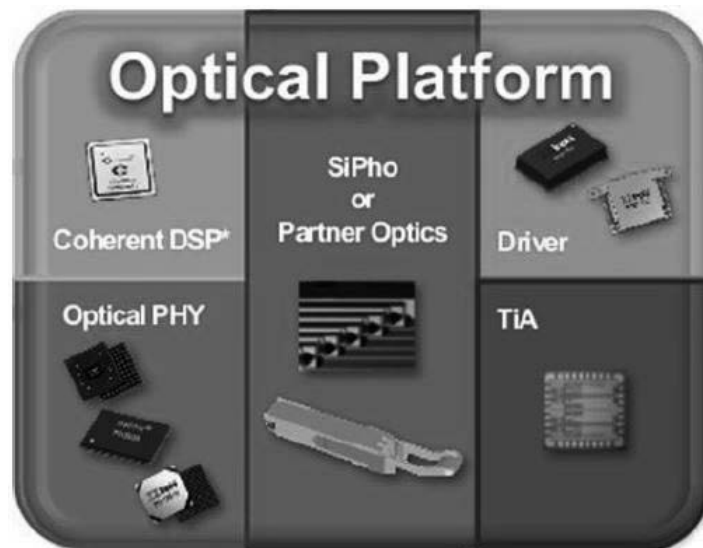
market, we believe our products achieve the highest signal integrity and attain superior signal transmission distance at required error-free or low error rates.

- **Low Power and Small Footprint.** In each of the end markets that we serve, the power budget of the overall system is a key consideration for systems designers. Power consumption greatly impacts system operation cost, footprint and cooling requirements, and is increasingly becoming a point of focus for our customers. We believe that our high-speed analog and mixed signal processing solutions enable our customers to implement system architectures that reduce overall system power consumption. We also believe that, at high frequencies, our high-speed analog and mixed signal semiconductor devices typically consume less power than competitors' standard designs, which often incorporate power-consuming digital signal processing to perform data transfer functions, thereby further reducing overall system power consumption. In addition, in many of our applications, we are able to design and deliver semiconductors that have a smaller footprint and therefore reduce the overall system size.
- **Faster Time to Market.** Our customers compete in markets that require high-speed, reliable semiconductors that can be integrated into their systems as soon as new market opportunities develop. To meet our customers' time-to-market requirements, we work closely with them early in their design cycles and are actively involved in their development processes. Over the past ten years, we have developed methodologies and simulation environments that accurately predict the behavior of complex integrated circuits within various communications systems. In addition, we have developed an extensive internal library of proven building block circuits such as amplifiers, phase frequency detectors and transmitters that are reused to shorten design cycles and reduce risk.

Products

Our leading edge, high-speed, mixed signal semiconductor solutions equate to the planes, trains and trucks used by physical delivery services to quickly and reliably speed information from place to place.

Our telecommunication solutions are our planes, working across distances of 100s to 1000s kilometers. Products include our coherent transimpedance amplifiers, drivers and DSPs which set the gold standard for leading edge performance, quality, and reliability. Our data center edge interconnect solutions are our trains, delivering a large amount of packages, across 80 km distances. Our ColorZ® is the industry's first 100G DWDM solution in QSFP28 form factor, utilizing advanced silicon photonics and PAM4 modulation, to deliver up to 4Tb/s of bandwidth over a single fiber. Our inside data center interconnects are our trucks, working across hundreds of meters up to kilometers. Our PAM interconnects along with accompanying TIAs and drivers deliver low power, cost effective solutions for cloud and enterprise customers.



As of December 31, 2019, we have a wide range of products in our portfolio, including products that have commercially shipped, products for which we have shipped engineering samples and products under development, that perform a wide range of functions such as amplifying, encoding, multiplexing, demultiplexing, and retiming signals at speeds up to 400 Gbps. These products are key enablers for servers, routers, switches, storage and other equipment that process, store and transport data traffic. We introduced 22 and 45 new products in 2019 and 2018, respectively. We design and develop our products for the

communications and computing markets, which typically have two to three year design cycles, and product life cycles as long as five years or more.

We introduced ColorZ® in 2016 and began to ship in commercial volume in 2017. Sales of ColorZ® comprised 15%, 18% and 17% of our total revenue in 2019, 2018 and 2017, respectively. In 2012, we introduced and began to ship in commercial volume a dual, differential input linear transimpedance/variable-gain amplifier that we identify as product number IN3250TA-SO2D. Sales of IN3250TA-SO2D product comprised 10% of our total revenue in 2017. There were no other products that generated more than 10% of our total revenue in 2019, 2018 or 2017.

Customers

We sell our products directly to OEMs and indirectly to OEMs through module manufacturers, original design manufacturers (ODMs) and sub-systems providers. We work closely with technology leaders to design architectures and products that help solve bandwidth bottlenecks in and between systems. These technology leaders often design our products into reference designs, which they provide to their customers and suppliers. In the networking market, we work closely with OEMs to deliver high performance communication links. These OEMs design our products into their systems and then require their ODM and electronics manufacturing services suppliers to purchase and use that specific product from us. We also work directly with optical module manufacturers to design our products into their modules, which they sell to OEMs.

We work closely with our customers throughout design cycles that often last two to three years and we are able to develop long-term relationships with them as our technology becomes embedded in their products. As a result, we believe we are well-positioned to not only be designed into their current systems, but also to continually develop next generation high-speed analog and mixed signal semiconductor solutions for their future products. During the year ended December 31, 2019, we sold our products to approximately 100 customers.

Sales to customers in Asia accounted for 64%, 57% and 62% of our total revenue in 2019, 2018 and 2017, respectively. Because many of our customers or their OEM manufacturers are located in Asia, we anticipate that a majority of our future revenue will continue to come from sales to that region. Although a large percentage of our sales are made to customers in Asia, we believe that a significant number of the systems designed by these customers and incorporating our semiconductor products are then sold to end-users outside Asia.

We currently rely, and expect to continue to rely, on a limited number of customers for a significant portion of our revenue. In the year ended December 31, 2019, we believe that sales to Microsoft Corporation (Microsoft) and Huawei Technologies Co., Ltd. (Huawei), directly and indirectly, through subcontractors, accounted for approximately 14% and 11% of our total revenue, respectively, and that our 10 largest direct customers collectively accounted for approximately 70% of our total revenue. We sell products to Fabrinet Co., Ltd. (Fabrinet), a subcontractor who sells to various end customers. Included in the 10 largest direct customers are sales to Fabrinet, which accounted for approximately 11% of our total revenue for the year ended December 31, 2019. We believe, in the aggregate, sales to Cisco Systems, Inc. (Cisco), including its subcontractors was significant but less than 10% of our total revenue for the year ended December 31, 2019. In the year ended December 31, 2018, we believe that sales to Microsoft, Huawei, and Cisco, directly and indirectly, through subcontractors, accounted for approximately 18%, 14% and 11% of our total revenue, respectively, and that our 10 largest direct customers collectively accounted for approximately 74% of our total revenue. We sell products to Cyberlink Electronics Limited (Cyberlink), a distributor who sells to various end customers. Included in the 10 largest direct customers are sales to Cyberlink which accounted for approximately 11% of our total revenue for the year ended December 31, 2018. In the year ended December 31, 2017, we believe that sales to Microsoft, Huawei, and Cisco, directly and indirectly, through subcontractors, accounted for approximately 17%, 14%, and 11% of our total revenue, respectively and that our 10 largest direct customers collectively accounted for approximately 70% of our total revenue. No other single customer directly or indirectly accounted for more than 10% of our total revenue in 2019, 2018 or 2017.

Sales and Marketing

Our design cycle from initial engagement to volume shipment is typically two to three years, with product life cycles in the markets we serve ranging from five to 10 years or more. For many of our products, early engagement with our customers' technical staff is necessary for success. To ensure an adequate level of early engagement, our application and development engineers work closely with our customers to identify and propose solutions to their systems challenges.

In addition to our direct customers, we work closely with technology leaders in Tier-1 cloud providers, telecom operators, network system OEMs and optical module and component vendors for the cloud, networking and communications market to anticipate and solve next generation challenges facing our customers. As part of the sales and product development

process, we often design our products in close collaboration with these industry leaders and help define their architecture. We also participate actively in setting industry standards with organizations such as IEEE and OIF to have a voice in the definition of future market trends.

We sell our products worldwide through multiple channels, including our direct sales force and a network of sales representatives and distributors. For the year ended December 31, 2019, we derived 87% of our total revenue from sales by our direct sales team and third-party sales representatives and 13% of our sales were made through third-party distributors. We operate marketing representative offices in China, Japan, Taiwan, Germany, and the United States and employ marketing personnel that meet with our customers locally and interact with our channel partners locally. Our channel network includes more than one hundred sales and support professionals to support our products and customers. All of these sales professionals are sales agents and are employed by our distributors and sales representatives. We believe these distributors and sales representatives have the requisite technical experience in our target markets and are able to leverage existing relationships and understanding of our customers' products to effectively sell our products. Given the breadth of our target markets, customers and products, we provide our direct and indirect sales teams with regular training and share product information with our customers and sales teams using web-based tools.

Manufacturing

We operate a fabless business model and use third-party foundries and assembly and test manufacturing contractors to manufacture, assemble and test our semiconductor products. We also inspect and test certain parts in our Irvine and Westlake Village, California facilities. This outsourced manufacturing approach allows us to focus our resources on the design, sale and marketing of our products. In addition, we believe outsourcing many of our manufacturing and assembly activities provides us the flexibility needed to respond to new market opportunities, simplifies our operations and significantly reduces our capital requirements.

We subject our third-party manufacturing contractors to qualification requirements in order to meet the high quality and reliability standards required of our products. We carefully qualify critical partners and processes before applying the technology to our products. Our engineers work closely with our foundries and other contractors to increase yield, lower manufacturing costs and improve product quality.

- **Wafer Fabrication.** We currently utilize a wide range of semiconductor processes to develop and manufacture our products. Each of our foundries tends to specialize in a particular semiconductor wafer process technology. We choose the semiconductor process and foundry that we believe provides the best combination of performance attributes for any particular product. For most of our products, we utilize a single foundry for semiconductor wafer production. Our international headquarters in Singapore purchases all wafer material and owns the material until the manufacturing process is complete and the product is shipped to a customer either inside or outside North America or to physical inventory locations for the respective region. Our principal foundries are Taiwan Semiconductor Manufacturing Company Ltd. (TSMC) in Taiwan, WIN Semiconductors Corp. (WIN Semiconductors) in Taiwan, TowerJazz Semiconductor Ltd. (TowerJazz) in North America and GlobalFoundries in North America.
- **Package and Assembly.** Upon the completion of processing at the foundry, the finished wafers are shipped to our third-party assemblers for packaging and assembly. Currently, our principal packaging and assembly contractors are STATS ChipPAC Ltd. (STATS ChipPAC) in Korea, Kyocera Corporation (Kyocera) in Japan, Tong Hsing Electronics Industries Ltd. (Tong Hsing) in Taiwan, Amkor Technology in Korea, LuxNet Corporation (LuxNet) in Taiwan and ASE Technology (ASE) in Taiwan and Malaysia.
- **Test.** At the last stage of integrated circuit production, our third-party test service providers test the packaged and assembled integrated circuits. Currently, STATS ChipPAC in Korea, ISE Labs, Inc. (ISE Labs) in North America, Giga Solution Tech Co., Ltd. (Giga Solution) in Taiwan, WIN Semiconductors in Taiwan, ASEM Technology in Malaysia and Presto Engineering in North America are our test partners. We also perform testing in our Irvine and Westlake Village, California facilities.

We are committed to maintaining the highest level of quality in our products. Our objective is that our products meet all of our customer requirements, are delivered on-time and function reliably throughout their useful lives. As part of our total quality assurance program, our quality management system has been certified to ISO 9001:2008 standards. Our manufacturing partners are also ISO 9001 certified.

Research and Development

We focus our research and development efforts on developing products that address bandwidth bottlenecks in networks and minimize latency in computing environments. We believe that our continued success depends on our ability to both introduce improved versions of our existing products and to develop new products for the markets that we serve. We devote a portion of our resources to expanding our core technology including efforts in system-level simulation, high-speed analog design, supporting a broad range of process technologies and high-speed package modeling and design.

We develop models that are used as an input to a combination of proprietary and commercially available simulation tools. We use these tools to predict overall system performance based on the performance of our product. After our product is manufactured, we perform system measurements and refine our model set to improve the model's accuracy and predictive ability. As a result, our models and simulation tools have improved over time and we have been able to accurately predict overall system performance prior to fabricating a part.

We have assembled a core team of experienced engineers and systems designers in eight design centers located in the United States, Canada, Germany, Singapore, United Kingdom and Argentina. Our technical team typically has, on average, more than 21 years of industry experience with more than 50% having advanced degrees (master's degree and above) and more than 20% having Ph.Ds. These engineers and designers are involved in advancing our core technologies, as well as applying these core technologies to our product development activities across a number of areas including telecommunications transport systems, enterprise networking equipment, data centers and enterprise servers, storage platforms, test and measurement and military systems.

Competition

The global semiconductor market in general, and the communications market in particular, are highly competitive. We expect competition to increase and intensify as more and larger semiconductor companies enter our markets. Increased competition could result in price pressure, reduced profitability and loss of market share, any of which could materially and adversely affect our business, revenue and operating results.

Currently, our competitors range from large, international companies offering a wide range of semiconductor products to smaller companies specializing in narrow markets. Our primary competitors include Acacia Communications, Inc., Broadcom Ltd., Integrated Device Technology, Inc., M/A-COM Technology Solutions Inc., MaxLinear, Inc., NTT Electronics Corporation, Qorvo, Inc. and Semtech Corp. as well as other smaller analog and mixed signal processing companies. We expect competition in our target markets to increase in the future as existing competitors improve or expand their product offerings.

Our ability to compete successfully depends on elements both within and outside of our control, including industry and general economic trends. During past periods of downturns in our industry, competition in the markets in which we operate intensified as our customers reduced their purchase orders. Many of our competitors are significantly larger, have greater financial, technical, marketing, distribution, customer support and other resources, are more established than we are, and have significantly better brand recognition and broader product offerings with which to withstand similar adverse economic or market conditions in the future. These factors may materially and adversely affect our current and future target markets and our ability to compete successfully in those markets.

We compete or plan to compete in different target markets to various degrees on the basis of a number of principal competitive factors, including:

- product performance;
- power budget;
- features and functionality;
- customer relationships;
- size;
- ease of system design;
- product roadmap;

- reputation and reliability;
- customer support; and
- price.

We believe we compete favorably with respect to each of these factors. We maintain our competitive position through our ability to successfully design, develop and market complex high-speed analog and mixed signal solutions for the customers that we serve.

Intellectual Property

We rely on a combination of intellectual property rights, including patents, trade secrets, copyrights and trademarks, and contractual protections, to protect our core technology and intellectual property. As of December 31, 2019, we had 893 issued and allowed patents and other patent applications pending in the United States. The 780 issued and allowed patents in the United States expire in the years beginning in 2020 through 2038. Many of our issued patents and pending patent applications relate to high-speed circuit and package designs.

We may not receive competitive advantages from any rights granted under our patents, and our patent applications may not result in the issuance of any patents. In addition, any future patent may be opposed, contested, circumvented, designed around by a third party or found to be unenforceable or invalidated. Others may develop technologies that are similar or superior to our proprietary technologies, duplicate our proprietary technologies or design around patents owned or licensed by us.

In addition to our own intellectual property, we also use third-party licensors for certain technologies embedded in our semiconductor solutions. These are typically non-exclusive contracts provided under paid-up licenses. These licenses are generally perpetual or automatically renewed for so long as we continue to pay any maintenance fees that may be due. To date, maintenance fees have not constituted a significant portion of our annual capital expenditures. We have entered into a number of licensing arrangements pursuant to which we license third-party technologies. We do not believe our business is dependent to any significant degree on any individual third-party license.

We generally control access to and use of our confidential information through the use of internal and external controls, including contractual protections with employees, contractors and customers. We rely in part on United States and international copyright laws to protect our mask work. All employees and consultants are required to execute confidentiality agreements in connection with their employment and consulting relationships with us. We also require them to agree to disclose and assign to us all inventions conceived or made in connection with the employment or consulting relationship.

Despite our efforts to protect our intellectual property, unauthorized parties may still copy or otherwise obtain and use our software, technology or other information that we regard as proprietary intellectual property. In addition, we intend to expand our international operations, and effective patent, copyright, trademark and trade secret protection may not be available or may be limited in foreign countries.

The semiconductor industry is characterized by vigorous protection and pursuit of intellectual property rights and positions, which has resulted in protracted and expensive litigation for many companies. We have in the past received and, particularly as a public company, we expect that in the future we may receive, communications from various industry participants alleging our infringement of their patents, trade secrets or other intellectual property rights. Any lawsuits could subject us to significant liability for damages, invalidate our proprietary rights and harm our business and our ability to compete. Any litigation, regardless of success or merit, could cause us to incur substantial expenses, reduce our sales and divert the efforts of our technical and management personnel. In the event we receive an adverse result in any litigation, we could be required to pay substantial damages, seek licenses from third parties, which may not be available on reasonable terms or at all, cease sale of products, expend significant resources to develop alternative technology or discontinue the use of processes requiring the relevant technology.

Cybersecurity

We have designed and implemented and continue to maintain a security program consisting of policies, procedures, and technology meant to maintain the privacy, security and integrity of our information, systems, and networks. Among other things, the program includes controls designed to limit and monitor access to authorized systems, networks, and data, prevent inappropriate access or modification, and monitor for threats or vulnerability.

Employees

At December 31, 2019, we employed 685 full-time equivalent employees, including 451 in research, product development and engineering, 61 in sales and marketing, 64 in general and administrative management and 109 in manufacturing engineering and operations. We consider relations with our employees to be good and have never experienced a work stoppage. None of our employees are either represented by a labor union or subject to a collective bargaining agreement, except for certain employees in Argentina.

Other

We were incorporated in Delaware in November 2000 as TCom Communications, Inc. and changed our name to Inphi Corporation in February 2001. Our principal executive offices are located at 2953 Bunker Hill Lane, Suite 300, Santa Clara, California 95054. Our telephone number at that location is (408) 217-7300. Our website address is www.inphi.com. Information on our website is not part of this report and should not be relied upon in determining whether to make an investment decision. The inclusion of our website address in this report does not include or incorporate by reference into this report any information on our website.

We electronically file our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the Exchange Act) with the Securities and Exchange Commission (SEC). The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The address of that site is <http://www.sec.gov>. You may obtain a free copy of our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and amendments to those reports with the SEC on our website.

ITEM 1A. RISK FACTORS

Risks Related to Our Business

Our revenue and operating results can fluctuate from period to period, which could cause our share price to fluctuate.

Our revenue and operating results have fluctuated in the past and may fluctuate from period to period in the future due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these fluctuations include the following factors, as well as other factors described elsewhere herein:

- the receipt, reduction or cancellation of orders by customers;
- fluctuations in the levels of component inventories held by our customers;
- the gain or loss of significant customers;
- changes in orders or purchasing patterns from one or more of our major customers;
- market acceptance of our products and our customers' products;
- our ability to develop, introduce and market new products and technologies on a timely basis;
- the timing and extent of product development costs;
- new product announcements and introductions by us or our competitors;
- incurrence of research and development and related new product expenditures;
- cyclical fluctuations in our markets;
- fluctuations in our manufacturing yields;
- significant warranty claims, including those not covered by our suppliers;
- changes in our product mix or customer mix;

- intellectual property disputes;
- the impact of the business acquisitions and dispositions we make; and
- loss of key personnel or the inability to attract qualified engineers.

As a result of these and other factors, the results of any prior quarterly or annual periods should not be relied upon as indications of our future revenue or operating performance. Fluctuations in our revenue and operating results could cause our share price to decline.

We incurred net losses in the past. We may incur net losses in the future.

As of December 31, 2019, we had an accumulated deficit of \$242.8 million. We have incurred net losses in the past and may incur net losses in the future. We generated a net loss of \$72.9 million, \$95.8 million and \$74.9 million for the years ended December 31, 2019, 2018 and 2017, respectively.

We depend on a limited number of customers for a substantial portion of our revenue, and the loss of, or a significant reduction in sales to, one or more of our major customers could negatively impact our revenue and operating results. In addition, if we offer more favorable prices to attract or retain customers, our average selling prices and gross margins would decline.

In the year ended December 31, 2019, we believe that sales to Microsoft and Huawei, directly and indirectly, through subcontractors, accounted for approximately 14% and 11% of our total revenue, respectively, and that our 10 largest direct customers collectively accounted for approximately 70% of our total revenue. We sell products to Fabrinet, a subcontractor who sells to various end customers. Included in the 10 largest direct customers are sales to Fabrinet, which accounted for approximately 11% of our total revenue for the year ended December 31, 2019. We believe, in the aggregate, sales to Cisco, including its subcontractors was significant but less than 10% of our total revenue for the year ended December 31, 2019. In the year ended December 31, 2018, we believe that sales to Microsoft, Huawei, and Cisco, directly and indirectly, through subcontractors, accounted for approximately 18%, 14% and 11% of our total revenue, respectively, and that our 10 largest direct customers collectively accounted for approximately 74% of our total revenue. We sell products to Cyberlink, a distributor who sells to various end customers. Included in the 10 largest direct customers are sales to Cyberlink which accounted for approximately 11% of our total revenue for the year ended December 31, 2018. In the year ended December 31, 2017, we believe that sales to Microsoft, Huawei, and Cisco, directly and indirectly, through subcontractors, accounted for approximately 17%, 14%, and 11% of our total revenue, respectively and that our 10 largest direct customers collectively accounted for approximately 70% of our total revenue. No other single customer directly or indirectly accounted for more than 10% of our total revenue in 2019, 2018 or 2017. We believe our operating results for the foreseeable future will continue to depend on sales to a relatively small number of customers. In the future, these customers may decide not to purchase our products at all, may purchase fewer products than they did in the past or may alter their purchasing patterns. Further, the amount of revenue attributable to any single customer or our customer concentration generally, may fluctuate in any given period.

In addition, our relationships with some customers may deter other potential customers who compete with these customers from buying our products. To attract new customers or retain existing customers, we may offer these customers favorable prices on our products. In that event, our average selling prices and gross margins would decline. The loss of a key customer, a reduction in sales to any key customer or our inability to attract new significant customers could negatively impact our revenue and materially and adversely affect our results of operations.

In January 2019, the U.S. Department of Justice indicted Huawei, certain of its subsidiaries and its chief financial officer, for theft of trade secrets, financial fraud, obstruction of justice and other charges. In May 2019, the U.S. Department of Commerce added Huawei and certain of its non-U.S. affiliates to the Entity List, imposing U.S. export license requirements for exports or re-exports to listed entities of all items subject to the Export Administration Regulations (EAR). In August 2019, additional Huawei non-U.S. affiliates were added to the Entity List. In conjunction with the initial May 2019 Entity List designation, the U.S. Department of Commerce issued a Temporary General License authorizing specific, limited transactions involving the export, reexport, and transfer of items to Huawei and certain of its affiliates. This Temporary General License was most recently renewed on February 13, 2020. We are currently unable to predict the outcome of this matter and therefore, cannot determine the likelihood of its impact on our business. However, due to the volume of our sales, directly and indirectly, to Huawei, our business, financial condition and results of operations could be materially and adversely affected pending and following the outcome of this matter and/or other related discussions between the governments of China and the United States of America.

We do not have long-term purchase commitments from our customers and if our customers cancel or change their purchase commitments, our revenue and operating results could suffer.

Substantially all of our sales to date have been made on a purchase order basis. We do not have any long-term commitments with any of our customers. As a result, our customers may cancel, change or delay product purchase commitments with little or no notice to us and without penalty. This in turn could cause our revenue to decline and materially and adversely affect our results of operations.

We may face claims of intellectual property infringement, which could be time-consuming, costly to defend or settle and result in the loss of significant rights and which could harm our relationships with our customers and distributors.

The semiconductor industry is characterized by companies that hold patents and other intellectual property rights and that vigorously pursue, protect and enforce intellectual property rights. From time to time, third parties may assert against us and our customers and distributors their patent and other intellectual property rights to technologies that are important to our business.

Claims that our products, processes or technology infringe third-party intellectual property rights, regardless of their merit or resolution, could be costly to defend or settle and could divert the efforts and attention of our management and technical personnel. For example, Netlist, Inc. filed a suit against us in the United States District Court, Central District of California, in September 2009, alleging that our iMB™ and certain other memory module components infringe three of Netlist's patents. This litigation is ongoing.

Infringement claims also could harm our relationships with our customers or distributors and might deter future customers from doing business with us. We do not know whether we will prevail in these proceedings given the complex technical issues and inherent uncertainties in intellectual property litigation. If any pending or future proceedings result in an adverse outcome, we could be required to:

- cease the manufacture, use or sale of the infringing products, processes or technology;
- pay substantial damages for infringement;
- expend significant resources to develop non-infringing products, processes or technology, which may not be successful;
- license technology from the third-party claiming infringement, which license may not be available on commercially reasonable terms, or at all;
- cross-license our technology to a competitor to resolve an infringement claim, which could weaken our ability to compete with that competitor; or
- pay substantial damages to our customers or end-users to discontinue their use of or to replace infringing technology sold to them with non-infringing technology, if available.

Any of the foregoing results could have a material adverse effect on our business, financial condition and results of operations.

Winning business is subject to lengthy competitive selection processes that require us to incur significant expenditures prior to generating any revenue or without any guarantee of any revenue related to this business. Even if we begin a product design, a customer may decide to cancel or change its product plans, which could cause us to generate no revenue from a product. If we fail to generate revenue after incurring substantial expenses to develop our products, our business and operating results would suffer.

We are focused on winning more competitive bid processes, known as "design wins," that enable us to sell our high-speed analog and mixed signal semiconductor solutions for use in our customers' products. These selection processes typically are lengthy and can require us to incur significant design and development expenditures and dedicate scarce engineering resources in pursuit of a single customer opportunity. We may not win the competitive selection process and may never generate any revenue despite incurring significant design and development expenditures. Failure to obtain a design win could prevent us from offering an entire generation of a product. This could cause us to lose revenue and require us to write-off obsolete inventory, and could weaken our position in future competitive selection processes. Even after securing a design win, we may experience delays in generating revenue from our products as a result of the lengthy development cycle typically required.

Our customers generally take a considerable amount of time to evaluate our products. Our design cycle from initial engagement to volume shipment is typically two to three years.

The delays inherent in these lengthy sales cycles increase the risk that a customer will decide to cancel, curtail, reduce or delay its product plans or adopt a competing design from one of our competitors, causing us to lose anticipated revenue. In addition, any delay or cancellation of a customer's plans could materially and adversely affect our financial results, as we may have incurred significant expense without generating any revenue. Finally, our customers' failure to successfully market and sell their products could reduce demand for our products and materially and adversely affect our business, financial condition and results of operations. If we were unable to generate revenue after incurring substantial expenses to develop any of our products, our business would suffer.

Our customers require our products and our third-party contractors to undergo a lengthy and expensive qualification process which does not assure product sales. If we are unsuccessful or delayed in qualifying any of our products with a customer, our business and operating results would suffer.

Prior to purchasing our products, our customers require that both our products and our third-party contractors undergo extensive qualification processes, which involve testing of our products in the customers' systems, as well as testing for reliability. This qualification process may continue for several months. However, qualification of a product by a customer does not assure any sales of the product to that customer. Even after successful qualification and sales of a product to a customer, a subsequent revision in our third party contractors' manufacturing process or our selection of a new supplier may require a new qualification process with our customers, which may result in delays and in our holding excess or obsolete inventory. After our products are qualified, it can take several months or more before the customer commences volume production of components or systems that incorporate our products. Despite these uncertainties, we devote substantial resources, including design, engineering, sales, marketing and management efforts, to qualify our products with customers in anticipation of sales. If we are unsuccessful or delayed in qualifying any of our products with a customer, sales of those products to the customer may be precluded or delayed, which may impede our growth and cause our business to suffer.

The complexity of our products could result in undetected defects and we may be subject to warranty claims and product liability, which could result in a decrease in customers and revenue, unexpected expenses and loss of market share. In addition, our product liability insurance may not adequately cover our costs arising from product defects or otherwise.

Our products are sold as components or as modules for use in larger electronic equipment sold by our customers. A product usually goes through an intense qualification and testing period performed by our customers before being used in production. We primarily outsource our product testing to third parties and also perform some testing in our Irvine and Westlake Village, California facilities. We inspect and test parts, or have them inspected and tested in order to screen out parts that may be weak or potentially suffer a defect incurred through the manufacturing process. From time to time, we are subject to warranty or product liability claims that may require us to make significant expenditures to defend these claims or pay damage awards.

Generally, our agreements seek to limit our liability to the replacement of the part or to the revenue received for the product, but these limitations on liability may not be effective or sufficient in scope in all cases. If a customer's equipment fails in use, the customer may incur significant monetary damages including an equipment recall or associated replacement expenses, as well as lost revenue. The customer may claim that a defect in our product caused the equipment failure and assert a claim against us to recover monetary damages. The process of identifying a defective or potentially defective product in systems that have been widely distributed may be lengthy and require significant resources. We may test the affected product to determine the root cause of the problem and to determine appropriate solutions. We may find an appropriate solution or a temporary fix while a permanent solution is being determined. If we are unable to determine the root cause, find an appropriate solution or offer a temporary fix, we may delay shipment to customers. As a result, we may incur significant replacement costs, customers may bring contract damage claims and our reputation may be harmed. In certain situations, circumstances might warrant that we consider incurring the costs or expense related to a recall of one of our products in order to avoid the potential claims that may be raised should the customer reasonably rely upon our product only to suffer a failure due to a design or manufacturing process defect. Defects in our products could harm our relationships with our customers and damage our reputation. Customers may be reluctant to buy our products, which could harm our ability to retain existing customers and attract new customers and our financial results. In addition, the cost of defending these claims and satisfying any arbitration award or judicial judgment with respect to these claims could harm our business prospects and financial condition. Although we carry product liability insurance, this insurance may not adequately cover our costs arising from defects in our products or otherwise.

We rely on our relationships with industry and technology leaders to enhance our product offerings and our inability to continue to develop or maintain such relationships in the future would harm our ability to remain competitive.

We develop many of our semiconductor products for applications in systems that are driven by industry and technology leaders in the communications market. We also work with OEMs, system manufacturers and standards bodies to define industry conventions and standards within our target markets. We believe these relationships enhance our ability to achieve market acceptance and widespread adoption of our products. If we are unable to continue to develop or maintain these relationships, our semiconductor solutions would become less desirable to our customers, our sales would suffer and our competitive position could be harmed.

If we fail to accurately anticipate and respond to market trends or fail to develop and introduce new or enhanced products to address these trends on a timely basis, our ability to attract and retain customers could be impaired and our competitive position could be harmed.

We operate in industries characterized by rapidly changing technologies and industry standards as well as technological obsolescence. We have developed products that may have long product life cycles of 10 years or more. We believe that our future success depends on our ability to develop and introduce new technologies and products that generate new sources of revenue to replace, or build upon, existing product revenue streams that may be dependent upon limited product life cycles. If we are not able to repeatedly introduce, in successive years, new products that ship in volume, our revenue will likely not grow and may decline significantly and rapidly. For example, we introduced ColorZ® in 2016 and began to ship in commercial volume in 2017. Sales of ColorZ® comprised 15%, 18% and 17% of our total revenue in 2019, 2018 and 2017, respectively. In 2012, we introduced and began to ship in commercial volume a dual, differential input linear transimpedance/variable-gain amplifier that we identify as product number IN3250TA-SO2D. Sales of IN3250TA-SO2D product comprised 10% of our total revenue in 2017. There were no other products that generated more than 10% of our total revenue in 2019, 2018 or 2017.

The IN3250TA-SO2D product matured in 2017 and as a result, sales of these products declined and were supplanted in part by newer parts which we developed. This underscores the importance of the need for us to continually develop and introduce new products to diversify our revenue base as well as generate new revenue to replace and build upon the success of previously introduced products which may be rapidly maturing.

To compete successfully, we must design, develop, market and sell new or enhanced products that provide increasingly higher levels of performance and reliability while meeting the cost expectations of our customers. The introduction of new products by our competitors, the delay or cancellation of a platform for which any of our semiconductor solutions are designed, the market acceptance of products based on new or alternative technologies or the emergence of new industry standards could render our existing or future products uncompetitive from a pricing standpoint, obsolete and otherwise unmarketable. Our failure to anticipate or timely develop new or enhanced products or technologies in response to technological shifts could result in decreased revenue and our competitors winning design wins. In particular, we may experience difficulties with product design, manufacturing, marketing or certification that could delay or prevent our development, introduction or marketing of new or enhanced products. Although we believe our products are fully compliant with applicable industry standards, proprietary enhancements may not in the future result in full conformance with existing industry standards under all circumstances. Due to the interdependence of various components in the systems within which our products and the products of our competitors operate, customers are unlikely to change to another design, once adopted, until the next generation of a technology. As a result, if we fail to introduce new or enhanced products that meet the needs of our customers or penetrate new markets in a timely fashion, and our designs do not gain acceptance, we will lose market share and our competitive position, very likely on an extended basis, and our operating results will be adversely affected.

If sufficient market demand for 100G/200G/400G solutions does not develop or develops more slowly than expected, or if we fail to accurately predict market requirements or market demand for 100G/200G/400G solutions, our business, competitive position and operating results would suffer.

We are currently investing significant resources to develop semiconductor solutions supporting 100G/200G/400G data transmission rates in order to increase the number of such solutions in our product line. If we fail to accurately predict market requirements or market demand for 100G/200G/400G semiconductor solutions, or if our 100G/200G/400G semiconductor solutions are not successfully developed or competitive in the industry, our business will suffer. If 100G/200G/400G networks are deployed to a lesser extent or more slowly than we currently anticipate, we may not realize any benefits from our investment. As a result, our business, competitive position, market share and operating results would suffer.

Our target markets may not grow or develop as we currently expect and are subject to market risks including new competition, any of which could materially harm our business, revenue and operating results.

To date, a substantial portion of our revenue has been attributable to demand for our products in the communications and cloud markets and the growth of these overall markets. These markets have fluctuated in size and growth in recent times. Our operating results are impacted by various trends in these markets. These trends include the deployment and broader market adoption of next generation technologies, such as 100G and 100Gbe CMOS CDR and SerDes, in data centers, communications and enterprise networks, timing of next generation network upgrades, the introduction and broader market adoption of next generation server platforms and the timing of enterprise upgrades. We are unable to predict the timing or direction of the development of these markets with any accuracy. In addition, because some of our products are not limited in the systems or geographic areas in which they may be deployed, we cannot always determine with accuracy how, where or into which applications our products are being deployed. If our target markets do not grow or develop in ways that we currently expect, demand for our semiconductor products may decrease and our business, revenue, and operating results could suffer.

We rely on a limited number of third parties to manufacture, assemble and test our products, and the failure to manage our relationships with our third-party contractors successfully could adversely affect our ability to market and sell our products and our reputation. Our revenue and operating results would suffer if these third parties fail to deliver products or components in a timely manner and at reasonable cost or if manufacturing capacity is reduced or eliminated as we may be unable to obtain alternative manufacturing capacity.

We operate an outsourced manufacturing business model. As a result, we rely on third-party foundry wafer fabrication and assembly and test capacity. We also perform testing in our Irvine and Westlake Village, California facilities. We generally use a single foundry for the production of each of our various semiconductors. Currently, our principal foundries are GlobalFoundries, TSMC, TowerJazz, and WIN Semiconductors. We also use third-party contract manufacturers for a significant majority of our assembly and test operations, including Kyocera, ASE, Giga Solution, ISE Labs, Presto, Tong Hsing, LuxNet and STATS ChipPAC.

Relying on third-party manufacturing, assembly and testing presents significant risks to us, including the following:

- failure by us, our customers or their end customers to qualify a selected supplier;
- capacity shortages during periods of high demand;
- reduced control over delivery schedules and quality;
- shortages of materials;
- misappropriation of our intellectual property;
- limited warranties on wafers or products supplied to us; and
- potential increases in prices.

The ability and willingness of our third-party contractors to perform is largely outside our control. If one or more of our contract manufacturers or other outsourcers fails to perform its obligations in a timely manner or at satisfactory quality levels, our ability to bring products to market and our reputation could suffer. For example, if that manufacturing capacity is reduced or eliminated at one or more facilities, including as a response to the recent worldwide decline in the semiconductor industry, or any of those facilities are unable to keep pace with the growth of our business, we could have difficulties fulfilling our customer orders and our revenue could decline. In addition, if these third parties fail to deliver quality products and components on time and at reasonable prices, we could have difficulties fulfilling our customer orders, our revenue could decline and our business, financial condition and results of operations would be adversely affected.

Additionally, as many of our fabrication and assembly and test contractors are located in the Pacific Rim region, principally in Taiwan, our manufacturing capacity may be similarly reduced or eliminated due to natural disasters, including earthquakes, political unrest, war, labor strikes, work stoppages or public health crises. This could cause significant delays in shipments of our products until we are able to shift our manufacturing, assembly or testing from the affected contractor to another third-party vendor. There can be no assurance that alternative manufacturing capacity could be obtained on favorable terms, if at all.

Our costs may increase substantially if the wafer foundries that supply our products do not achieve satisfactory product yields or quality.

The wafer fabrication process is an extremely complicated process where the slightest changes in the design, specifications or materials can result in material decreases in manufacturing yields or even the suspension of production. From time to time, our third-party wafer foundries have experienced, and are likely to experience, manufacturing defects and reduced manufacturing yields related to errors or problems in their manufacturing processes or the interrelationship of their processes with our designs. In some cases, our third-party wafer foundries may not be able to detect these defects early in the fabrication process or determine the cause of such defects in a timely manner. We may incur substantial research and development expense for prototype or development stage products as we qualify the products for production.

Generally, in pricing our semiconductors, we assume that manufacturing yields will continue to increase, even as the complexity of our semiconductors increases. Once our semiconductors are initially qualified with our third-party wafer foundries, minimum acceptable yields are established. We are responsible for the costs of the wafers if the actual yield is above the minimum. If actual yields are below the minimum we are not required to purchase the wafers. The minimum acceptable yields for our new products are generally lower at first and increase as we achieve full production. Unacceptably low product yields or other product manufacturing problems could substantially increase the overall production time and costs and adversely impact our operating results on sales of our products. Product yield losses will increase our costs and reduce our gross margin. In addition to significantly harming our operating results and cash flow, poor yields may delay shipment of our products and harm our relationships with existing and potential customers.

We do not have any long-term supply contracts with our contract manufacturers or suppliers, and any disruption in our supply of products or materials could have a material adverse effect on our business, revenue and operating results.

We currently do not have long-term supply contracts with any of our third-party contract manufacturers. We make substantially all of our purchases on a purchase order basis, and our contract manufacturers are not required to supply us products for any specific period or in any specific quantity. We expect that it would take approximately nine to 12 months to transition from our current foundry or assembly services to new providers. Such a transition would likely require a qualification process by our customers or their end customers. We generally place orders for products with some of our suppliers several months prior to the anticipated delivery date, with order volumes based on our forecasts of demand from our customers. Accordingly, if we inaccurately forecast demand for our products, we may be unable to obtain adequate and cost-effective foundry or assembly capacity from our third-party contractors to meet our customers' delivery requirements, or we may accumulate excess inventories. On occasion, we have been unable to adequately respond to unexpected increases in customer purchase orders and therefore, were unable to benefit from this incremental demand. None of our third-party contract manufacturers have provided any assurance to us that adequate capacity will be available to us within the time required to meet additional demand for our products.

Our foundry vendors and assembly and test vendors may allocate capacity to the production of other companies' products while reducing deliveries to us on short notice. In particular, other customers that are larger and better financed than us or that have long-term agreements with our foundry vendor or assembly and test vendors may cause our foundry vendor or assembly and test vendors to reallocate capacity to those customers, decreasing the capacity available to us. We do not have long-term supply contracts with our third-party contract manufacturers and if we enter into costly arrangements with suppliers that include nonrefundable deposits or loans in exchange for capacity commitments, commitments to purchase specified quantities over extended periods or investment in a foundry, our operating results could be harmed. We may not be able to make any such arrangement in a timely fashion or at all, and any arrangements may be costly, reduce our financial flexibility, and not be on terms favorable to us. Moreover, if we are able to secure foundry capacity, we may be obligated to use all of that capacity or incur penalties. These penalties may be expensive and could harm our financial results. To date, we have not entered into such arrangements with our suppliers. If we need another foundry or assembly and test subcontractor because of increased demand, or if we are unable to obtain timely and adequate deliveries from our providers, we might not be able to cost effectively and quickly retain other vendors to satisfy our requirements.

Many of our customers depend on us as the sole source for a number of our products. If we are unable to deliver these products as the sole supplier or as one of a limited number of suppliers, our relationships with these customers and our business would suffer.

A number of our customers do not have alternative sources for our semiconductor solutions and depend on us as the sole supplier or as one of a limited number of suppliers for these products. Since we outsource our manufacturing to third-party contractors, our ability to deliver our products is substantially dependent on the ability and willingness of our third-party contractors to perform, which is largely outside our control. Failure to deliver our products in sufficient quantities or at all to our customers that depend on us as a sole supplier or as one of a limited number of suppliers may be detrimental to their

business and, as a result, our relationship with such customer would be negatively impacted. If we are unable to maintain our relationships with these customers after such failure, our business and financial results may be harmed.

If we are unable to attract, train and retain qualified personnel, particularly our design and technical personnel, we may not be able to execute our business strategy effectively.

Our future success depends on our ability to attract and retain qualified personnel, including our management, sales and marketing, and finance, and particularly our design and technical personnel. We do not know whether we will be able to retain all of these personnel as we continue to pursue our business strategy. Historically, we have encountered difficulties in hiring qualified engineers because there is a limited pool of engineers with the expertise required in our field, especially in the San Francisco Bay Area where our headquarters are located. Competition for these personnel is intense in the semiconductor industry. As the source of our technological and product innovations, our design and technical personnel represent a significant asset. The loss of the services of one or more of our key employees, especially our key design and technical personnel, or our inability to attract and retain qualified design and technical personnel, could harm our business, financial condition and results of operations.

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

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

We face intense competition and expect competition to increase in the future. If we fail to compete effectively, it could have an adverse effect on our revenue, revenue growth rate, if any, and market share.

The global semiconductor market in general, and the communications and computing markets in particular, are highly competitive. We compete or plan to compete in different target markets to various degrees on the basis of a number of principal competitive factors, including product performance, power budget, features and functionality, customer relationships, size, ease of system design, product roadmap, reputation and reliability, customer support and price. We expect competition to increase and intensify as more and larger semiconductor companies enter our markets. Increased competition could result in price pressure, reduced profitability and loss of market share, any of which could materially and adversely affect our business, revenue and operating results.

Currently, our competitors range from large, international companies offering a wide range of semiconductor products to smaller companies specializing in narrow markets. Our primary competitors include Acacia Communications, Inc., Broadcom Ltd., Integrated Device Technology, Inc., M/A-COM Technology Solutions Inc., MaxLinear, Inc., NTT Electronics Corporation, Qorvo, Inc. and Semtech Corp. as well as other analog and mixed signal processing companies. We expect competition in the markets in which we participate to increase in the future as existing competitors improve or expand their product offerings.

Our ability to compete successfully depends on elements both within and outside of our control, including industry and general economic trends. During past periods of downturns in our industry, competition in the markets in which we operate intensified as our customers reduced their purchase orders. Many of our competitors have substantially greater financial and other resources with which to withstand similar adverse economic or market conditions in the future. These developments may materially and adversely affect our current and future target markets and our ability to compete successfully in those markets.

We use a significant amount of intellectual property in our business. Monitoring unauthorized use of our intellectual property can be difficult and costly and if we are unable to protect our intellectual property, our business could be adversely affected.

Our success depends in part upon our ability to protect our intellectual property. To accomplish this, we rely on a combination of intellectual property rights, including patents, copyrights, trademarks and trade secrets in the United States and in selected foreign countries where we believe filing for such protection is appropriate. Effective protection of our

intellectual property rights may be unavailable, limited or not applied for in some countries. Some of our products and technologies are not covered by any patent or patent application, as we do not believe patent protection of these products and technologies is critical to our business strategy at this time. Failure to timely seek patent protection on products or technologies generally precludes us from seeking future patent protection on these products or technologies. We cannot guarantee that:

- any of our present or future patents or patent claims will not lapse or be invalidated, circumvented, challenged or abandoned;
- our intellectual property rights will provide competitive advantages to us;
- our ability to assert our intellectual property rights against potential competitors or to settle current or future disputes will not be limited by our agreements with third parties;
- any of our pending or future patent applications will be issued or have the coverage originally sought;
- our intellectual property rights will be enforced in jurisdictions where competition may be intense or where legal protection may be weak;
- any of the trademarks, copyrights, trade secrets or other intellectual property rights that we presently employ in our business will not lapse or be invalidated, circumvented, challenged or abandoned; or
- we will not lose the ability to assert our intellectual property rights against or to license our technology to others and collect royalties or other payments.

In addition, our competitors or others may design around our protected patents or technologies. Effective intellectual property protection may be unavailable or more limited in one or more relevant jurisdictions relative to those protections available in the United States, or may not be applied for in one or more relevant jurisdictions. If we pursue litigation to assert our intellectual property rights, an adverse decision in any of these legal actions could limit our ability to assert our intellectual property rights, limit the value of our technology or otherwise negatively impact our business, financial condition and results of operations.

Monitoring unauthorized use of our intellectual property is difficult and costly. Unauthorized use of our intellectual property may have occurred or may occur in the future. Although we have taken steps to minimize the risk of this occurring, any such failure to identify unauthorized use and otherwise adequately protect our intellectual property would adversely affect our business. Moreover, if we are required to commence litigation, whether as a plaintiff or defendant, not only would this be time-consuming, but we would also be forced to incur significant costs and divert our attention and efforts of our employees, which could, in turn, result in lower revenue and higher expenses.

We also rely on contractual protections with our customers, suppliers, distributors, employees and consultants, and we implement security measures designed to protect our trade secrets. We cannot assure you that these contractual protections and security measures will not be breached, that we will have adequate remedies for any such breach or that our suppliers, employees or consultants will not assert rights to intellectual property arising out of such contracts.

In addition, we have a number of third-party patent and intellectual property license agreements. Some of these license agreements require us to make one-time payments or ongoing royalty payments. We cannot guarantee that the third-party patents and technology we license will not be licensed to our competitors or others in the semiconductor industry. In the future, we may need to obtain additional licenses, renew existing license agreements or otherwise replace existing technology. We are unable to predict whether these license agreements can be obtained or renewed or the technology can be replaced on acceptable terms, or at all.

Average selling prices of our products generally decrease over time, which could negatively impact our revenue and gross margins.

Our operating results may be impacted by a decline in the average selling prices of our semiconductors. If competition increases in our target markets, we may need to reduce the average unit price of our products in anticipation of competitive pricing pressures, new product introductions by us or our competitors and for other reasons. With respect to our new product offerings following our acquisition of eSilicon, we expect to offer higher volumes of products that have lower margins. If we are unable to offset any reductions in our average selling prices by increasing our sales volumes or introducing new products with higher margins, our revenue and gross margins will suffer. To maintain our revenue and gross margins, we must develop

and introduce new products and product enhancements on a timely basis and continually reduce our costs as well as our customers' costs. Failure to do so would cause our revenue and gross margins to decline.

We are subject to order and shipment uncertainties, and differences between our estimates of customer demand and product mix and our actual results could negatively affect our inventory levels, sales and operating results.

Our revenue is generated on the basis of purchase orders with our customers rather than long-term purchase commitments. In addition, our customers can cancel purchase orders or defer the shipments of our products under certain circumstances. Our products are manufactured using semiconductor foundries according to our estimates of customer demand, which requires us to make separate demand forecast assumptions for every customer, each of which may introduce significant variability into our aggregate estimates. It is difficult for us to forecast the demand for our products, in part because of the complex supply chain between us and the end-user markets that incorporate our products. Due to our lengthy product development cycle, it is critical for us to anticipate changes in demand for our various product features and the applications they serve to allow sufficient time for product development and design. We have limited visibility into future customer demand and the product mix that our customers will require, which could adversely affect our revenue forecasts and operating margins. Moreover, because some of our target markets are relatively new, many of our customers have difficulty accurately forecasting their product requirements and estimating the timing of their new product introductions, which ultimately affects their demand for our products. Our failure to accurately forecast demand can lead to product shortages that can impede production by our customers and harm our customer relationships. Conversely, our failure to forecast declining demand or shifts in product mix can result in excess or obsolete inventory. For example, some of our customers may cancel purchase orders or delay the shipment of their products that incorporate our products as a result of component shortages they may experience due to earthquakes and tsunamis in Japan or Taiwan, or likewise with respect to flooding in Thailand, which may result in excess or obsolete inventory and impact our sales and operating results. In addition, the rapid pace of innovation in our industry could also render significant portions of our inventory obsolete. Excess or obsolete inventory levels could result in unexpected expenses or increases in our reserves that could adversely affect our business, operating results and financial condition. In contrast, if we were to underestimate customer demand or if sufficient manufacturing capacity were unavailable, we could forego revenue opportunities, potentially lose market share and damage our customer relationships. In addition, any significant future cancellations or deferrals of product orders or the return of previously sold products due to manufacturing defects could materially and adversely impact our profit margins, increase our write-offs due to product obsolescence and restrict our ability to fund our operations.

We rely on third-party sales representatives and distributors to assist in selling our products. If we fail to retain or find additional sales representatives and distributors, or if any of these parties fail to perform as expected, it could reduce our future sales.

For the year ended December 31, 2019, we derived approximately 87% of our total revenue from sales by our direct sales team and third-party sales representatives and 13% of our sales were made through third-party distributors. For the year ended December 31, 2018, we derived approximately 84% of our total revenue from sales by our direct sales team and third-party sales representatives and 16% of our sales were made through third-party distributors. For the year ended December 31, 2017, we derived approximately 82% of our total revenue from sales by our direct sales team and third-party sales representatives and 18% of our sales were made through third-party distributors. We are unable to predict the extent to which these third-party sales representatives and distributors will be successful in marketing and selling our products. Moreover, many of these third-party sales representatives and distributors also market and sell competing products, which may affect the extent to which they promote our products. Even where our relationships are formalized in contracts, our third-party sales representatives and distributors often have the right to terminate their relationships with us at any time. Our future performance will also depend, in part, on our ability to attract additional third-party sales representatives and distributors who will be able to market and support our products effectively, especially in markets in which we have not previously sold our products. If we cannot retain our current distributors or find additional or replacement third-party sales representatives and distributors, our business, financial condition and results of operations could be harmed. Additionally, if we terminate our relationship with a distributor, we may be obligated to repurchase unsold products. We record a reserve for estimated returns and price credits. If actual returns and credits exceed our estimates, our operating results could be harmed.

The facilities of our third-party contractors and distributors and a number of our facilities are located in regions that are subject to earthquakes and other natural disasters. Any catastrophic loss to any of these facilities would likely disrupt our operations and result in significant expenses and could adversely affect our business.

The facilities of our third-party contractors and distributors are subject to risk of catastrophic loss due to fire, flood or other natural or man-made disasters. A number of our facilities and those of our contract manufacturers are located in areas with above average seismic activity and also subject to typhoons and other Pacific storms. Several foundries that manufacture our wafers are located in Taiwan, Japan and California, and a majority of our third-party contractors who assemble and test

our products are located in Asia. In addition, our headquarters are located in California. The risk of an earthquake in the Pacific Rim region or California is significant due to the proximity of major earthquake fault lines. Any catastrophic loss to any of these facilities would likely disrupt our operations, delay production, shipments and revenue and result in significant expenses to repair or replace the facility. In particular, any catastrophic loss at our California locations would materially and adversely affect our business.

We rely on third-party technologies for the development of our products and our inability to use such technologies in the future would harm our ability to remain competitive.

We rely on third parties for technologies that are integrated into our products, such as wafer fabrication and assembly and test technologies used by our contract manufacturers, as well as licensed architecture technologies. If we are unable to continue to use or license these technologies on reasonable terms, or if these technologies fail to operate properly, we may not be able to secure alternatives in a timely manner or at all, and our ability to remain competitive would be harmed. In addition, if we are unable to successfully license technology from third parties to develop future products, we may not be able to develop such products in a timely manner or at all.

Our business would be adversely affected by the departure of existing members of our senior management team and other key personnel.

Our success depends, in large part, on the continued contributions of our senior management team, in particular, the services of certain key personnel. Changes in our management team could negatively affect our operations and our relationships with our customers, employees and market leaders. In addition, we have not entered into non-compete agreements with members of our senior management team. The loss of any member of our senior management team or key personnel could harm our ability to implement our business strategy and respond to the rapidly changing market conditions in which we operate.

We may acquire businesses, enter into licensing arrangements or make investments in other companies or technologies that disrupt our business, are difficult to integrate, impair our operating results, dilute our stockholders' ownership, increase our debt, divert management resources or cause us to incur significant expense.

As part of our business strategy, we have pursued and are likely to continue to pursue in the future acquisitions of businesses and assets, as well as technology licensing arrangements that we believe will complement our business, semiconductor solutions or technologies. For example, we acquired eSilicon in January 2020 to accelerate our roadmap in developing electro-optics solutions for cloud and telecommunications customers. We also acquired ClariPhy Communications, Inc. (ClariPhy) in December 2016 to help expand our optical networking platform portfolio. We also may pursue strategic alliances that leverage our core technology and industry experience to expand our product offerings or distribution, or make investments in other companies. Any acquisition involves a number of risks, many of which could harm our business, including:

- difficulty in integrating the operations, technologies, products, existing contracts, accounting and personnel of the acquired company or business;
- realizing the anticipated benefits of any acquisition;
- difficulty in transitioning and supporting customers, if any, of the acquired company;
- difficulty in transitioning and collaborating with suppliers, if any, of the acquired company;
- diversion of financial and management resources from existing operations;
- the risk that the price we pay or other resources that we devote may exceed the value we realize, or the value we could have realized if we had allocated the purchase price or other resources to another opportunity;
- potential loss of key employees, customers and strategic alliances from either our current business or the acquired company's business;
- inability to successfully bring newly acquired products to market or achieve design wins with such products;
- fluctuations in industry trends that change the demand or purchasing volume of newly acquired products;

- assumption of unanticipated problems or latent liabilities, such as problems with the quality of the acquired products;
- inability to generate sufficient revenue to offset acquisition costs;
- dilutive effect on our stock as a result of any equity-based acquisitions;
- inability to successfully complete transactions with a suitable acquisition candidate; and
- in the event of international acquisitions, risks associated with accounting and business practices that are different from applicable U.S. practices and requirements.

Acquisitions also frequently result in the recording of goodwill and other intangible assets that are subject to potential impairments, which could harm our financial results. For example, during the year ended December 31, 2017, we abandoned a project related to certain developed technology and in-process research and development from the ClariPhy acquisition and recorded an impairment charge of \$47.0 million. The abandonment of the project was primarily related to change in product roadmap that occurred during the year ended December 31, 2017. If we fail to properly evaluate acquisitions or investments, it may impair our ability to achieve the anticipated benefits of any such acquisitions or investments, and we may incur costs in excess of what we anticipate. The failure to successfully evaluate and execute acquisitions or investments or otherwise adequately address these risks could materially harm our business and financial results.

To finance any acquisitions or investments, we may choose to issue shares of our common stock or convertible debt as consideration, which could dilute the ownership of our stockholders. If the price of our common stock is low or volatile, we may not be able to acquire other companies for stock. In addition, newly-issued securities may have rights, preferences or privileges senior to those of existing stockholders. If we raise additional funds by obtaining loans from third parties, the terms of those financing arrangements may include negative covenants or other restrictions on our business that could impair our operating flexibility, and would also require us to incur interest expense. Additional funds may not be available on terms that are favorable to us, or at all.

The failure to successfully evaluate and execute acquisitions or investments or otherwise adequately address these risks could materially harm our business and financial results. We may not achieve all of the anticipated benefits of any of our acquisitions, including our acquisition of eSilicon, due to a number of factors including: unanticipated costs or liabilities associated with the acquisition, incurrence of acquisition-related costs, harm to our relationships with existing customers as a result of the acquisition, harm to our brands and reputation, the loss of key employees of the acquired company, significant impairments of anticipated goodwill and other intangible assets and the use of resources that are needed in other parts of our business.

We may not realize the anticipated benefits of our acquisitions, which in turn could harm our business and operating results.

We may not achieve all of the anticipated benefits of any of our acquisitions in a timely manner or at all, including our acquisition of eSilicon, due to a number of factors including: failure to successfully integrate the acquired business, the assumption of known and unknown costs or liabilities associated with the acquisitions, incurrence of acquisition-related costs, harm to our relationships with existing customers as a result of the acquisitions, harm to our brands and reputation, the loss of key employees of the acquired companies, negative market reaction thereto, inability to successfully extend and expand product offerings, significant impairments of anticipated goodwill and other intangible assets, the possibility that we paid more for the acquired companies than the value we will derive from the acquisitions, and the use of resources that are needed in other parts of our business.

If we are not able to successfully combine the business of eSilicon within the anticipated time frame, or at all, the anticipated cost savings and other benefits of the acquisition may not be realized fully or at all or may take longer to realize than expected, the combined businesses may not perform as expected and the value of the shares of our common stock may be adversely affected. In addition, if we are not able to realize higher volumes of sales for our eSilicon products which have lower margins, our revenue and gross margins will suffer.

Prior to the acquisition, we and eSilicon operated independently, and there can be no assurances that the businesses can be integrated successfully. It is possible that the integration process could result in the loss of our or eSilicon's key employees, the disruption of either or both company's ongoing businesses, higher than expected integration costs and an overall post-completion integration process that takes longer than originally anticipated. Specifically, issues that must be addressed to realize the anticipated benefits of the acquisition so the combined business performs as expected include, among other things:

- integrating the companies' technologies, products and services;
- identifying and eliminating redundant and underperforming operations and assets;
- harmonizing the companies' operating practices, employee development and compensation programs, internal controls and other policies, procedures and processes;
- addressing possible differences in business backgrounds, corporate cultures and management philosophies;
- consolidating the companies' corporate, administrative and information technology infrastructure;
- managing the movement of certain businesses and positions to different locations;
- maintaining existing agreements with customers and vendors and avoiding delays in entering into new agreements with prospective customers and vendors; and
- consolidating our and eSilicon's offices that are currently in or near the same location.

Lawsuits have been threatened and may be filed against us, eSilicon, their affiliates and their board of directors and executive officers challenging aspects of the merger. An adverse ruling in any such lawsuit may result in additional payments and costs.

We and eSilicon have received written communications from certain former stockholders of eSilicon demanding to inspect eSilicon's books and records and indicating that such stockholders will be seeking appraisal of shares they held in eSilicon. Certain of these former eSilicon stockholders also have stated that they may assert claims against eSilicon's directors and senior officers for alleged breaches of fiduciary duty and other violations in connection with the merger between eSilicon and our subsidiary. We are unaware of any petition for appraisal and/or lawsuit being filed by any former eSilicon stockholder.

We believe that the claims in such written communications are without merit, and plan to vigorously defend against lawsuits arising out of or relating to the merger agreement and/or the merger that may be filed in the future. However, any adverse ruling in such potential cases could result in additional payments. Even if the lawsuits are without merit, defending against these claims can result in substantial costs and divert management time and resources. An adverse judgment could result in monetary damages, which could have a negative impact on our liquidity and financial condition.

We may sell one or more of our product lines, from time to time, as a result of our evaluation of our products and markets, and any divestiture could adversely affect our continuing business and our expenses, revenues, results of operation, cash flows and financial position.

We periodically evaluate our various product lines and may, as a result, consider the divestiture of one or more of those product lines. For example, in August 2016, we sold our memory product business to Rambus Inc. for \$90 million in cash. Any divestiture could adversely affect our continuing business and expenses, revenues, results of operations, cash flows and financial position.

Divestitures of product lines have inherent risks, including the expense of selling the product line, the possibility that any anticipated sale will not occur, delays in closing any sale, the risk of lower-than-expected proceeds from the sale of the divested business, unexpected costs associated with the separation of the business to be sold from the seller's information technology and other operating systems, and potential post-closing claims for indemnification or breach of transition services obligations of the seller. Expected cost savings, which are offset by revenue losses from divested businesses, may also be difficult to achieve or maximize due to the seller's fixed cost structure, and a seller may experience varying success in reducing fixed costs or transferring liabilities previously associated with the divested business.

Our business is dependent on capital expenditures by service providers, and any downturn that they experience could negatively impact our business.

Our business depends on continued capital expenditures by communication service providers and is subject to the cyclical nature of such expenditures. Our communications semiconductor products are sold primarily to network equipment vendors that in turn sell their equipment to service providers. If the demand for our customers' products declines or fails to increase, as a result of lower capital expenditures by service providers or any other factors, demand for our products will be similarly affected. The global economic downturn caused a significant reduction in capital spending on communications network equipment. While we are beginning to see improvement, there are no guarantees that this growth will continue, which could result in market volatility or another downturn. If there is another downturn, our business, operating results and financial condition may be materially harmed.

Our high-speed interconnect and optical transport business has historically relied on a small number of key customers for a substantial portion of its revenue, and the loss of one or more of these key customers or the diminished demand for these products from one or more such key customers would significantly reduce our revenue and profits.

With respect to our high-speed interconnect and optical transport business, a small number of customers have historically accounted for a substantial portion of the revenues in any particular period. We anticipate that our relationships with these key customers will continue to be important to this business, and we expect that this customer concentration will increase in the future. We have no long-term volume purchase commitments from our key customers. These customers may decide not to purchase our products at all, may purchase fewer products than they did in the past or may otherwise alter their purchasing patterns. Reductions, delays and cancellations of orders from our key customers or the loss of one or more key customers would significantly reduce our revenue and profits.

The failure of our distributors to perform as expected could materially reduce our future revenue or negatively impact our reported financial results.

We relied on a number of distributors, in particular Cyberlink, Arrow Electronics, Inc. and Paltek Corporation, to help generate customer demand, provide technical support and other value-added services to its customers, fill customer orders and stock its products. These distributors do not sell those products exclusively, and to the extent they choose to emphasize a competitor's products over our products, our results of operations could be harmed. Our contracts with these distributors may be terminated by either party with notice. Our distributors are located all over the world, and are of various sizes and financial conditions. Lower sales, lower earnings, debt downgrades, the inability to access capital markets and higher interest rates could potentially affect our distributors' operations. Further, our distributors have contractual rights to return unsold inventory to us, and, if this were to happen, we could incur significant cost in finding alternative sales channels for these products or through write-offs. Any adverse condition experienced by our distributors could negatively impact their level of support for our products or the rate at which they make payments to us and, consequently, could harm our results of operations. We rely on accurate and timely sales reports from our distributors in order for our financial results to represent the actual sales that our distributors make for us in any given period. Any inaccuracies or delays in these reports could negatively affect our ability to produce accurate and timely financial reports and to recognize revenue. We also rely on distributors for sales forecasts, and any inaccuracies in such forecasts could impair the accuracy of our projections and planned operations.

Our portfolio of marketable securities is significant and subject to market, interest and credit risk that may reduce its value.

We maintain a significant portfolio of marketable securities. Changes in the value of this portfolio could adversely affect our earnings. In particular, the value of our investments may decline due to increases in interest rates, downgrades of money market funds, U.S. Treasuries, municipal bonds, corporate bonds, certificates of deposit, variable rate demand notes, commercial paper and asset-backed securities included in our portfolio, instability in the global financial markets that reduces the liquidity of securities included in our portfolio, declines in the value of collateral underlying the asset-backed securities included in our portfolio and other factors. Each of these events may cause us to record charges to reduce the carrying value of our investment portfolio or sell investments for less than our acquisition cost. Although we attempt to mitigate these risks by investing in high quality securities and continuously monitoring our portfolio's overall risk profile, the value of our investments may nevertheless decline.

Tax benefits that we receive may be terminated or reduced in the future, which would increase our costs.

We continue to expand our international presence to take advantage of the opportunity to recruit additional engineering design talent, as well as to more closely align our operations geographically with our customers and suppliers in Asia. In certain international jurisdictions, we have also entered into agreements with local governments to provide us with, among

other things, favorable local tax rates if certain minimum criteria are met. These agreements may require us to meet several requirements as to investment, headcount and activities to retain this status. We currently believe that we will be able to meet all the terms and conditions specified in these agreements. However, if adverse changes in the economy or changes in technology affect international demand for our products in an unforeseen manner or if we fail to otherwise meet the conditions of the local agreements, or if we fail to extend the favorable local tax rate, we may be subject to additional taxes, which in turn would increase our costs.

Changes in our effective tax rate may harm our results of operations. A number of factors may increase our future effective tax rates, including:

- the jurisdictions in which profits are determined to be earned and taxed;
- the resolution of issues arising from tax audits with various tax authorities;
- changes in the measurement of our deferred tax assets and liabilities and in deferred tax valuation allowances;
- changes in the value of assets or services transferred or provided from one jurisdiction to another;
- adjustments to income taxes upon finalization of various tax returns;
- increases in expenses not deductible for tax purposes, including write-offs of acquired in-process research and development and impairments of goodwill in connection with acquisitions;
- changes in available tax credits;
- effect of tax rate on accounting for acquisitions and dispositions; and
- changes in tax laws, or the interpretation of such tax laws, and changes in U.S. generally accepted accounting principles.

We are subject to regulatory compliance requirements, including Section 404 of the Sarbanes-Oxley Act of 2002, which are costly to comply with, and our failure to comply with these requirements could harm our business and operating results.

As a public company, we incur significant legal, accounting and other expenses related to compliance with laws such as Section 404 of the Sarbanes-Oxley Act of 2002. Compliance with Section 404 requires that our management report on, and our independent registered public accounting firm attest to, the effectiveness of our internal control over financial reporting in our annual reports on Form 10-K. Section 404 compliance has in the past diverted, and may continue to divert, internal resources, and require a significant amount of time and effort. If we fail to comply with Section 404, or if in the future our Chief Executive Officer, Chief Financial Officer or independent registered public accounting firm determines that our internal control over financial reporting is not effective, we could be subject to sanctions or investigations by the New York Stock Exchange, the SEC, or other regulatory authorities.

Furthermore, investor perceptions of us may suffer, and this could cause a decline in the market price of our stock. Irrespective of compliance with Section 404, any failure of our internal controls could have a material adverse effect on our stated results of operations and harm our reputation.

The conditional conversion feature of our convertible senior notes, if triggered, may adversely affect our financial condition and operating results.

In the event the conditional conversion feature of our convertible senior notes is triggered, holders of notes will be entitled to convert such notes at any time during specified periods at their option. If one or more holders elect to convert their notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock, thereby incurring share dilution (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the convertible notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

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

Under Accounting Standards Codification 470-20, Debt with Conversion and Other Options, which we refer to as ASC 470-20, an entity must separately account for the liability and equity components of the convertible debt instruments (such as our convertible notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer's economic interest cost. The effect of ASC 470-20 on the accounting for the convertible notes is that the equity component 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 would be treated as debt discount for purposes of accounting for the debt component of the convertible 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 convertible notes to their face amount over the term of the convertible notes. We will report lower net income in our financial results because ASC 470-20 will require interest to include both the current period's amortization of the debt discount and the instrument's non-convertible interest rate, which could adversely affect our reported or future financial results, the trading price of our common stock and the trading price of the convertible notes.

In addition, under certain circumstances, convertible debt instruments (such as our convertible notes) that may be settled entirely or partly in cash are currently accounted for utilizing the treasury stock method, the effect of which is that the shares issuable upon conversion of the convertible notes are not included in the calculation of diluted earnings per share except to the extent that the conversion value of the convertible 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 convertible notes, then our diluted earnings per share would be adversely affected.

We are leveraged financially, which could adversely affect our ability to adjust our business to respond to competitive pressures and to obtain sufficient funds to satisfy our future growth, business needs and development plans.

We have substantial existing indebtedness. For example, in September 2016 and December 2015, we issued \$287.5 million and \$230.0 million, respectively, in aggregate principal of convertible senior notes. The degree to which we are leveraged could have negative consequences, including, but not limited to, the following:

- we may be more vulnerable to economic downturns, less able to withstand competitive pressures and less flexible in responding to changing business and economic conditions;
- our ability to obtain additional financing in the future for working capital, capital expenditures, acquisitions, general corporate or other purposes may be limited;
- a substantial portion of our cash flows from operations in the future may be required for the payment of the principal amount of our existing indebtedness when it becomes due; and
- we may elect to make cash payments upon any conversion of the convertible notes, which would reduce our cash on hand.

Our ability to meet our payment obligations under our convertible notes depends on our ability to generate significant cash flow in the future. This, to some extent, is subject to general economic, financial, competitive, legislative, and regulatory factors as well as other factors that are beyond our control. There can be no assurance that our business will generate cash flow from operations, or that additional capital will be available to us, in an amount sufficient to enable us to meet our debt payment obligations and to fund other liquidity needs. If we are unable to generate sufficient cash flow to service our debt obligations, we may need to refinance or restructure our debt, sell assets, reduce or delay capital investments, or seek to raise additional capital. If we were unable to implement one or more of these alternatives, we may be unable to meet our debt payment obligations, which could have a material adverse effect on our business, results of operations, or financial condition.

Our business could be negatively impacted by information technology security events and other disruptions.

We face various cybersecurity threats, including threats to our information technology infrastructure and attempts to gain access to our proprietary or classified information, denial-of-service attacks, requests for money transfers, ransomware, as well as threats to the physical security of our facilities and employees. In addition, we face cyber threats from entities that may seek to target us through our customers, vendors, subcontractors, employees, and other third parties with whom we do business.

Accordingly, we maintain information security partners and staff, policies and procedures for managing risk to our information systems, and conduct employee training on cybersecurity to mitigate persistent and continuously evolving cyber security threats. We have experienced cybersecurity threats such as viruses and attacks by hackers targeting our information technology systems. Although such events have not had a material impact to date on our financial condition, results of operations or liquidity or reputation, future threats could, among other things, cause harm to our business and our reputation; disrupt our operations; expose us to potential liability, regulatory actions and the loss of business; as well as impact our results of operations materially. Due to the evolving nature of these security threats, we cannot predict the potential impact of any future incident.

While we take measures to protect the security of, and prevent unauthorized access to, our systems and personal and proprietary information, the security controls for our systems, as well as other security practices we follow, may not prevent improper access to, or disclosure of, personally identifiable or proprietary information. Furthermore, data privacy is subject to frequently changing rules and regulations, which sometimes conflict among the various jurisdictions and countries in which we provide services. With the acquisition of eSilicon, we may be subject to the General Data Protection Regulation in Europe (GDPR). The GDPR and the California Consumer Privacy Act will result in increased compliance costs. Our failure to adhere to or successfully implement processes in response to these and other changing regulatory requirements in this area could result in legal liability or impairment to our reputation in the marketplace, which could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to Our Industry

We may be unable to make the substantial and productive research and development investments, which are required to remain competitive in our business.

The semiconductor industry requires substantial investment in research and development in order to develop and bring to market new and enhanced technologies and products. Many of our products originated with our research and development efforts and have provided us with a significant competitive advantage. Our research and development expenses were \$183.9 million, \$167.9 million and \$200.5 million in 2019, 2018 and 2017, respectively. We are committed to investing in new product development in order to remain competitive in our target markets. We do not know whether we will have sufficient resources to maintain the level of investment in research and development required to remain competitive. In addition, there is no assurance that the technologies which are the focus of our research and development expenditures will become commercially successful.

Our business, financial condition and results of operations could be adversely affected by worldwide economic conditions, as well as political and economic conditions in the countries in which we conduct business.

Our business and operating results are impacted by worldwide economic conditions. Uncertainty about current global economic conditions may cause businesses to continue to postpone spending in response to tighter credit, unemployment or negative financial news. This in turn could have a material negative effect on the demand for our semiconductor products or the products into which our semiconductors are incorporated. Multiple factors relating to our international operations and to particular countries in which we operate could negatively impact our business, financial condition and results of operations. These factors include:

- changes in political, regulatory, legal or economic conditions;
- restrictive governmental actions, such as restrictions on the transfer or repatriation of funds and foreign investments and trade protection measures, including export duties and quotas and customs duties and tariffs;
- disruptions of capital and trading markets;
- changes in import or export requirements;
- transportation delays;
- civil disturbances or political instability;
- geopolitical turmoil, including terrorism, war or political or military coups;
- public health emergencies, such as the coronavirus outbreak in China and other countries;

- differing employment practices and labor standards;
- limitations on our ability under local laws to protect our intellectual property;
- local business and cultural factors that differ from our customary standards and practices;
- nationalization and expropriation;
- changes in tax or intellectual property laws;
- currency fluctuations relating to our international operating activities; and
- difficulty in obtaining distribution and support.

A significant portion of our products are manufactured, assembled and tested outside the United States. Any conflict or uncertainty in these countries, including due to natural disasters, public health concerns, political unrest or safety concerns, could harm our business, financial condition and results of operations. In addition, if the government of any country in which our products are manufactured or sold sets technical standards for products manufactured in or imported into their country that are not widely shared, it may lead some of our customers to suspend imports of their products into that country, require manufacturers in that country to manufacture products with different technical standards and disrupt cross-border manufacturing relationships which, in each case, could harm our business. For example, the United States and China trade negotiations, the United Kingdom's exit from the European Union, United States federal government budget disruptions and market volatility as a result of political leadership in certain countries all could have an adverse impact on our operations and business. Further, in December 2019, an outbreak of the coronavirus surfaced in Wuhan, China, and cases have been reported in other countries, including Italy, where we currently have operations. This in turn has led to travel restrictions and is impacting international operations of various companies. At this point, the extent to which the coronavirus may impact our business is uncertain. These uncertainties make it difficult for us and our suppliers and customers to accurately plan future business activities.

Changes in current or future laws or regulations or the imposition of new laws or regulations, including new or changed tax regulations, environmental laws, export control laws, anti-corruption laws and conflict minerals rules or new interpretations thereof, by federal or state agencies or foreign governments could impair our ability to compete in international markets.

Changes in current laws or regulations applicable to us, the imposition of new laws and regulations in the United States or other jurisdictions in which we do business, such as Argentina, Canada, China, Germany, Italy, Japan, Malaysia, Romania, Singapore, Spain, Taiwan, United Kingdom and Vietnam, any changes or uncertainties with respect to such laws or regulations or with respect to trade relations between the United States and any such jurisdictions or any adverse outcome as a result of a review or examination by the applicable taxing authority, could materially and adversely affect our business, financial condition and results of operations. For example, we have entered into agreements with local governments to provide us with, among other things, favorable local tax rates if certain minimum criteria are met, as discussed in our risk factor entitled "Tax benefits that we receive may be terminated or reduced in the future, which would increase our costs." These agreements may require us to meet several requirements as to investment, headcount and activities to retain this status. If we fail to otherwise meet the conditions of the local agreements, we may be subject to additional taxes, which in turn would increase our costs. In addition, potential future U.S. tax legislation could impact the tax benefits we effectively realize under these agreements.

Due to environmental concerns, the use of lead and other hazardous substances in electronic components and systems is receiving increased attention. In response, the European Union passed the Restriction on Hazardous Substances (RoHS) Directive, legislation that limits the use of lead and other hazardous substances in electrical equipment. The RoHS Directive became effective July 1, 2006. We believe that our current product designs and material supply chains are in compliance with the RoHS Directive. If our product designs or material supply chains are deemed not to be in compliance with the RoHS Directive, we and our third-party manufacturers may need to redesign products with components meeting the requirements of the RoHS Directive and we may incur additional expense as well as loss of market share and damage to our reputation.

We are also subject to export control laws, regulations and requirements that limit which products we sell and where and to whom we sell our products. In some cases, it is possible that export licenses would be required from U.S. government agencies for some of our products in accordance with the Export Administration Regulations and the International Traffic in Arms Regulations. We may not be successful in obtaining the necessary export licenses in all instances. Any limitation on our ability to export or sell our products imposed by these laws would adversely affect our business, financial condition and results of operations. For example, in April 2018, the U.S. Department of Commerce added ZTE, a Chinese technology company, to

the Denied Persons List, and in May 2019, added Huawei and certain of its non-U.S. affiliates to the Entity List. In July 2018, the U.S. Department of Commerce lifted such ban against ZTE but noted it would continue to monitor ZTE. In February 2020, the U.S. Department of Commerce extended a Temporary General License authorizing specific, limited engagements in transactions involved the export, reexport, and transfer of items to Huawei and certain of its affiliates. ZTE and Huawei have been our customers, with Huawei accounting for approximately 11% and 14% of our total revenue in the years ended December 31, 2019 and 2018, respectively, and we expect a reduction in revenue as a result of these matters, at least in the short-term. We are currently assessing the long-term impact of these matters. In addition, changes in our products or changes in export and import laws and implementing regulations may create delays in the introduction of new products in international markets, prevent our customers from deploying our products internationally or, in some cases, prevent the export or import of our products to certain countries altogether. While we are not aware of any other current export or import regulations which would materially restrict our ability to sell our products in other countries, any change in export or import regulations or related legislation, shift in approach to the enforcement or scope of existing regulations, or change in the countries, persons or technologies targeted by these regulations, could result in decreased use of our products by, or in our decreased ability to export or sell our products to, existing or potential customers with international operations. In such event, our business and results of operations could be adversely affected. In addition, we are subject to economic and trade sanctions programs that are administered by the U.S. Treasury Department's Office of Foreign Assets Control, that prohibit or restrict transactions to or from or dealings with specified countries, their governments, and in certain circumstances, with individuals and entities that are specially-designated nationals of those countries, narcotics traffickers and terrorists or terrorist organizations. Violations of these trade control laws and sanctions regulations are punishable by civil penalties, including fines, denial of export privileges, injunctions, asset seizures, debarment from government contracts, and revocations or restrictions of licenses, as well as criminal fines and imprisonment.

We are also subject to risks associated with compliance with applicable anti-corruption laws, including the Foreign Corrupt Practices Act (FCPA), which generally prohibits companies and their employees and intermediaries from making payments to foreign officials for the purpose of obtaining or keeping business, securing an advantage, or directing business to another, and requires public companies to maintain accurate books and records and a system of internal accounting controls. Under the FCPA, companies may be held liable for actions taken by directors, officers, employees, agents, or other strategic or local partners or representatives. If we or our intermediaries fail to comply with the requirements of the FCPA or similar laws, governmental authorities in the United States and elsewhere could seek to impose civil and criminal fines and penalties which could have a material adverse effect on our business, results of operations and financial condition.

Our product or manufacturing standards could also be impacted by new or revised environmental rules and regulations or other social initiatives. For instance, the SEC adopted disclosure requirements in 2012 relating to the sourcing of certain minerals from the Democratic Republic of Congo and certain other adjoining countries. These rules, which required reporting starting in 2014, could adversely affect our costs, the availability of minerals used in our products and our relationships with customers and suppliers. Also, since our supply chain is complex, we may face reputational challenges with our customers, stockholders, and other stakeholders if we are unable to sufficiently verify the origins for any conflict minerals used in the products that we sell.

We are subject to the cyclical nature of the semiconductor industry, which has suffered and may suffer from future recessionary downturns.

The semiconductor industry is highly cyclical and is characterized by constant and rapid technological change, rapid product obsolescence and price erosion, evolving standards and wide fluctuations in product supply and demand. The industry experienced a significant downturn during the current global recession. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels and accelerated erosion of average selling prices. The most recent downturn and any future downturns could negatively impact our business and operating results. Furthermore, any upturn in the semiconductor industry could result in increased competition for access to third-party foundry and assembly capacity. We are dependent on the availability of this capacity to manufacture and assemble our integrated circuits. None of our third-party foundry or assembly contractors has provided assurances that adequate capacity will be available to us in the future.

Our products must conform to industry standards in order to be accepted by end-users in our markets.

Our products comprise only a part of larger electronic systems. All components of these systems must uniformly comply with industry standards in order to operate efficiently together. These industry standards are often developed and promoted by larger companies who are industry leaders and provide other components of the systems in which our products are incorporated. In driving industry standards, these larger companies are able to develop and foster product ecosystems within which our products can be used. We work with a number of these larger companies in helping develop industry standards with

which our products are compatible. If larger companies do not support the same industry standards that we do, or if competing standards emerge, market acceptance of our products could be adversely affected, which would harm our business.

Some industry standards may not be widely adopted or implemented uniformly, and competing standards may still emerge that may be preferred by our customers. Products for communications and computing applications are based on industry standards that are continually evolving. Our ability to compete in the future will depend on our ability to identify and ensure compliance with these evolving industry standards. The emergence of new industry standards could render our products incompatible with products developed by other suppliers or make it difficult for our products to meet the requirements of certain OEMs. As a result, we could be required to invest significant time and effort and to incur significant expense to redesign our products to ensure compliance with relevant standards. If our products are not in compliance with prevailing industry standards for a significant period of time, we could miss opportunities to achieve crucial design wins. We may not be successful in developing or using new technologies or in developing new products or product enhancements that achieve market acceptance. Our pursuit of necessary technological advances may require substantial time and expense.

Industry consolidation may lead to increased competition and may harm our operating results.

There has been a trend toward industry consolidation in our markets for several years. We expect this trend to continue as companies attempt to improve the leverage of growing research and development costs, strengthen or hold their market positions in an evolving industry or are unable to continue operations. Companies that are strategic alliance partners in some areas of our business may acquire or form alliances with our competitors, thereby reducing their business with us. We believe that industry consolidation may result in stronger competitors that are better able to compete as sole-source vendors for customers. This could lead to more variability in our operating results and could have a material adverse effect on our business, operating results and financial condition.

Risks Related to Our Common Stock

The trading price and volume of our common stock is subject to price volatility. This volatility may affect the price at which you could trade our common stock.

The trading price of our common stock has experienced wide fluctuations. For example, the closing sale prices for our common stock have ranged from \$29.68 to \$76.23 in the twelve-month period ended December 31, 2019. Volatility in the market price of our common stock may occur in the future in response to many risk factors discussed herein and others beyond our control, including but not limited to:

- actual or anticipated fluctuations in our financial condition and operating results;
- changes in the economic performance or market valuations of other companies that provide high-speed analog and mixed signal semiconductor solutions;
- loss of a significant amount of existing business;
- actual or anticipated changes in our growth rate relative to our competitors;
- actual or anticipated fluctuations in our competitors' operating results or changes in their growth rates;
- issuance of new or updated research or reports by securities analysts;
- our announcement of actual results for a fiscal period that are higher or lower than projected results or our announcement of revenue or earnings guidance that is higher or lower than expected;
- regulatory developments in our target markets affecting us, our customers or our competitors;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- sales or expected sales of additional common stock or equity or equity-linked securities;
- terrorist attacks, health epidemics or natural disasters or other such events impacting countries where we or our customers have operations; and
- general economic and market conditions.

Furthermore, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may cause the market price of shares of our common stock to decline. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business. Each of these factors, among others, could harm the value of our common stock.

Due to the nature of our compensation program, our executive officers can sell shares of our common stock, often pursuant to trading plans established under Rule 10b5-1 of the Exchange Act, and certain of our executive officers currently have 10b5-1 trading plans in place. As a result, sales of common stock by our executive officers may not be indicative of their respective opinions of our performance at the time of sale or of our potential future performance. Nonetheless, the market price of our common stock may be affected by sales of shares by our executive officers.

If securities or industry analysts do not publish research or reports about our business, or if they change their recommendations regarding our stock adversely, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. If one or more of the analysts who cover us downgrade our stock, our stock price would likely decline. If one or more of these analysts cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

We may not be able to obtain capital when desired on favorable terms, if at all, or without dilution to our stockholders and our failure to raise capital when needed could prevent us from executing our growth strategy.

We believe that our existing cash and cash equivalents, investments in marketable securities, and cash flows from our operating activities, will be sufficient to meet our anticipated cash needs for at least the next 12 to 18 months. We operate in an industry, however, that makes our financial prospects difficult to evaluate. It is possible that we may not generate sufficient cash flow from operations or otherwise have the capital resources to meet our future capital needs. If this occurs, we may need additional financing to execute on our current or future business strategies, including to:

- invest in our research and development efforts by hiring additional technical and other personnel;
- expand our operating infrastructure;
- acquire complementary businesses, products, services or technologies; or
- otherwise pursue our strategic plans and respond to competitive pressures.

If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our stockholders could be significantly diluted, and these newly-issued securities may have rights, preferences or privileges senior to those of existing stockholders. If we raise additional funds by obtaining loans from third parties, the terms of those financing arrangements may include negative covenants or other restrictions on our business that could impair our operational flexibility, and would also require us to incur interest expense. There is no assurance that additional financing will be available on terms favorable to us, or at all. If adequate funds are not available or are not available on acceptable terms, if and when needed, our ability to fund our operations, take advantage of unanticipated opportunities, develop or enhance our products, or otherwise respond to competitive pressures could be significantly limited.

Delaware law and our corporate charter and bylaws contain anti-takeover provisions that could delay or discourage takeover attempts that stockholders may consider favorable, which could also reduce the market price of our common stock.

Provisions in our restated certificate of incorporation and amended and restated bylaws may have the effect of delaying or preventing a change of control or changes in our management. These provisions include the following:

- the right of our board of directors to elect a director to fill a vacancy created by the expansion of our board of directors;

- the classification of our board of directors so that only a portion of our directors are elected each year, with each director serving a three-year term;
- the requirement for advance notice for nominations for election to our board of directors or for proposing matters that can be acted upon at a stockholders' meeting;
- the ability of our board of directors to alter our bylaws without obtaining stockholder approval;
- the ability of our board of directors to issue, without stockholder approval, up to 10,000,000 shares of preferred stock with rights set by our board of directors, which rights could be senior to those of common stock;
- the required approval of holders of at least two-thirds of the shares entitled to vote at an election of directors to adopt, amend or repeal our bylaws or amend or repeal the provisions of our certificate of incorporation regarding the election and removal of directors and the ability of stockholders to take action by written consent;
- the elimination of the right of stockholders to call a special meeting of stockholders and to take action by written consent; and
- designating the state and federal courts located within the State of Delaware as the exclusive forums for derivative actions, claims of breach of fiduciary duty by any director, officer or other employee, claims arising pursuant to any provisions of the Delaware General Corporation Law and claims governed by the internal affairs doctrine.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law. These provisions may prohibit or restrict large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us. These provisions in our restated certificate of incorporation and amended and restated bylaws and under Delaware law could discourage potential takeover attempts and could reduce the price that investors might be willing to pay for shares of our common stock in the future and result in the market price of our common stock being lower than they would without these provisions.

We do not currently intend to pay dividends on our common stock and, consequently, the ability to achieve a return on an investment in our stock will depend on appreciation in the price of our common stock.

We have never declared or paid any cash dividends on our common stock and do not currently intend to do so for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. The success of an investment in shares of our common stock will depend upon any future appreciation in their value. There is no guarantee that our common stock will appreciate in value.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We lease 68,950 square feet of office space in Santa Clara, California, which currently serves as our principal executive office that will expire on March 31, 2020. In 2020, we will move to a 110,611 square feet office space in Santa Clara, California, which will expire on September 30, 2030. We also lease 42,197 square feet of office space in Westlake Village, California under a lease that will expire on December 31, 2024. We also lease 27,797 square feet of office in Irvine, California under a lease that will expire on July 31, 2019. We believe that our current facilities are sufficient to meet our needs for the foreseeable future. For additional information regarding our obligations under property leases, see Note 16 of Notes to our Consolidated Financial Statements, included in Part II, "Item 8, Financial Statements and Supplementary Data."

ITEM 3. LEGAL PROCEEDINGS

We are currently a party to the following legal proceedings:

Netlist, Inc. v. Inphi Corporation, Case No. 09-cv-6900 (C.D. Cal.)

On September 22, 2009, Netlist filed suit in the United States District Court, Central District of California (Court) asserting that we infringe U.S. Patent No. 7,532,537. Netlist filed an amended complaint on December 22, 2009, further asserting that we infringe U.S. Patent Nos. 7,619,912 and 7,636,274, collectively with U.S. Patent No. 7,532,537, the patents-

in-suit, and seeking both unspecified monetary damages to be determined and an injunction to prevent further infringement. These infringement claims allege that the iMB™ and certain other memory module components infringe the patents-in-suit. We answered the amended complaint on February 11, 2010 and asserted we do not infringe the patents-in-suit and that the patents-in-suit are invalid. In 2010, we filed *inter partes* requests for reexamination with the United States Patent and Trademark Office (USPTO), asserting that the patents-in-suit are invalid. As a result of the proceedings at the USPTO, the Court has stayed the litigation, with the parties advising the Court on status every 120 days.

As to the proceeding at the USPTO, reexamination has been ordered for all of the patents that were alleged to infringe. At present, the USPTO has determined that almost all of the originally filed claims are not valid, and determined certain amended claims to be patentable. The Reexamination Certificate for U.S. Patent No. 7,532,537 was issued on August 2, 2016 based upon amended claims. The Reexamination Certificate for U.S. Patent No. 7,636,274 was issued on November 5, 2018, indicating all claims 1-97 were cancelled. The parties continue to assert their respective positions with respect to the reexamination proceeding for U.S. Patent No. 7,619,912.

While we intend to defend the foregoing USPTO proceedings and lawsuit vigorously, the USPTO proceedings and litigation, whether or not determined in our favor or settled, could be costly and time-consuming and could divert management's attention and resources, which could adversely affect our business.

Based on the nature of USPTO proceedings and litigation, we are currently unable to predict the final outcome of this lawsuit and therefore, cannot determine the likelihood of loss nor estimate a range of possible loss. However, because of the nature and inherent uncertainties of litigation, should the outcome of these actions be unfavorable, our business, financial condition, results of operations or cash flows could be materially and adversely affected.

Claims Against eSilicon

We and eSilicon have received written communications from certain former stockholders of eSilicon demanding to inspect eSilicon's books and records and indicating that such stockholders will be seeking appraisal of shares they held in eSilicon. Certain of these former eSilicon stockholders also have stated that they may assert claims against eSilicon's directors and senior officers for alleged breaches of fiduciary duty and other violations in connection with the merger between eSilicon and our subsidiary. We are unaware of any petition for appraisal and/or lawsuit being filed by any former eSilicon stockholder. We believe that the claims in such written communications are without merit, and plan to vigorously defend against lawsuits arising out of or relating to the merger agreement and/or the merger that may be filed in the future.

Other Litigation Matters

We are not currently a party to any other material litigation. The semiconductor industry is characterized by frequent claims and litigation, including claims regarding patent and other intellectual property rights as well as improper hiring practices. We may from time to time become involved in litigation relating to claims arising from our ordinary course of business. These claims, even if not meritorious, could result in the expenditure of significant financial and managerial resources.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

Market for Registrant's Common Equity

Our common stock is traded on the New York Stock Exchange under the symbol "IPHI". As of February 26, 2020, we had approximately 28 holders of record of our common stock. This number does not include the number of persons whose shares are in nominee or in "street name" accounts through brokers.

We have never declared or paid any cash dividends on shares of our capital stock. We expect to retain all of our earnings to finance the expansion and development of our business and we do not currently intend to pay any cash dividends on our capital stock in the foreseeable future. Our board of directors will determine future dividends, if any.

Directors and executive officers have currently and may from time to time in the future, establish pre-set trading plans in accordance with Rule 10b5-1 promulgated under the Exchange Act.

Securities Authorized for Issuance under Equity Compensation Plans

Information regarding the securities authorized for issuance under our equity compensation plans can be found under Part III, "Item 12, Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters."

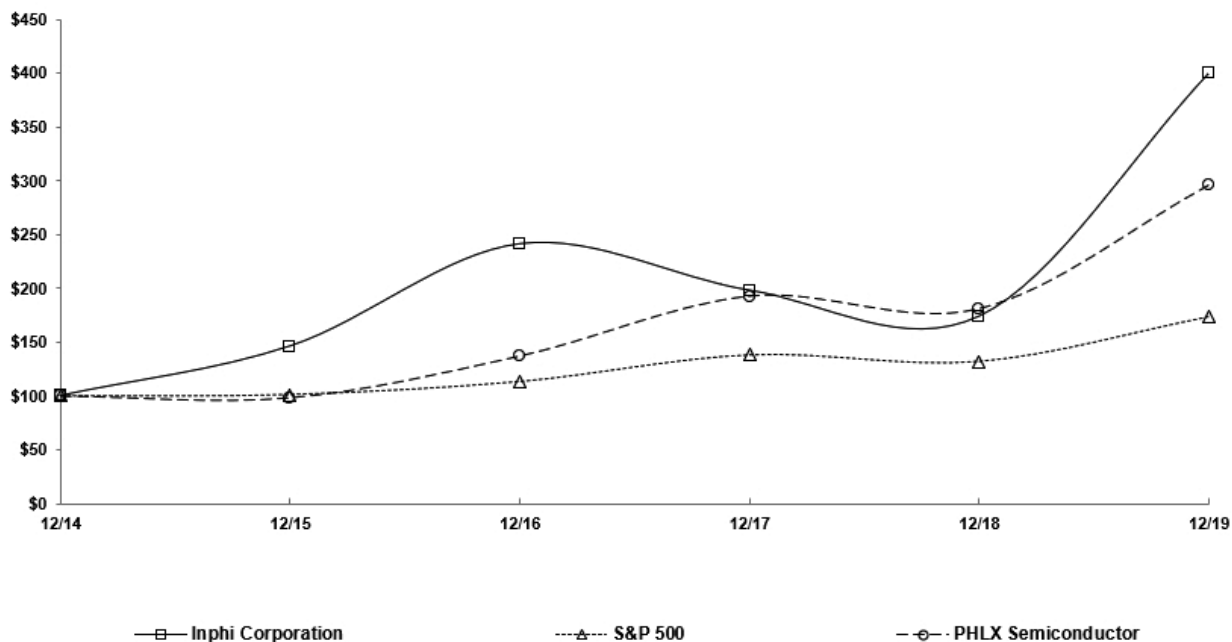
Share Performance Graph

The following information is not deemed to be “soliciting material” or to be “filed” with the SEC or subject to Regulation 14A or 14C under the Exchange Act or to the liabilities of Section 18 of the Exchange Act, and will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Exchange Act, except to the extent we specifically incorporate it by reference into such a filing.

Set forth below is a line graph showing the cumulative total stockholder return (change in stock price plus reinvested dividends) assuming the investment of \$100 on December 31, 2014 in each of our common stock, the S&P 500 Index and PHLX Semiconductor Index for the period commencing on December 31, 2014 and ending on December 31, 2019. The comparisons in the table are required by the SEC and are not intended to forecast or be indicative of future performance of our common stock.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Inphi Corporation, the S&P 500 Index
and the PHLX Semiconductor Index



ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data should be read together with Part II, “Item 7, Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and related notes included elsewhere in this report. The selected balance sheet data as of December 31, 2019 and 2018, and the selected statements of operations data for each of the years ended December 31, 2019, 2018, and 2017 have been derived from our audited consolidated financial statements included elsewhere in this report. The selected balance sheet data as of December 31, 2017, 2016 and 2015 have been derived from our audited consolidated financial statements not included in this report. Our statements of income (loss) have been retrospectively reclassified to present the results of operations of the memory product business as discontinued operations. Historical results are not necessarily indicative of the results to be expected in the future.

| | Year Ended December 31, | | | | |
|--|---|--------------------|--------------------|------------------|--------------------|
| | 2019 | 2018 | 2017 | 2016 | 2015 |
| | (in thousands, except share and per share data) | | | | |
| Consolidated Statement of Income (Loss) Data: | | | | | |
| Revenue ⁽¹⁾ | \$ 365,635 | \$ 294,490 | \$ 348,201 | \$ 266,277 | \$ 192,710 |
| Cost of revenue ⁽¹⁾⁽²⁾⁽³⁾ | 152,814 | 129,345 | 151,698 | 85,581 | 72,694 |
| Gross profit | <u>212,821</u> | <u>165,145</u> | <u>196,503</u> | <u>180,696</u> | <u>120,016</u> |
| Operating expenses: | | | | | |
| Research and development ⁽¹⁾⁽²⁾⁽³⁾ | 183,875 | 167,924 | 200,539 | 108,013 | 87,774 |
| Sales and marketing ⁽¹⁾⁽²⁾ | 47,722 | 43,080 | 42,381 | 26,534 | 21,462 |
| General and administrative ⁽¹⁾⁽²⁾ | 30,672 | 28,302 | 23,782 | 21,201 | 20,322 |
| Total operating expenses | <u>262,269</u> | <u>239,306</u> | <u>266,702</u> | <u>155,748</u> | <u>129,558</u> |
| Income (loss) from operations..... | (49,448) | (74,161) | (70,199) | 24,948 | (9,542) |
| Interest expense ⁽⁴⁾ | (34,920) | (32,209) | (29,842) | (17,406) | (783) |
| Other income, net ⁽⁵⁾ | 11,853 | 2,408 | 3,961 | 3,914 | 221 |
| Income (loss) before income taxes from continuing operations | (72,515) | (103,962) | (96,080) | 11,456 | (10,104) |
| Provision (benefit) for income taxes ⁽⁶⁾ | 396 | (8,211) | (21,176) | (15,057) | 5,857 |
| Net income (loss) from continuing operations .. | <u>(72,911)</u> | <u>(95,751)</u> | <u>(74,904)</u> | <u>26,513</u> | <u>(15,961)</u> |
| Discontinued operations: | | | | | |
| Gain from sale | — | — | — | 78,544 | — |
| Income (loss) from discontinued operations | — | — | — | (3,802) | 4,535 |
| Provision for income taxes | — | — | — | (1,799) | (2,125) |
| Net income from discontinued operations | <u>—</u> | <u>—</u> | <u>—</u> | <u>72,943</u> | <u>2,410</u> |
| Net income (loss) | <u>\$ (72,911)</u> | <u>\$ (95,751)</u> | <u>\$ (74,904)</u> | <u>\$ 99,456</u> | <u>\$ (13,551)</u> |
| Earnings per share: | | | | | |
| Basic | | | | | |
| Net income (loss) from continuing operations | \$ (1.61) | \$ (2.19) | \$ (1.78) | \$ 0.65 | \$ (0.41) |
| Net income from discontinued operations | — | — | — | 1.80 | \$ 0.06 |
| Basic earnings per share | <u>\$ (1.61)</u> | <u>\$ (2.19)</u> | <u>\$ (1.78)</u> | <u>\$ 2.45</u> | <u>\$ (0.35)</u> |
| Diluted | | | | | |
| Net income (loss) from continuing operations | \$ (1.61) | \$ (2.19) | \$ (1.78) | \$ 0.60 | \$ (0.41) |
| Net income from discontinued operations | — | — | — | 1.65 | \$ 0.06 |
| Diluted earnings per share | <u>\$ (1.61)</u> | <u>\$ (2.19)</u> | <u>\$ (1.78)</u> | <u>\$ 2.25</u> | <u>\$ (0.35)</u> |
| Weighted-average shares used in computing earnings per share: | | | | | |
| Basic | 45,226,717 | 43,690,581 | 42,165,213 | 40,565,433 | 38,580,330 |
| Diluted | 45,226,717 | 43,690,581 | 42,165,213 | 44,124,881 | 38,580,330 |

(1) On December 12, 2016, we completed the acquisition of ClariPhy for \$303.7 million in cash. The results of operations of ClariPhy and estimated fair value of assets acquired and liabilities assumed were included in our consolidated financial statements from the acquisition date. The acquisition resulted in a significant change in our statement of operations in 2019, 2018 and 2017 which includes:

- (i) charge to cost of goods sold resulting from the step-up inventory acquired from ClariPhy; and
- (ii) charge to cost of goods sold and operating expenses from amortization of acquired intangibles.

Footnotes continued on the following page.

Footnotes continued from the prior page.

| | As of December 31, | | | | |
|---|---------------------------|-------------|-------------|-------------|-------------|
| | 2019 | 2018 | 2017 | 2016 | 2015 |
| | (in thousands) | | | | |
| Consolidated Balance Sheet Data: | | | | | |
| Cash and cash equivalents..... | \$ 282,723 | \$ 172,018 | \$ 163,450 | \$ 144,867 | \$ 283,044 |
| Investments in marketable securities..... | 140,131 | 235,339 | 241,737 | 249,476 | 43,616 |
| Working capital..... | 263,848 | 446,837 | 457,062 | 433,250 | 344,897 |
| Total assets..... | 976,006 | 889,873 | 917,506 | 990,595 | 505,046 |
| Convertible debt..... | 476,178 | 447,825 | 421,431 | 396,857 | 171,701 |
| Other liabilities..... | 153,227 | 75,354 | 84,674 | 131,214 | 42,675 |
| Total stockholders' equity..... | 346,601 | 366,694 | 411,401 | 462,524 | 290,670 |

(2) Stock-based compensation expense is included in our results of operations as follows:

| | Year Ended December 31, | | | | |
|---------------------------------|--------------------------------|-------------|-------------|-------------|-------------|
| | 2019 | 2018 | 2017 | 2016 | 2015 |
| | (in thousands) | | | | |
| Operating expenses: | | | | | |
| Cost of revenue..... | \$ 6,208 | \$ 2,527 | \$ 2,045 | \$ 1,796 | \$ 1,359 |
| Research and development..... | 42,265 | 37,397 | 28,846 | 17,390 | 13,268 |
| Sales and marketing..... | 15,561 | 13,470 | 8,340 | 4,405 | 3,213 |
| General and administrative..... | 12,821 | 10,490 | 5,602 | 4,407 | 5,473 |
| Discontinued operations..... | — | — | — | 2,194 | 4,980 |

(3) Cost of revenue and research and development expenses for the year ended December 31, 2017 included an impairment charge of \$47.0 million as a result of abandonment of a project related to certain developed technology and in-process research and development from the ClariPhy acquisition.

(4) The interest expense resulted mainly from convertible debt issued in December 2015 and September 2016.

(5) Other income, net included an impairment charge of \$7.0 million related to a non-marketable equity investment for the year ended December 31, 2018.

(6) The benefit for income taxes for the year ended December 31, 2016 included the release of valuation allowance against deferred tax assets as a result of the acquisition of ClariPhy. The benefit for income taxes for the year ended December 31, 2017 included revaluation of deferred tax liabilities to the new federal tax rate of 21% and tax benefit from intercompany transfer of intellectual property rights. The benefit for income taxes for the year ended December 31, 2018 included partial release of federal valuation allowance resulting from the transfer of an acquired in-process research and development to developed technology in 2018 which allowed the related deferred tax liability to be considered a source of income for realizing deferred tax assets, as well as the revaluation of the foreign deferred tax liability on the in-process research and development based on the foreign tax rates applicable to the anticipated reversal periods.

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations and this report contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. When used in this report, the terms "may," "might," "will," "objective," "intend," "should," "could," "can," "would," "expect," "believe," "estimate," "predict," "potential," "plan," "anticipate," "seek," "future," "strategy," "likely," or the negative of these terms, and similar expressions are intended to identify forward-looking statements. These statements include statements regarding our anticipated trends and challenges in our business and the markets in which we operate, including the market for 25G to 600G high-speed analog semiconductor solutions, demand for our current products, our plans for future products and anticipated features and benefits thereof, expansion of our product offerings and business activities, enhancements of existing products, our ability to forecast demand and its effects, the impact of U.S. government export restrictions on Huawei, our acquisitions and investments in other companies or technologies, including our acquisition of eSilicon, and the anticipated benefits thereof and increase in expenses related thereto, critical accounting policies and estimates, our expectations regarding our expenses and revenue, sources of revenue, our effective tax rate and tax benefits, the benefits of our products and services, our technological capabilities and expertise, our liquidity position and sufficiency thereof, including our anticipated cash needs and uses of cash, our ability to generate cash, our operating and capital expenditures and requirements and our needs for additional financing and potential consequences thereof, repatriation of cash balances from our foreign subsidiaries, our contractual obligations, our anticipated growth and growth strategies, including growing our end customer base, interest rate sensitivity, adequacy of our disclosure controls, our legal proceedings and warranty claims. These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these or any other forward-looking statements. These risks and uncertainties include, but are not limited to, those risks discussed below, as well as factors affecting our results of operations, our ability to manage our growth, our ability to sustain or increase profitability, demand for our solutions, the effect of changes in average selling prices for our products, our ability to compete, our ability to rapidly develop new technology and introduce new products, our ability to safeguard our intellectual property, our ability to qualify for tax holidays and incentives, trends in the semiconductor industry and fluctuations in general economic conditions, and the risks set forth throughout this report, including the risks set forth under Part I, "Item 1A, Risk Factors." Readers are cautioned not to place undue reliance on these forward-looking statements, which are based on current expectations and reflect management's opinions only as of the date hereof. These forward-looking statements speak only as of the date of this Report. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations with regard thereto or any changes in events, conditions or circumstances on which any such statement is based.

The following discussion and analysis should be read in conjunction with our consolidated financial statements and related notes that are included elsewhere in this Annual Report on Form 10-K.

Overview

We are a fabless provider of high-speed analog and mixed signal semiconductor solutions for the communications and cloud markets. Our analog and mixed signal semiconductor solutions provide high signal integrity at leading-edge data speeds while reducing system power consumption. Our semiconductor solutions are designed to address bandwidth bottlenecks in networks, maximize throughput and minimize latency in computing environments and enable the rollout of next generation communications and cloud infrastructures. Our solutions provide a vital high-speed interface between analog signals and digital information in high-performance systems such as telecommunications transport systems, enterprise networking equipment and data centers. We provide 25G to 600G high-speed analog and mixed signal semiconductor solutions for the communications market. We have a wide range of products in our portfolio with many products sold in communication and cloud markets as of December 31, 2019. We have ongoing, informal collaborative discussions with industry and technology leaders in Tier-1 cloud providers, telecom operators, network system OEMs and optical module and component vendors to design architectures and products that solve bandwidth bottlenecks in existing and next generation communications systems. Although we do not have any formal agreements with these entities, we engage in informal discussions with these entities with respect to anticipated technological challenges, next generation customer requirements and industry conventions and standards. We help define industry conventions and standards within the markets we target by collaborating with technology leaders, OEMs, systems manufacturers and standards bodies.

The recent history of our product development and sales and marketing efforts is as follows:

- In 2015, we started sampling a new product in our 45GBaud Linear Coherent Product Family, IN4518SZ. The IN4518SZ is a quad linear differential to single-ended Mach-Zehnder Modulator Driver, pin-compatible with the linear driver IN3214SZ, for 200G coherent Optical interconnect applications. The IN4518SZ extends the reach of 200G coherent for telecommunication applications and enables one set of hardware to serve multiple segments in the telecommunication markets. We also announced the availability of the industry's first, highly integrated, lowest power PAM4 chipset solutions for intra-data center and inter-data center cloud interconnects. The PAM4 chipset solution is a family of PAM4 PHY ICs for 40G (IN014020-XL), 50G (IN015050-SF), 100G (IN015025-CA), 400G (IN015025-CD) and a companion linear TIA (IN2860TA) to enable platform solutions for multi-rate PAM4 interconnects. We also started sampling IN3217SZ, a quad linear differential to single-ended Mach-Zehnder Modulator Driver in a Surface Mount Technology (SMT) package. The new SMT quad linear driver extends the product portfolio by utilizing cost effective packaging for higher volume 100G/200G coherent long haul and metro optical interconnect applications.
- In 2016, we completed the acquisition of ClariPhy Communications, Inc. With this acquisition, we are able to provide a complete coherent platform to our customers in telecommunication and cloud interconnect applications. We also introduced ColorZ® reference design, the industry's first Silicon Photonics 100G PAM4 platform solution for 80 km DWDM Data Center Interconnect in QSFP28 form factor. Utilizing advanced Pulse Amplitude Modulation signaling, ColorZ® delivers up to 4Tb/s of bandwidth over a single fiber and allows multiple data centers located up to 80 km of each other to be connected and act like a single data center. We further introduced a highly integrated Silicon Photonics (SiPho) technology platform for 100Gbit/s data center applications. The single-chip SiPho optics includes multi-channel modulators, photodetectors, multiplexers, demultiplexers, optical power monitors and fiber coupling structures all integrated onto a single integrated circuit. We also announced the availability of the industry's lowest power Clock and Data Recovery Retimer for module applications, IN012525-CQ CMOS CDR and 45GBaud Linear Coherent Product Family, the industry's first linear ICs enabling 400G coherent solutions for next-generation telecommunication and cloud applications. We also announced the industry's first 400GbE platform solution for next-generation 400G CFP8 modules. The platform solution includes our PAM4 DSP IC that supports IEEE P802.3bs 400G/s Ethernet standard alongside its companion market leading linear TIA and linear drivers for client based cloud interconnects. With the introduction of these new products, we are offering customers an end-to-end platform solution for moving data faster within and between data centers. We also announced the production availability of a new product in the 32GBaud Linear Coherent Product Family. The IN3217SZ, a quad linear Mach-Zehnder Modulator Driver in a SMT package, extends the product portfolio by utilizing cost effective packaging for the 100G/200G coherent long haul and metro optical interconnect applications. We also announced the sampling of IN6450TA, the world's first 64GBaud dual channel linear TIA/VGA amplifier. The IN6450TA supports data rates of 400Gbps to 600Gbps on a single wavelength for long haul, metro, and data center interconnect networks using coherent technology.
- In 2017, we started sampling IN6417SZ, the industry's first 64GBaud quad linear differential to single-ended Mach-Zehnder Modulator Driver in 14x9 mm Surface Mount Technology (SMT) package. This new 64GBaud SMT quad linear driver extends our 64G product portfolio for next-generation 400G/600G coherent, long haul, and metro optical interconnect applications. We introduced Polaris™, the industry's first 16nm CMOS PAM4 platform solution for next-generation cloud deployments. The Polaris platform includes our highly integrated, lowest power PAM4 digital signal processing IC alongside its companion market leading, low power linear driver and TIA for data center connectivity. We announced the commercial availability and production ramp of ColorZ®, the industry's first Silicon Photonics 100G PAM4 platform solution for 80 km DWDM Data Center Interconnect in QSFP28 form factor, and our IN6450TA, the world's first 64GBaud dual channel linear TIA/VGA amplifier. We also announced the new Vega™ family of low power 50/100/200/400G PAM4 Gearbox and Retimer DSPs for system line cards. Leveraging our DSP-based PAM4, the new Gearbox and Retimer DSPs expand bandwidth capacity of next generation networks, delivering accelerated connectivity for wired network infrastructure at cloud-scale data centers, enterprise, and service providers. We also started sampling our M200, an ultra-low power, and high-performance Coherent DSP, supporting 100G and 200G data rates for telecommunication and cloud interconnect applications. We announced the expansion of our ColorZ® portfolio with ColorZ-Lite™, 100G DWDM in QSFP28 form factor for campus and data center interconnects. The addition of ColorZ-Lite™ offers campus and data centers a cost optimized solution for shorter distances up to 20 km. We also expanded our 16nm Polaris™ PAM4 DSP portfolio for next

generation 50G-400G cloud deployments. The new Polaris™ PAM4 DSP now includes products supporting an integrated driver to address the growing demands for lower power and reduced cost solutions over short reach data center optical connectivity.

- In 2018, we announced our 16nm 400Gbps Porrima™ Single-Lambda PAM4 platform, the first complete 56GBaud platform solution for wired network infrastructure including hyperscale cloud data center, service provider and enterprise network. We also announced the production availability of the Polaris™ 16nm CMOS PAM4 platform. The Polaris platform is the industry's first 16nm 28GBaud PAM4 DSP that includes integrated driver options for EML and VCSEL lasers to cover a broad range of optical interconnects from 50G to 400G. The platform also supports a family of discrete EML and VCSEL drivers and linear TIAs. We started shipping the production version of its M200 LightSpeed-III™, Coherent DSP with ultra-low power and high-performance supporting 100G and 200G data rates for telecommunication and cloud data center interconnect applications. We announced the expansion of its 16nm Porrima™ Single-Lambda PAM4 platform family, with the complete 100Gbps/56GBaud platform solution for 100G QSFP28 and SFP-DD DR/FR optical modules for wired network infrastructure including hyperscale cloud data center, service provider, wireless 5G and enterprise networks. We introduced the industry's smallest form factor, lowest power and highest performance 64GBaud quad coherent TIA and driver. Paired up as a chipset, the new TIA and Driver will enable higher density line cards and pluggable solutions that are critical for next generation 400/600G telecommunication and cloud data center interconnect (DCI) applications.
- In 2019, we announced our Porrima™ Gen2 Single-Lambda PAM4 platform with integrated laser drivers that reduces optical module Bill of Material (BOM) cost and enables sub-10 watt 400Gbps QSFP-DD optical transceiver modules for wired network infrastructure – including hyperscale cloud data center, service provider and enterprise networks. We also announced first to production of a 100Gbps and 400Gbps Single-Lambda PAM4 platform for the next frontier of data center and cloud networking. Our Porrima™ PAM4 platform is a complete 56GBaud solution, with linear TIA and drivers, for the optical network infrastructure including mass-scale cloud data center, service provider and enterprise networks. We started sampling our new Canopus™ coherent DSP, the industry's first merchant 7nm coherent DSP. Canopus paves the way for an industry-wide paradigm shift in deployment models by providing low power and high density QSFP-DD, OSFP and CFP2-DCO coherent pluggable modules for cloud and telecom customers. We started engineering sampling of ColorZ® II, the industry first 400ZR QSFP-DD pluggable coherent transceiver for cloud DCIs to major cloud operators and OEMs. COLORZ II enables large cloud operators to connect metro data centers at a fraction of the cost of traditional coherent transport systems and allows switch and router companies to offer the same density for both coherent DWDM and client optics in the same chassis. We believe our acquisition of eSilicon is expected to accelerate our strategic roadmap in developing electro-optics solutions for our cloud and telecommunications customers and expand our presence into strategic geographic regions for talent acquisition.

Our products are designed into systems sold by OEMs, including Tier-1 OEMs in the telecom and networking system markets worldwide. We believe we are one of a limited number of suppliers to these OEMs for the types of products we sell, and in some cases we may be the sole supplier for certain applications. We sell both directly to these OEMs and to module manufacturers, ODMs, and subsystems providers that, in turn, sell to these OEMs. During the year ended December 31, 2019, we sold our products to approximately 100 customers. A significant portion of our revenue has been generated by a limited number of customers. In the year ended December 31, 2019, we believe that sales to Microsoft and Huawei, directly and indirectly, through subcontractors, accounted for approximately 14% and 11% of our total revenue, respectively. We sell products to Fabrinet, a subcontractor who sells to various end customers. Sales to Fabrinet, was 11% of our total revenue for the year ended December 31, 2019. We believe, in the aggregate, sales to Cisco, including its subcontractors was significant but less than 10% of our total revenue for the year ended December 31, 2019. In the year ended December 31, 2018, we believe that sales to Microsoft, Huawei, and Cisco, directly and indirectly, through subcontractors, accounted for approximately 18%, 14% and 11% of our total revenue, respectively. We sell products to Cyberlink, a distributor who sells to various end customers. Sales to Cyberlink was approximately 11% of our total revenue for the year ended December 31, 2018. In the year ended December 31, 2017, we believe that sales to Microsoft, Huawei, and Cisco, directly and indirectly, through subcontractors, accounted for approximately 17%, 14%, and 11% of our total revenue. Substantially all of our sales to date, including our sales to Microsoft, Huawei and Cisco, are made on a purchase order basis. Since the beginning of 2006, we have shipped more than 65 million high-speed analog and mixed signal semiconductors. Our total revenue was \$365.6 million, \$294.5 million and \$348.2 million for the years ended December 31, 2019, 2018 and 2017, respectively. The increase in our revenue in 2019 was primarily due to increases in telecommunication and cloud products, partially offset by legacy products.

Sales to customers in Asia accounted for 64%, 57% and 62% of our total revenue in 2019, 2018 and 2017, respectively. Because many of our customers or their OEM manufacturers are located in Asia, we anticipate that a majority of our future revenue will continue to come from sales to that region. Although a large percentage of our sales are made to customers in Asia, we believe that a significant number of the systems designed by these customers are then sold to end-users outside Asia.

In April 2010, we received approval from the government of Singapore to set up an international headquarters from which to conduct our international operations. Because of its geographic alignment with suppliers and customers, we established our operations in Singapore to become a new international headquarters office for receiving and fulfilling orders for product shipped to locations outside the United States. In addition, we built a team of engineering capability in Singapore both for development as well as testing associated with manufacturing. International operations in Singapore commenced on May 1, 2010 and during 2010, we transitioned our international operations from the United States to our Singapore subsidiary.

Demand for new features changes rapidly. It is difficult for us to forecast the demand for our products, in part because of the complex supply chain between us and the end-user markets that incorporate our products. Due to our lengthy product development cycle, it is critical for us to anticipate changes in demand for our various product features and the applications they serve to allow sufficient time for product development and design. Our failure to accurately forecast demand can lead to product shortages that can impede production by our customers and harm our customer relationships. Conversely, our failure to forecast declining demand or shifts in product mix can result in excess or obsolete inventory.

Although revenue generated by each design win and the timing of the recognition of that revenue can vary significantly, we consider ongoing design wins to be a key factor in our future success. We consider a design win to occur when an OEM or contract manufacturer notifies us that it has selected our products to be incorporated into a product or system under development. The design win process is typically lengthy, and as a result, our sales cycles will vary based on the market served, whether the design win is with an existing or new customer and whether our product is under consideration for inclusion in a first or subsequent generation product. In addition, our customers' products that incorporate our semiconductors can be complex and can require a substantial amount of time to define, design and produce in volume. As a result, we can incur significant design and development expenditures in circumstances where we do not ultimately recognize, or experience delays in recognizing revenue. Our customers generally order our products on a purchase order basis. We do not have any long-term purchase commitments (in excess of one year) from any of our customers. Once our product is incorporated into a customer's design, however, we believe that our product is likely to continue to be purchased for that design throughout that product's life cycle because of the time and expense associated with redesigning the product or substituting an alternative semiconductor. Our design cycle from initial engagement to volume shipment is typically two to three years. Product life cycles in the markets we serve typically range from five to 10 years or more and vary by application.

Summary of Consolidated Financial Results

As discussed in more detail below, for the year ended December 31, 2019, compared to the year ended December 31, 2018, we delivered the following financial performance.

- Total revenue increased by \$71.1 million, or 24% to \$365.6 million.
- Gross profit as a percentage of revenue increased from 56% to 58%.
- Total operating expenses increased by \$23.0 million, or 10% to \$262.3 million.
- Loss from operations decreased by \$24.7 million to \$49.4 million.
- Provision for income taxes was \$0.4 million in 2019 compared to benefit for income taxes of \$8.2 million in 2018.
- Loss per share decreased by \$0.58 to \$1.61.

The increase in our revenue for the year ended December 31, 2019 was primarily the result of increases in telecommunication products and cloud products, partially offset by a decrease in legacy products.

Total operating expenses increased in 2019 due primarily to an increase in stock-based compensation expense due to higher equity awards and personnel costs. Our expenses mainly consist of personnel costs, which include compensation, benefits, payroll related taxes and stock-based compensation. From December 31, 2018 to December 31, 2019, our headcount increased by 105, mostly in the engineering department. We expect expenses to continue to increase in absolute dollars due to the acquisition of eSilicon and as we continue to invest resources to develop more products, to support the growth of our business. Other income increased due to an impairment charge of \$7.0 million on an investment in non-marketable equity security recorded in 2018. Our loss per share decreased primarily due to an increase in gross margin and an increase in other income, partially offset by increases in operating expenses and provision for income taxes.

Our cash and cash equivalents were \$282.7 million at December 31, 2019, compared with \$172.0 million at December 31, 2018. Cash provided by operating activities was \$96.9 million during the year ended December 31, 2019 compared to \$78.2 million during the year ended December 31, 2018. Cash provided by investing activities was \$63.0 million during the year ended December 31, 2019 compared to cash used in investing activities of \$35.6 million during the year ended December 31, 2018. Cash used in financing activities was \$49.3 million during the year ended December 31, 2019 compared to \$33.9 million during the year ended December 31, 2018.

Critical Accounting Policies and Significant Management Estimates

Our consolidated financial statements are prepared in accordance with U.S. Generally Accepted Accounting Principles (GAAP). In connection with the preparation of our consolidated financial statements, we are required to make assumptions and estimates about future events, and apply judgments that affect the reported amounts of assets, liabilities, revenue, expenses and the related disclosures. We base our assumptions, estimates and judgments on historical experience, current trends and other factors that management believes to be relevant at the time our consolidated financial statements are prepared. On a regular basis, we review the accounting policies, assumptions, estimates and judgments to ensure that our consolidated financial statements are presented fairly and in accordance with GAAP. However, because future events and their effects cannot be determined with certainty, actual results could differ from our assumptions and estimates, and such differences could be material.

Our significant accounting policies are discussed in Note 1 of the Notes to our Consolidated Financial Statements. We believe that the following accounting estimates are the most critical to aid in fully understanding and evaluating our reported financial results, and they require our most difficult, subjective or complex judgments, resulting from the need to make estimates about the effect of matters that are inherently uncertain. We have reviewed these critical accounting estimates and related disclosures with our audit committee.

Revenue Recognition

Prior to January 1, 2018, we recognized revenue when there was persuasive evidence of an arrangement, delivery had occurred, the fee was fixed or determinable and collection was reasonably assured.

On January 1, 2018, we adopted Accounting Standards Update (ASU) 2014-09, Revenue from Contract with Customers (Topic 606), using the modified retrospective method applied to those contracts which were not completed as of January 1, 2018. The adoption of this guidance resulted in no cumulative effect adjustment as of January 1, 2018. Starting January 1, 2018, we recognize revenue on sales to distributors upon shipment and transfer of control (known as “sell-in” revenue recognition), rather than deferring recognition until distributors report that they have sold the products to their customers (known as “sell-through” revenue recognition). The impact on revenue for the year ended December 31, 2018 was an increase of \$3.8 million. The impact on cost of revenue for the year ended December 31, 2018 was an increase of \$0.8 million. Results for reporting periods beginning after January 1, 2018 are presented under the new revenue guidance, while prior periods were not retrospectively adjusted and continue to be reported in accordance with our historic revenue recognition accounting.

We recognize revenue when the control of the promised goods or services is transferred to customers in an amount that reflects the consideration we expect to receive in exchange for such goods or services.

Our products are fully functional at the time of shipment and do not require additional production, modification, or customization. We recognize revenue upon transfer of control at a point in time when title transfers either upon shipment to or receipt by the customer, net of accruals for estimated sales returns and allowances. Sales and other taxes we collect are excluded from revenue. The fee is based on specific products and quantities to be delivered at specified prices, which is evidenced by a customer purchase order or other persuasive evidence of an arrangement. Certain distributors may receive a credit for the price discounts associated with the distributors' customers that purchased those products. We estimate the extent of these distributor price discounts at each reporting period to reduce accounts receivable and revenue. Although we accrue an estimate of distributor price discount, we do not issue these discounts to the distributor until the inventory is sold to the distributors' customers. As of December 31, 2019 and 2018, the estimated price discount was \$0.7 million and \$1.6 million, respectively. Payment terms of customers are typically 30 to 60 days after invoice date. Our products are under warranty against defects in material and workmanship generally for a period of one or two years. We accrue for estimated warranty cost at the time of sale based on anticipated warranty claims and actual historical warranty claims experience including knowledge of specific product failures that are outside of our typical experience.

Occasionally, we enter into license and development agreements with some of our customers and recognize revenue from these agreements upon completion and acceptance by the customer of contract deliverables by milestones or as services are provided, depending on the terms of the arrangement. Revenue is deferred for any amounts billed or received prior to

completion of milestones or delivery of services. We believe the milestone method best depicts efforts expended to transfer services to the customers under most of our development agreements. Certain contracts may include multiple performance obligations in which we allocate revenues to each performance obligation based on observable evidence. When stand-alone selling prices are not directly observable, we use the adjusted market assessment approach or residual approach, if applicable.

We monitor collectability of accounts receivable primarily through review of the accounts receivable aging. Our policy is to record an allowance for doubtful accounts based on specific collection issues we have identified, aging of underlying receivables and historical experience of uncollectible balances. As of December 31, 2019 and 2018, our allowance for doubtful accounts was \$1.2 million.

We have not made any material changes in the accounting methodology we use to record the allowance for doubtful accounts during the past three years. If actual results are not consistent with the assumptions and estimates used, for example, if the financial condition of the customer deteriorated, we may be required to record additional expense that could materially negatively impact our operating results. To date, however, substantially all of our receivables have been collected within the following quarter.

Inventory Valuation

We value our inventory, which includes materials, labor and overhead, at the lower of cost and net realizable value. Cost is computed using standard cost, which approximates actual cost, on a first-in, first-out basis. We periodically write-down our inventory to the lower of cost and net realizable value based on our estimates that consider historical usage and future demand. These factors are impacted by market and economic conditions, technology changes, new product introductions and changes in strategic direction. The calculation of our inventory valuation, specifically the write-down for excess or obsolete inventories, requires management to make assumptions and to apply judgment regarding forecasted customer demand and technological obsolescence that may turn out to be inaccurate. Inventory valuation reserves, once established, are not reversed until the related inventory has been sold or scrapped.

We have not made any material changes in the accounting methodology we use to record inventory reserves during the past three years. We do not believe there is a reasonable likelihood that there will be a material change in the future estimates or assumptions that we use to calculate our inventory reserve. However, if estimates regarding customer demand are inaccurate or changes in technology affect demand for certain products in an unforeseen manner, we may be exposed to losses or gains that could be material.

Product Warranty

Our products are under warranty against defects in material and workmanship generally for a period of one or two years. We accrue for estimated warranty cost at the time of sale based on anticipated warranty claims and actual historical warranty claims experience including knowledge of specific product failures that are outside of our typical experience. The warranty obligation is determined based on product failure rates, cost of replacement and failure analysis cost. We monitor product returns for warranty-related matters and monitor both a specific and general accrual for the related warranty expense based on specific circumstances and general historical experience. Our warranty obligation requires management to make assumptions regarding failure rates and failure analysis costs. If actual warranty costs differ significantly from these estimates, adjustments may be required in the future, which would adversely affect our gross margins and operating results. The warranty liability as of December 31, 2019 and 2018 was immaterial.

Goodwill and Long-Lived Assets

Goodwill is recorded as the difference, if any, between the aggregate consideration paid for an acquisition and the fair value of the acquired net tangible and intangible assets. We evaluate goodwill on an annual basis in the fourth quarter or more frequently if we believe indicators of impairment exist. Significant management judgment is required in performing periodic impairment tests. To review for impairment, we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of any of our reporting unit is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of any of our reporting unit is less than its carrying amount, no further assessment is performed. If, however, we determine that it is more likely than not that the fair value of any of our reporting unit is less than its carrying amount, an impairment loss is recognized in an amount equal to the

excess. If our actual results, or the plans and estimates used in future impairment analyses, are lower than the original estimates used to assess the recoverability of these assets, we could incur additional impairment charges.

We assess the impairment of long-lived assets, which consist primarily of property and equipment and intangible assets, including purchased in-process research and development, whenever events or changes in circumstances indicate that such assets might be impaired and the carrying value may not be recoverable. Events or changes in circumstances that may indicate that an asset is impaired include significant decreases in the market value of an asset, significant underperformance relative to expected historical or projected future results of operations, a change in the extent or manner in which an asset is utilized, significant declines in our overall estimated fair value for a sustained period, shifts in technology, loss of key management or personnel, changes in our operating model or strategy and competitive forces. If events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable and the expected undiscounted future cash flows attributable to the asset are less than the carrying amount of the asset, an impairment loss equal to the excess of the asset's carrying value over its fair value is recorded. Fair value is determined based on the present value of estimated expected future cash flows using a discount rate commensurate with the risk involved, quoted market prices or appraised values, depending on the nature of the assets. Assumptions and estimates about future values and remaining useful lives are complex and often subjective.

During the year ended December 31, 2017, we abandoned a project related to certain developed technology and in-process research and development that resulted in an impairment charge of \$47.0 million. The abandonment of the project was primarily related to change in the product roadmap following the acquisition of ClariPhy. There was no evidence of additional impairment based on the annual impairment testing for the year ended December 31, 2019.

Stock-Based Compensation

We account for stock-based compensation in accordance with authoritative guidance which requires the measurement and recognition of compensation expense for all share-based payment awards made to employees and directors based on the grant date fair values of the awards. The fair value of stock option awards is estimated using the Black-Scholes option pricing model. The fair value of restricted stock units is based on the fair market value of our common stock on the date of grant. The performance-based stock units are subject to the achievement of a pre-established revenue goal and earnings per share on a non-GAAP basis. Once the goals are met, the performance-based stock units are subject to four years of vesting from the original grant date, contingent upon continuous service. The fair value of the performance-based stock units is calculated using the same method as our standard restricted stock units described above once the performance goals are met. The value of the award that is ultimately expected to vest is recognized as expense over the requisite service periods in our consolidated statements of operations. If the award has a market condition, we estimate the fair value using Monte Carlo simulation model and recognize compensation ratably over the service period. We elected to treat share-based payment awards with graded vesting schedules and time-based service conditions as a single award and recognize stock-based compensation expense on a straight-line basis (net of estimated forfeitures) over the requisite service period. Stock-based compensation expenses are classified in the consolidated statement of operations based on the department to which the related employee reports.

We account for stock options or awards issued to non-employees in accordance with the guidance consistent with our accounting of stock-based compensation awards to employees. Stock options or awards to non-employees are accounted for at grant date fair value using the Black-Scholes option pricing model or fair value of our stock. We recognize compensation cost for awards with performance conditions when achievement of those conditions are probable, rather than upon their achievement.

The Black-Scholes option pricing model requires management to make assumptions and to apply judgment in determining the fair value of our awards. The most significant assumptions and judgments include estimating the fair value of underlying stock, expected volatility and expected term. In addition, the recognition of stock-based compensation expense is impacted by estimated forfeiture rates.

We do not believe there is a reasonable likelihood that there will be material changes in the estimates and assumptions we use to determine stock-based compensation expense. In the future, if we determine that other valuation models are more reasonable, the stock-based compensation expense that we record in the future may differ significantly from what we have recorded using the Black-Scholes option or Monte Carlo simulation pricing models.

Income Taxes

Deferred tax assets and liabilities are determined based on differences between financial reporting and tax bases of assets and liabilities, and are measured using the enacted tax rates and laws that will be in effect when and where the differences are expected to reverse. We recognize the deferred income tax effects of a change in tax rates in the period of enactment. We record a valuation allowance to reduce deferred tax assets to the amount that we believe is more likely than not to be realized.

In assessing the need for a valuation allowance, we consider all positive and negative evidence, including scheduled reversals of deferred tax liabilities, historical levels of income, projections of future income, expectations and risk associated with estimates of future taxable income and ongoing prudent and practical tax planning strategies. To the extent that we believe it is more likely than not that some portion of our deferred tax assets will not be realized, we would increase the valuation allowance against deferred tax assets. The determination of recording or releasing a tax valuation allowance is made, in part, pursuant to an assessment performed by management regarding the likelihood that we will generate sufficient future taxable income against which the benefits of our deferred tax assets may or may not be realized. This assessment requires management to exercise significant judgment and make estimates with respect to our ability to generate revenue, gross profits, operating income and taxable income in future periods. Among other factors, management must make assumptions regarding current and projected overall business and semiconductor industry conditions, operating efficiencies, our ability to timely develop, introduce and consistently manufacture new products to meet our customers' needs and specifications, our ability to adapt to technological changes and the competitive environment, which may impact our ability to generate taxable income and, in turn, realize the value of our deferred tax assets. Although we believe that the judgment we used is reasonable, actual results can differ due to a change in market conditions, changes in tax laws and other factors.

We have valuation allowance against deferred tax assets in certain tax jurisdictions for the years ended December 31, 2019, 2018 and 2017. The valuation allowance was established due to negative evidence that included our cumulative losses in the U.S. and various foreign subsidiaries, after considering permanent tax differences. During the year ended December 31, 2017, we released a portion of the federal and state valuation allowance against certain deferred tax assets that were deemed more likely than not to be realized. The valuation allowance release resulted in the recognition of an income tax benefit. During the year ended December 31, 2018, we released a portion of the federal valuation allowance against deferred tax assets as a result of the transfer of an acquired in-process research and development to developed technology in 2018, which allowed the related deferred tax liability to be considered a source of income for realizing deferred tax assets.

In accordance with the Financial Accounting Standards Board's (FASB) guidance on Accounting for Uncertainty in Income Taxes, we perform a comprehensive review of uncertain tax positions regularly. The guidance prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken, or expected to be taken, in a tax return. We determine the tax liability for uncertain tax positions based on a two-step process. The first step is to determine whether it is more likely than not based on technical merits that each income tax position would be sustained upon examination. The second step is to measure the tax benefit as the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement with a tax authority that has full knowledge of all relevant information. The assessment of each tax position requires significant judgment and estimates. We believe our tax return positions are fully supported, but tax authorities could challenge certain positions, which may not be fully sustained. All tax positions are periodically analyzed and adjusted as a result of events, such as the resolution of tax audits, issuance of new regulations or new case law, negotiations with tax authorities, and expiration of statutes of limitations.

On December 22, 2017, Public Law 115-97, informally referred to as the Tax Cuts and Jobs Act (Tax Reform Act) was signed into law. The Tax Reform Act contains significant changes to U.S. federal corporate income taxation, including a reduction of the corporate tax rate from 35% to 21% effective January 1, 2018, a one-time transition tax on deemed mandatory repatriation of accumulated earnings and profits of foreign subsidiaries in conjunction with the elimination of U.S. tax on dividend distributions from foreign subsidiaries, and a temporary 100% first-year depreciation deduction for certain capital investments. The effect of the tax law changes must be recognized in the period of enactment. As a result of the change in tax rate, our deferred tax assets and liabilities are required to be remeasured to reflect their value at a lower tax rate of 21%. SAB 118 allows for a measurement period of up to one year after the enactment date of the new tax legislation to finalize the recording of the related tax impacts. In accordance with SAB 118, as of December 31, 2017, we made a provisional estimate of the remeasurement of the federal deferred tax assets and liabilities as of December 31, 2017 to reflect the reduced U.S. statutory corporate tax rate to 21%, the mandatory repatriation income which was fully absorbed by the U.S. net operating loss, the related valuation allowance offset, and valuation allowance release on deferred tax assets for the federal alternative minimum tax credit that was made refundable by the Tax Reform Act. During 2018, we elected to account for GILTI as a period cost in the year the tax is incurred and made changes to its provisional estimates previously recorded for the mandatory repatriation upon filing of its 2017 U.S. income tax return. The change in the mandatory repatriation income was fully absorbed by the U.S. net operating loss, which is subject to valuation allowance, and resulted in no current tax liability. This measurement period adjustment had no net tax effect after the offsetting change to the valuation allowance. At December 31, 2018, we completed the accounting for all of the enactment-date income tax effects of the Tax Reform Act.

Results of Operations and Key Operating Metrics

The following describes the line items in the statements of operations, which we consider to be our key operating metrics.

Revenue. We generate revenue from sales of our semiconductor products to end customers. A portion of our products is sold indirectly to customers through distributors. Occasionally, we enter into license and development agreements with some of our customers and recognize revenue from these agreements upon completion and acceptance by the customer of contract deliverables by milestones or as services are provided, depending on the terms of the arrangement.

We design and develop high-speed analog and mixed signal semiconductor solutions for the communications and cloud markets. Our revenue is driven by various trends in these markets. These trends include the deployment and broader market adoption of next generation 400G technologies in communications and enterprise networks and the timing of next generation network.

Our revenue is also impacted by changes in the number and average selling prices of our semiconductor products. Our products are typically characterized by a life cycle that begins with higher average selling prices and lower volumes, followed by broader market adoption, higher volumes, and average selling prices that are lower than initial levels.

We operate in industries characterized by rapidly changing technologies and industry standards as well as technological obsolescence. Our revenue growth is dependent on our ability to continually develop and introduce new products to meet the changing technology and performance requirements of our customers, diversify our revenue base and generate new revenue to replace, or build upon, the success of previously introduced products which may be rapidly maturing. As a result, our revenue is impacted to a more significant extent by product life cycles for a variety of products and to a much lesser extent, if any, by any single product. We introduced ColorZ® in 2016 and began to ship in commercial volume in 2017. Sales of ColorZ® comprised 15%, 18% and 17% of our total revenue in 2019, 2018 and 2017, respectively. In 2012, we introduced and began to ship in commercial volume a dual, differential input linear transimpedance/variable-gain amplifier that we identify as product number IN3250TA-SO2D. Sales of IN3250TA-SO2D product comprised 10% of our total revenue in 2017. There were no other products that generated more than 10% of our total revenue in 2019, 2018 or 2017.

The following table is based on the geographic location to which our product is initially shipped. In most cases this will differ from the ultimate location of the end-user of a product containing our technology. For sales to our distributors, their geographic location may be different from the geographic locations of the ultimate end customer. Sales by geography for the periods indicated were:

| | Year Ended December 31, | | |
|---------------------|-------------------------|-------------------|-------------------|
| | 2019 | 2018 | 2017 |
| | (in thousands) | | |
| China | \$ 164,715 | \$ 113,684 | \$ 114,168 |
| United States | 103,402 | 87,545 | 92,620 |
| Thailand..... | 54,468 | 40,884 | 45,205 |
| Other..... | 43,050 | 52,377 | 96,208 |
| | <u>\$ 365,635</u> | <u>\$ 294,490</u> | <u>\$ 348,201</u> |

Cost of revenue. Cost of revenue includes cost of materials such as wafers processed by third-party foundries, costs associated with packaging and assembly, testing and shipping, cost of personnel, including stock-based compensation, as well as equipment associated with manufacturing support, logistics and quality assurance, warranty costs, write-down of inventories, amortization of production mask costs, amortization and impairment of developed technology, amortization of step-up values of inventory, overhead and other indirect costs, such as allocated occupancy and information technology costs.

As some semiconductor products mature and unit volumes increase, their average selling prices may decline. These declines are often paired with improvements in manufacturing yields and lower wafer, assembly and test costs, which offset some of the margin reduction that results from lower prices. However, our gross profit, period over period, may fluctuate as a result of changes in average selling prices due to new product introductions or existing product transitions into larger scale commercial volumes, manufacturing costs as well as our product and customer mix.

Research and development. Research and development expense includes personnel-related expenses, including salaries, stock-based compensation and employee benefits. It also includes pre-production engineering mask costs, software license expenses, prototype wafer, packaging and test costs, design and development costs, testing and evaluation costs, third-party fees paid to consultants, depreciation expense, impairment of in-process research and development, allocated facilities costs

and other indirect costs. All research and development costs are expensed as incurred. We enter into development agreements with some of our customers. Recoveries from nonrecurring engineering services related to early stage technology are recorded as an offset to product development expense incurred in support of this effort and serve as a mechanism to partially recover development expenditures. These reimbursements are recognized upon completion and acceptance by the customer of contract deliverables or milestones. We expect research and development expense to increase in absolute dollars as we continue to invest resources to develop more products and enhance our existing product portfolio.

Sales and marketing. Sales and marketing expense consists primarily of salaries, stock-based compensation, employee benefits, travel, promotions, trade shows, marketing and customer support, commission payments to employees, depreciation expense and other indirect costs. We expect sales and marketing expense to increase in absolute dollars to support the growth of our business and promote our products to current and potential customers.

General and administrative. General and administrative expense consists primarily of salaries, stock-based compensation, employee benefits and expenses for executive management, legal, and finance. In addition, general and administrative expenses include fees for professional services and other indirect costs. We expect general and administrative expense to increase in absolute dollars due to the general growth of our business and the costs associated with continuing to be a public company for, among other things, SEC reporting and compliance, director fees, insurance, transfer agent fees and similar expenses.

Provision (benefit) for income taxes. For the year ended December 31, 2017, we recorded an income tax benefit of \$21.2 million, which reflects an effective tax rate of 22%. The effective tax rate of 22% differs from the statutory rate of 34% primarily due to the effects of the Tax Reform Act that was enacted on December 22, 2017, change in valuation allowance, foreign income taxes provided at lower rates, geographic mix in profitability, unrecognized tax benefits, stock-based compensation adjustments, and recognition of research and development credits. The change in valuation allowance during the year ended December 31, 2017 included an income tax benefit of \$1.1 million from the partial release of valuation allowance against certain federal and state deferred tax assets that were deemed more likely than not to be realized. For the year ended December 31, 2018, we recorded an income tax benefit of \$8.2 million, which reflects an effective tax rate of 8%. The effective tax rate for the year ended December 31, 2018 differed from the statutory rate of 21% primarily due to the change in valuation allowance, foreign income taxes provided at lower rates, geographic mix in operating results, unrecognized tax benefits, recognition of federal and state research and development credits, and windfall tax benefits from stock-based compensation. In addition, the income tax benefit for the year ended December 31, 2018 included the partial release of federal valuation allowance resulting from the transfer of an acquired in-process research and development to developed technology in 2018 which allowed the related deferred tax liability to be considered a source of income for realizing deferred tax assets, as well as the revaluation of the foreign deferred tax liability on the in-process research and development based on the foreign tax rates applicable to the anticipated reversal periods, partially offset by income tax expense for the accrual of unrecognized tax benefit for foreign taxes. For the year ended December 31, 2019, we recorded an income tax expense of \$0.4 million, which reflects an effective tax rate of (0.5%). The effective tax rate for the year ended December 31, 2019 differed from the statutory rate of 21% primarily due to the change in valuation allowance, foreign income taxes provided at lower rates, geographic mix in operating results, unrecognized tax benefits, recognition of federal and state research development credits, and windfall tax benefits from stock-based compensation.

The following table sets forth a summary of our statement of income (loss) for the periods indicated:

| | Year Ended December 31, | | |
|--|-------------------------|--------------------|--------------------|
| | 2019 | 2018 | 2017 |
| | (in thousands) | | |
| Revenue | \$ 365,635 | \$ 294,490 | \$ 348,201 |
| Cost of revenue | 152,814 | 129,345 | 151,698 |
| Gross profit | <u>212,821</u> | <u>165,145</u> | <u>196,503</u> |
| Operating expenses: | | | |
| Research and development | 183,875 | 167,924 | 200,539 |
| Sales and marketing | 47,722 | 43,080 | 42,381 |
| General and administrative | 30,672 | 28,302 | 23,782 |
| Total operating expenses | <u>262,269</u> | <u>239,306</u> | <u>266,702</u> |
| Loss from operations | (49,448) | (74,161) | (70,199) |
| Interest expense | (34,920) | (32,209) | (29,842) |
| Other income | 11,853 | 2,408 | 3,961 |
| Loss before income taxes | (72,515) | (103,962) | (96,080) |
| Provision (benefit) for income taxes | 396 | (8,211) | (21,176) |
| Net loss | <u>\$ (72,911)</u> | <u>\$ (95,751)</u> | <u>\$ (74,904)</u> |

The following table sets forth a summary of our statement of income (loss) as a percentage of each line item to the revenue:

| | Year Ended December 31, | | |
|---|--------------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Revenue..... | 100% | 100% | 100% |
| Cost of revenue..... | 42 | 44 | 44 |
| Gross profit..... | 58 | 56 | 56 |
| Operating expenses: | | | |
| Research and development..... | 50 | 57 | 57 |
| Sales and marketing..... | 13 | 14 | 12 |
| General and administrative..... | 9 | 10 | 7 |
| Total operating expenses..... | 72 | 81 | 76 |
| Loss from operations..... | (14) | (25) | (20) |
| Interest expense..... | (9) | (11) | (9) |
| Other income..... | 3 | 1 | 1 |
| Loss before income taxes..... | (20) | (35) | (28) |
| Provision (benefit) for income taxes..... | — | (3) | (6) |
| Net loss..... | (20)% | (32)% | (22)% |

Comparison of the Years Ended December 31, 2019, 2018 and 2017

Revenue

| | Year Ended December 31, | | | Change | | | |
|--------------|--------------------------------|-------------|-------------|---------------|----------|---------------|----------|
| | 2019 | 2018 | 2017 | 2019 | | 2018 | |
| | 2019 | 2018 | 2017 | Amount | % | Amount | % |
| | (dollars in thousands) | | | | | | |
| Revenue..... | \$ 365,635 | \$ 294,490 | \$ 348,201 | \$ 71,145 | 24% | \$ (53,711) | (15)% |

Revenue for the year ended December 31, 2019 increased by \$71.1 million mainly due to increases in the number of units sold and average selling price (ASP). Revenue for the year ended December 31, 2019 increased primarily due to increases in revenue from cloud products by \$61.0 million and telecommunication products by \$21.0 million, partially offset by decreases in revenue from legacy products by \$10.9 million. The number of units sold increased for the year ended December 31, 2019 by 9% due to higher cloud products sold. The ASP increased by 8% due to decreases in the number of units sold of lower ASP products, such as legacy products, because of larger shipments to customers in the first quarter of 2018 due to an end of life program initiated in 2017. In addition, non-product revenue increased by \$18.0 million due to new license and nonrecurring engineering development agreements. The increase in direct cost associated with the non-product revenue, included in cost of revenue was \$7.9 million for the year ended December 31, 2019.

Revenue for the year ended December 31, 2018 decreased by \$53.7 million mainly due to a decrease in the number of units sold, partially offset by an increase in ASP. Revenue for the year ended December 31, 2018 decreased by \$53.7 million primarily due to decline in revenue from telecommunication products by \$62.5 million and Cortina legacy and transport products by \$23.7 million. The decreases are partially offset by an increase in revenue from cloud products by \$32.5 million. The ASP for the year ended December 31, 2018 increased by 55% due to product mix mainly from decrease in number of units sold of lower ASP products. The decline in revenue from telecommunication products was partly driven by China original equipment manufacturers (OEMs) due to an oversupply which peaked in 2017. The remaining decline in revenue came from North American and European OEMs which also reflected a similar market weakness in communication products. The decline in revenue from Cortina legacy and transport products was due to end of life programs for certain older products initiated in 2017, the last shipments of which were made in the first quarter of 2018.

The U.S. government export restrictions on Huawei were implemented in the middle of our third quarter of 2019, limiting revenue from that customer. However, the effect of this restriction was not material to our revenue from Huawei for the fourth quarter of 2019 insofar as our revenue was essentially flat when compared to the third quarter of 2019. Such restrictions may have inhibited potential growth in 2019, and in the future, we expect such restrictions to dampen potential growth between Huawei and us, as well as other U.S. suppliers, as Huawei has established internal goals to reduce its dependency on U.S. suppliers for any given product to less than 50%. In addition, the outbreak of the coronavirus may affect our business and our international operations, including our operations in Italy. However, the potential impact is difficult to estimate.

Cost of Revenue and Gross Profit

| | Year Ended December 31, | | | Change | | | |
|--|-------------------------|------------|------------|-----------|-----|-------------|-------|
| | | | | 2019 | | 2018 | |
| | 2019 | 2018 | 2017 | Amount | % | Amount | % |
| | (dollars in thousands) | | | | | | |
| Cost of revenue..... | \$ 152,814 | \$ 129,345 | \$ 151,698 | \$ 23,469 | 18% | \$ (22,353) | (15)% |
| Gross profit..... | 212,821 | 165,145 | 196,503 | 47,676 | 29% | (31,358) | (16)% |
| Gross profit as a percentage of revenue..... | 58% | 56% | 56% | — | 2% | — | — |

Cost of revenue and gross profit for the year ended December 31, 2019 increased by \$23.5 million and \$47.8 million, respectively, mainly due to higher revenue as discussed above. Gross profit as percentage of revenue slightly increased from 56% to 58% due mainly to product and revenue mix.

Cost of revenue for the year ended December 31, 2018 decreased by \$22.4 million due mainly to impairment of certain developed technology in 2017, amortization of inventory fair value step-up related to acquired ClariPhy inventories sold in 2017 and decrease in revenue. Gross profit as a percentage of revenue for the year ended December 31, 2018 was comparable to 2017.

Research and Development

| | Year Ended December 31, | | | Change | | | |
|-------------------------------|-------------------------|------------|------------|-----------|----|-------------|-------|
| | | | | 2019 | | 2018 | |
| | 2019 | 2018 | 2017 | Amount | % | Amount | % |
| | (dollars in thousands) | | | | | | |
| Research and development..... | \$ 183,875 | \$ 167,924 | \$ 200,539 | \$ 15,951 | 9% | \$ (32,615) | (16)% |

Research and development expenses for the year ended December 31, 2019 increased by \$16.0 million mainly due to an increase in equity awards which resulted in a \$4.9 million increase in stock-based compensation. Information technology (IT), software tools expenses and allocated expenses increased by \$6.0 million due to increased design activities and higher engineering activities. Testing, laboratory supplies, packaging, outside services and pre-production engineering mask costs increased by \$4.0 million due to an increase in research and development activities.

Research and development expenses for the year ended December 31, 2018 decreased by \$32.6 million primarily due to impairment of certain in-process research and development of \$36.8 million in 2017. Salary and employee benefits decreased by \$5.7 million due to completion of accrual of retention bonus of employees from the ClariPhy acquisition, reduction in employee headcount as a result of restructuring and vacation usage. In addition, testing, laboratory supplies, and consulting expenses increased by \$4.5 million due to cost reduction efforts implemented. These decreases were partially offset by an increase in equity awards, which resulted in a \$8.6 million increase in stock-based compensation expense. In addition, for the year ended December 31, 2017, we recorded reimbursement from a customer related to research and development of \$3.0 million and none in 2018. Depreciation, IT and allocated expenses increased by \$2.8 million due to an increase in equipment, information technology expenses and higher engineering activities of operations group.

We expect research and development expenses to increase due to our acquisition of eSilicon and our strategy to continue to expand our product offerings and enhance our existing product offerings.

Sales and Marketing

| | Year Ended December 31, | | | Change | | | |
|---------------------------|-------------------------|-----------|-----------|----------|-----|--------|----|
| | | | | 2019 | | 2018 | |
| | 2019 | 2018 | 2017 | Amount | % | Amount | % |
| | (dollars in thousands) | | | | | | |
| Sales and marketing | \$ 47,722 | \$ 43,080 | \$ 42,381 | \$ 4,642 | 11% | \$ 699 | 2% |

Sales and marketing expenses for the year ended December 31, 2019 increased by \$4.6 million primarily due to an increase in personnel costs, including stock-based compensation expenses of \$3.1 million. In addition, commission expenses increased by \$0.8 million due to higher revenue.

Sales and marketing expenses for the year ended December 31, 2018 increased by \$0.7 million primarily due to an increase in personnel costs, including stock-based compensation expense of \$3.2 million due to higher equity awards. The increase in the year ended December 31, 2018 was partially offset by a decrease in commission, supplies, travel and allocated expenses by \$2.0 million, due to lower revenue and cost reduction efforts implemented.

General and Administrative

| | Year Ended December 31, | | | Change | | | |
|---------------------------------|-------------------------|-----------|-----------|----------|----|----------|-----|
| | | | | 2019 | | 2018 | |
| | 2019 | 2018 | 2017 | Amount | % | Amount | % |
| | (dollars in thousands) | | | | | | |
| General and administrative..... | \$ 30,672 | \$ 28,302 | \$ 23,782 | \$ 2,370 | 8% | \$ 4,520 | 19% |

General and administrative expenses for the year ended December 31, 2019 increased by \$2.4 million primarily due to an increase in salaries and stock-based compensation by \$2.9 million, mainly due to higher equity awards. In addition, professional fees increased by \$1.4 million due to higher outside legal fees in connection with the acquisition of eSilicon. The increases were partially offset by decreases in bad debts of \$0.6 million and loss on settlement claims related to the ClariPhy acquisition of \$1.8 million.

General and administrative expenses for the year ended December 31, 2018 increased by \$4.5 million primarily due to an increase in salaries and stock-based compensation by \$4.0 million due mainly to higher equity awards. During the year ended December 31, 2018, we recorded a bad debt expense of \$0.6 million and a loss on a settlement of claims related to the ClariPhy acquisition of \$2.2 million. The increases were partially offset by a decrease in professional, consulting fees and public company filing fees by \$0.9 million due to higher fees in 2017 in relation to the acquisition of ClariPhy. In addition, allocated expenses such as facility, human resources and information technology expenses decreased by \$0.8 million due to cost reduction efforts implemented.

Provision (benefit) for Income Taxes

| | Year Ended December 31, | | | Change | | | |
|---|-------------------------|------------|-------------|----------|--------|-----------|-------|
| | | | | 2019 | | 2018 | |
| | 2019 | 2018 | 2017 | Amount | % | Amount | % |
| | (dollars in thousands) | | | | | | |
| Provision (benefit) for income taxes..... | \$ 396 | \$ (8,211) | \$ (21,176) | \$ 8,607 | (105)% | \$ 12,965 | (61)% |

For the year ended December 31, 2019, we recorded provision for income taxes of \$0.4 million, which reflects an effective tax rate of (0.5%). The effective tax rate for the year ended December 31, 2019 differed from the statutory rate of 21% primarily due to the change in valuation allowance, foreign income taxes provided at lower rates, geographic mix in operating results, unrecognized tax benefits, recognition of federal and state research development credits, and windfall tax benefits from stock-based compensation.

For the year ended December 31, 2018, we recorded an income tax benefit of \$8.2 million, which reflects an effective tax rate of 8%. The effective tax rate for the year ended December 31, 2018 differed from the statutory rate of 21% primarily due to the change in valuation allowance, foreign income taxes provided at lower rates, geographic mix in operating results, unrecognized tax benefits, recognition of federal and state research and development credits, and windfall tax benefits from stock-based compensation. In addition, the income tax benefit for the year ended December 31, 2018 included the partial release of federal valuation allowance resulting from the transfer of an acquired in-process research and development to developed technology in 2018 which allowed the related deferred tax liability to be considered a source of income for realizing deferred tax assets, as well as the revaluation of the foreign deferred tax liability on the in-process research and development based on the foreign tax rates applicable to the anticipated reversal periods, partially offset by income tax expense for the accrual of unrecognized tax benefit for foreign taxes.

For the year ended December 31, 2017, we recorded an income tax benefit of \$21.2 million, which reflects an effective tax rate of 22%. The effective tax rate of 22% differs from the statutory rate of 34% primarily due to the effects of the Tax Reform Act that was enacted on December 22, 2017, change in valuation allowance, foreign income taxes provided at lower rates, geographic mix in profitability, unrecognized tax benefits, stock-based compensation adjustments, and recognition of research and development credits. The change in valuation allowance during the year ended December 31, 2017, included an income tax benefit of \$1.1 million from the partial release of federal and state valuation allowance.

Our effective tax rate in the future will depend upon the proportion of our income before provision for income taxes earned in the United States and in jurisdictions with a tax rate lower than the U.S. statutory rate, as well as a number of other factors, including excess tax benefits from share-based compensation, settlement of tax contingency items, and the impact of new legislation.

Liquidity and Capital Resources

As of December 31, 2019, we had cash and cash equivalents and investments in marketable securities of \$422.9 million. Our primary uses of cash are to fund operating expenses, purchase inventory, acquire property and equipment and business acquisitions. Cash used to fund operating expenses is impacted by the timing of when we pay these expenses, as reflected in the changes in our outstanding accounts payable and accrued expenses. Our primary sources of cash are cash receipts on accounts receivable from our revenue. In 2016 and 2015, we issued convertible debt, which resulted in an increase in cash and cash equivalents. Aside from the growth in amounts billed to our customers, net cash collections of accounts receivable are impacted by the efficiency of our cash collections process, which can vary from period to period, depending on the timing of shipments and payment cycles of our major customers.

The consolidated statements of cash flows for the years ended December 31, 2018 and December 31, 2017 have been revised to correct prior period classification error as discussed in Note 1, "Organization and Summary of Significant Accounting Policies" to our consolidated financial statements included in this Annual Report on Form 10-K. Accordingly, the discussion below reflects the impact of those revisions.

The following table summarizes our cash flows for the periods indicated:

| | Year Ended December 31, | | |
|--|--------------------------------|-----------------|------------------|
| | 2019 | 2018 | 2017 |
| | (in thousands) | | |
| Net cash provided by operating activities..... | \$ 96,944 | \$ 78,159 | \$ 77,308 |
| Net cash provided by (used in) investing activities..... | 63,017 | (35,650) | (24,653) |
| Net cash used in financing activities..... | (49,256) | (33,941) | (34,072) |
| Net increase in cash and cash equivalents..... | <u>\$ 110,705</u> | <u>\$ 8,568</u> | <u>\$ 18,583</u> |

Net Cash Provided by Operating Activities

Net cash provided by operating activities in 2019 primarily reflected depreciation and amortization of \$96.7 million, stock-based compensation expenses of \$76.9 million, and accretion of convertible debt and amortization of issuance expenses of \$28.4 million, partially offset by a net loss of \$72.9 million, net unrealized gain on equity investment of \$2.2 million, gain on sale of equity investment of \$0.9 million, amortization of discount on marketable securities of \$1.1 million, increases in accounts receivable of \$1.5 million, inventories of \$22.0 million and prepaid expenses and other assets of \$2.7 million and decreases in deferred revenue of \$1.7 million and accrued expenses of \$0.8 million. Our accounts receivable increased due mainly to increase in revenue. Our inventories increased due to build-up of inventories for future shipments. Our prepaid expenses and other assets increased due to receivable from mask sharing arrangement. Our deferred revenue decreased due to services provided or milestone completions. Our accrued expenses decreased due to payments.

Net cash provided by operating activities in 2018 primarily reflected depreciation and amortization of \$82.7 million, stock-based compensation expense of \$63.9 million, impairment of non-marketable equity investment of \$7.0 million, accretion of convertible debt and amortization of issuance expenses of \$26.4 million, decrease in accounts receivable of \$6.7 million and prepaid expenses and other assets of \$0.5 million and increases in accounts payable of \$2.0 million and deferred revenue of \$5.0 million, partially offset by a net loss of \$95.8 million, deferred income taxes of \$8.6 million, net unrealized gain on equity investments of \$2.4 million, increases in inventories of \$1.3 million, decreases in accrued expenses of \$4.9 million and other liabilities of \$1.1 million, and change in income tax payable/receivable of \$1.7 million. Our accounts receivable decreased due mainly to collections. Our prepaid and other assets decreased due to amortization. Our inventories and accounts payable increased due to an increase in production volume for shipment in the first quarter of 2019. Our deferred revenue increased due to billing to a customer in which revenue will be recognized in the future. Our accrued expenses decreased mainly due to the timing of payment of employee-related expenses. Other liabilities decreased due to payment of liability to a customer related to the ClariPhy acquisition.

Net Cash Provided by (Used in) Investing Activities

Net cash provided by investing activities in 2019 primarily consisted of sales and maturities of marketable securities of \$371.5 million and proceeds from sale of an equity investment of \$3.4 million, partially offset by purchases of marketable securities of \$274.2 million, purchases of property and equipment of \$29.5 million, purchases of intangible assets of \$1.1 million and purchases of equity investments of \$7.0 million.

Net cash used in investing activities in 2018 primarily consisted of purchases of marketable securities of \$248.0 million, purchases of property and equipment of \$31.7 million and purchases of equity investments of \$12.8 million, partially offset by proceeds from maturities and sales of marketable securities of \$254.5 million and proceeds from sale of equity investment of \$2.4 million.

Net Cash Used in Financing Activities

Net cash used in financing activities in 2019 primarily consisted of minimum tax withholding paid on behalf of employees for net share settlement of \$33.6 million, payments of obligations related to purchase of intangible assets of \$24.2 million and payment of equipment financing obligations of \$0.4 million, partially offset by proceeds from exercises of stock options and employee stock purchase plan purchases of \$9.0 million.

Net cash used in financing activities in 2018 primarily consisted of minimum tax withholding paid on behalf of employees for net share settlement of \$19.1 million, payments related to purchase of intangible assets of \$21.3 million and payment of equipment financing obligations of \$0.5 million, partially offset by proceeds from exercise of stock options and employee stock purchase plan purchases of \$6.6 million and repayment of long-term loan provided to a supplier of \$0.4 million.

Operating and Capital Expenditure Requirements

Our principal sources of liquidity as of December 31, 2019 consisted of \$422.9 million of cash, cash equivalents and investments in marketable securities. Based on our current operating plan, we believe that our existing cash and cash equivalents and investments in marketable securities from operations will be sufficient to finance our operational cash needs through at least the next 12 - 18 months. In the future, we expect our operating and capital expenditures to increase as we increase headcount, expand our business activities and grow our end customer base which will result in higher needs for working capital. Our ability to generate cash from operations is also subject to substantial risks described in Part I, "Item 1A, Risk Factors." If any of these risks occur, we may be unable to generate or sustain positive cash flow from operating activities. We would then be required to use existing cash and cash equivalents to support our working capital and other cash requirements. If additional funds are required to support our working capital requirements, acquisitions or other purposes, we may seek to raise funds through equity or debt financing or from other sources. If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our stockholders could be significantly diluted, and these newly-issued securities may have rights, preferences or privileges senior to those of existing stockholders. If we raise additional funds by obtaining loans from third parties, the terms of those financing arrangements may include negative covenants or other restrictions on our business that could impair our operating flexibility, and would also require us to incur interest expense. We can provide no assurance that additional financing will be available at all or, if available, that we would be able to obtain additional financing on terms favorable to us.

Contractual Obligations, Commitments and Contingencies

The following table summarizes our outstanding contractual obligations as of December 31, 2019:

| | Payments due by period | | | | |
|---|-------------------------------|-----------------------------|------------------|------------------|------------------------------|
| | Total | Less Than 1 Year | 1-3 Years | 3-5 Years | More Than 5 Years |
| | (in thousands) | | | | |
| Convertible debt | \$ 517,500 | \$ 230,000 | \$ 287,500 | — | — |
| Interest payable on convertible debt | 6,900 | 4,744 | 2,156 | — | — |
| Operating lease obligations | 52,949 | 4,455 | 12,525 | \$ 12,339 | \$ 23,630 |
| Obligations related to software license intangibles..... | 66,400 | 26,531 | 39,869 | — | — |
| Obligations under service contract | 3,592 | 1,508 | 1,625 | 459 | — |
| Obligations under equipment financing | 457 | 364 | 93 | — | — |

As of December 31, 2019, we recorded a liability for our uncertain tax position of \$0.7 million. We are unable to reasonably estimate the timing of payments in individual years due to uncertainties in the timing of the effective settlement of tax positions.

We depend upon third-party subcontractors to manufacture our wafers. Our subcontractor relationships typically allow for the cancellation of outstanding purchase orders, but require payment of all expenses incurred through the date of cancellation. As of December 31, 2019, the total value of open purchase orders for wafers was approximately \$14.9 million. As of December 31, 2019, we have a commitment to pay \$0.5 million of mask costs.

Off-Balance Sheet Arrangements

Since our inception, we have not engaged in any off-balance sheet arrangements, such as the use of structured finance, special purpose entities or variable interest entities.

Recent Authoritative Accounting Guidance

See Note 1 of the Notes to our Consolidated Financial Statements for information regarding recently issued accounting pronouncements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Sensitivity

We had cash and cash equivalents and investments in marketable securities of \$422.9 million and \$407.4 million at December 31, 2019 and December 31, 2018, respectively, which was held for working capital purposes. Our exposure to market interest-rate risk relates primarily to our investment portfolio. We do not use derivative financial instruments to hedge the market risks of our investments. We manage our total portfolio to encompass a diversified pool of investment-grade securities to preserve principal and maintain liquidity. We place our investments with high-quality issuers, money market funds and debt securities. Our investment portfolio as of December 31, 2019 consisted of money market funds, U.S. treasury securities, municipal bonds, corporate bonds, variable rate demand notes, commercial paper and asset-backed securities. Investments in both fixed rate and floating rate instruments carry a degree of interest rate risk. Fixed rate securities may have their market value adversely impacted due to an increase in interest rates, while floating rate securities may produce less income than expected if interest rates fall. Due in part to these factors, our future investment income may fall short of expectations due to changes in interest rates or if the decline in fair value of our publicly traded debt investments is judged to be other-than-temporary. We may suffer losses in principal if we are forced to sell securities that have declined in market value due to changes in interest rates. However, because any debt securities we hold are classified as available-for-sale, no gains or losses are realized in the income statement due to changes in interest rates unless such securities are sold prior to maturity or unless declines in value are determined to be other-than-temporary. These securities are reported at fair value with the related unrealized gains and losses, net of applicable taxes, included in accumulated other comprehensive income, reported in a separate component of stockholders' equity. Although we currently expect that our ability to access or liquidate these investments as needed to support our business activities will continue, we cannot ensure that this will not change. We believe that, if market interest rates were to change immediately and uniformly by 10% from levels at December 31, 2019, the impact on the fair value of these securities or our cash flows or income would not be material.

In a low interest rate environment, as short-term investments mature, reinvestment can occur at less favorable market rates. Given the short-term nature of certain investments, the current interest rate environment may negatively impact our investment income.

As of December 31, 2019, we had outstanding debt of \$517.5 million in the form of convertible notes. The fair value of our convertible notes is subject to interest rate risk, market risk and other factors due to the convertible feature. The fair value of our convertible notes will generally increase as interest rates fall and decrease as interest rates rise. In addition, the fair value of our convertible notes will generally increase as our common stock price increases and will generally decrease as our common stock price declines in value. The interest and market value changes affect the fair value of our convertible notes but do not impact our financial position, cash flows or results of operations due to the fixed nature of the debt obligation.

Our cash and cash equivalents and investment in marketable securities at December 31, 2019 consisted of \$395.8 million held domestically, with the remaining balance of \$27.1 million held by foreign subsidiaries. There may be adverse tax effects upon repatriation of these funds to the United States. We do not plan to repatriate cash balances from foreign subsidiaries to fund our operations in the United States.

Foreign Currency Risk

To date, our international customer and vendor agreements have been denominated almost exclusively in United States dollars. Accordingly, we have limited exposure to foreign currency exchange rates and currently enter into immaterial foreign currency hedging transactions.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Inphi Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Inphi Corporation and its subsidiaries (the “Company”) as of December 31, 2019 and 2018, and the related consolidated statements of income (loss), comprehensive income (loss), stockholders’ equity and cash flows for each of the three years in the period ended December 31, 2019, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Changes in Accounting Principles

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019 and the manner in which it accounts for revenues from contracts with customers in 2018.

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 Annual Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and 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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the

transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Inventory Valuation – Write-down for Excess or Obsolete Inventories

As described in Note 1 to the consolidated financial statements, inventories are stated at the lower of cost and net realizable value. As of December 31, 2019, the Company's consolidated inventories balance was \$55.0 million. Inventories are reduced for write-downs based on periodic reviews for evidence of slow-moving or obsolete parts. Management writes down the value of inventory based on the comparison between inventory on hand and forecasted customer demand for each specific product. Inventory write-downs are also established when conditions indicate the net realizable value is less than cost due to physical deterioration, technological obsolescence, changes in price level or other causes. As disclosed by management, the calculation of inventory valuation, specifically the write-down for excess or obsolete inventories, requires management to make assumptions and to apply judgment regarding forecasted customer demand and technological obsolescence.

The principal considerations for our determination that performing procedures relating to inventory valuation, specifically the write-down for excess or obsolete inventories, is a critical audit matter are there was significant judgment by management when estimating the write-down, including the assumption related to technological obsolescence. This in turn led to significant auditor judgment, subjectivity, and effort in performing procedures and evaluating evidence relating to the technological obsolescence assumption.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the Company's inventory valuation, including controls over management's write-down for excess or obsolete inventories. These procedures also included, among others, (i) evaluating the appropriateness of and testing management's process for the write-down for excess or obsolete inventories, (ii) testing the completeness and accuracy of underlying data used by management, and (iii) evaluating the reasonableness of management's technological obsolescence assumption. Evaluating management's assumption related to technological obsolescence involved evaluating whether the assumption used by management was reasonable considering (i) historical customer purchasing patterns, (ii) customer contracts, (iii) industry trends, and (iv) whether the assumption was consistent with evidence obtained in other areas of the audit.

/s/ PricewaterhouseCoopers LLP
Los Angeles, California
March 2, 2020

We have served as the Company's auditor since 2002.

Inphi Corporation
Consolidated Balance Sheets
(in thousands, except share and per share amounts)

| | December 31, | |
|--|---------------------|-------------|
| | 2019 | 2018 |
| Assets | | |
| Current assets: | | |
| Cash and cash equivalents | \$ 282,723 | \$ 172,018 |
| Investments in marketable securities | 140,131 | 235,339 |
| Accounts receivable, net | 60,295 | 61,271 |
| Inventories | 55,013 | 33,052 |
| Prepaid expenses and other current assets | 17,463 | 9,600 |
| Total current assets | 555,625 | 511,280 |
| Property and equipment, net | 79,563 | 70,740 |
| Goodwill | 104,502 | 104,502 |
| Intangible assets, net | 168,290 | 180,447 |
| Right of use assets, net | 33,576 | — |
| Other assets, net | 34,450 | 22,904 |
| Total assets | \$ 976,006 | \$ 889,873 |
| Liabilities and Stockholders' Equity | | |
| Current liabilities: | | |
| Accounts payable | \$ 18,771 | \$ 15,891 |
| Deferred revenue | 3,719 | 5,432 |
| Accrued employee expenses | 13,164 | 11,206 |
| Other accrued expenses | 5,125 | 7,595 |
| Convertible debt | 217,467 | — |
| Other current liabilities | 33,531 | 24,319 |
| Total current liabilities | 291,777 | 64,443 |
| Convertible debt | 258,711 | 447,825 |
| Other long-term liabilities | 78,917 | 10,911 |
| Total liabilities | 629,405 | 523,179 |
| Commitments and contingencies (Note 16) | | |
| Stockholders' equity: | | |
| Preferred stock, \$0.001 par value; 10,000,000 shares authorized; no shares issued | — | — |
| Common stock, \$0.001 par value; 500,000,000 shares authorized; 45,909,466 and 44,292,722 issued and outstanding at December 31, 2019 and 2018, respectively | 46 | 44 |
| Additional paid-in capital | 587,862 | 536,157 |
| Accumulated deficit | (242,807) | (169,896) |
| Accumulated other comprehensive income | 1,500 | 389 |
| Total stockholders' equity | 346,601 | 366,694 |
| Total liabilities and stockholders' equity | \$ 976,006 | \$ 889,873 |

The accompanying notes are an integral part of these consolidated financial statements.

Inphi Corporation
Consolidated Statements of Income (Loss)
(in thousands, except share and per share amounts)

| | Year Ended December 31, | | |
|---|--------------------------------|--------------------|--------------------|
| | 2019 | 2018 | 2017 |
| Revenue..... | \$ 365,635 | \$ 294,490 | \$ 348,201 |
| Cost of revenue..... | 152,814 | 129,345 | 151,698 |
| Gross profit..... | <u>212,821</u> | <u>165,145</u> | <u>196,503</u> |
| Operating expenses: | | | |
| Research and development..... | 183,875 | 167,924 | 200,539 |
| Sales and marketing..... | 47,722 | 43,080 | 42,381 |
| General and administrative..... | 30,672 | 28,302 | 23,782 |
| Total operating expenses..... | <u>262,269</u> | <u>239,306</u> | <u>266,702</u> |
| Loss from operations..... | (49,448) | (74,161) | (70,199) |
| Interest expense..... | (34,920) | (32,209) | (29,842) |
| Other income, net..... | 11,853 | 2,408 | 3,961 |
| Loss before income taxes..... | (72,515) | (103,962) | (96,080) |
| Provision (benefit) for income taxes..... | 396 | (8,211) | (21,176) |
| Net loss..... | <u>\$ (72,911)</u> | <u>\$ (95,751)</u> | <u>\$ (74,904)</u> |
| Earnings per share: | | | |
| Basic..... | <u>\$ (1.61)</u> | <u>\$ (2.19)</u> | <u>\$ (1.78)</u> |
| Diluted..... | <u>\$ (1.61)</u> | <u>\$ (2.19)</u> | <u>\$ (1.78)</u> |
| Weighted-average shares used in computing earnings per share: | | | |
| Basic..... | 45,226,717 | 43,690,581 | 42,165,213 |
| Diluted..... | 45,226,717 | 43,690,581 | 42,165,213 |

The accompanying notes are an integral part of these consolidated financial statements.

Inphi Corporation
Consolidated Statements of Comprehensive Income (Loss)
(in thousands)

| | Year Ended December 31, | | |
|---|-------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Net loss..... | \$ (72,911) | \$ (95,751) | \$ (74,904) |
| Other comprehensive income (loss): | | | |
| Available for sale investments: | | | |
| Change in unrealized gain or loss, net of \$0, \$0, and \$0 | | | |
| tax expense in 2019, 2018 and 2017, respectively..... | 1,173 | (179) | (9) |
| Realized gain reclassified into earnings, net of tax | (62) | (1) | (1) |
| Comprehensive loss..... | \$ (71,800) | \$ (95,931) | \$ (74,914) |

The accompanying notes are an integral part of these consolidated financial statements.

Inphi Corporation
Consolidated Statements of Stockholders' Equity
(in thousands, except share amounts)

| | Common Stock | | Additional Paid-in Capital | Retained Earnings (Accumulated Deficit) | Accumulated Other Comprehensive Income | Total Stock- holders' Equity |
|---|--------------|--------|----------------------------------|--|---|---------------------------------------|
| | Shares | Amount | | | | |
| Balance at December 31, 2016..... | 41,303,363 | \$ 41 | \$ 459,928 | \$ 1,976 | \$ 579 | \$ 462,524 |
| Issuance of common stock from exercise of stock options..... | 300,982 | 1 | 2,174 | — | — | 2,175 |
| Issuance of common stock from restricted stock unit grants, net of shares withheld for tax..... | 1,004,785 | 1 | (27,776) | — | — | (27,775) |
| Issuance of common stock from employee stock purchase plan | 171,099 | — | 5,776 | — | — | 5,776 |
| Stock-based compensation expense | — | — | 44,832 | — | — | 44,832 |
| Cumulative effect of change in accounting principle..... | — | — | — | (1,217) | — | (1,217) |
| Net loss..... | — | — | — | (74,904) | — | (74,904) |
| Other comprehensive loss, net..... | — | — | — | — | (10) | (10) |
| Balance at December 31, 2017..... | 42,780,229 | \$ 43 | \$ 484,934 | \$ (74,145) | \$ 569 | \$ 411,401 |
| Issuance of common stock from exercise of stock options..... | 187,742 | — | 719 | — | — | 719 |
| Issuance of common stock from restricted stock unit grant, net of shares withheld for tax..... | 1,041,258 | 1 | (19,286) | — | — | (19,285) |
| Issuance of common stock from employee stock purchase plan | 283,493 | — | 5,906 | — | — | 5,906 |
| Stock-based compensation expense | — | — | 63,884 | — | — | 63,884 |
| Net loss..... | — | — | — | (95,751) | — | (95,751) |
| Other comprehensive loss, net..... | — | — | — | — | (180) | (180) |
| Balance at December 31, 2018..... | 44,292,722 | \$ 44 | \$ 536,157 | \$ (169,896) | \$ 389 | \$ 366,694 |
| Issuance of common stock from exercise of stock options..... | 253,980 | — | 2,616 | — | — | 2,616 |
| Issuance of common stock from restricted stock unit grant, net of shares withheld for tax..... | 1,154,043 | 2 | (34,140) | — | — | (34,138) |
| Issuance of common stock from employee stock purchase plan | 208,721 | — | 6,374 | — | — | 6,374 |
| Stock-based compensation expense | — | — | 76,855 | — | — | 76,855 |
| Net loss..... | — | — | — | (72,911) | — | (72,911) |
| Other comprehensive loss, net..... | — | — | — | — | 1,111 | 1,111 |
| Balance at December 31, 2019..... | 45,909,466 | \$ 46 | \$ 587,862 | \$ (242,807) | \$ 1,500 | \$ 346,601 |

The accompanying notes are an integral part of these consolidated financial statements.

Inphi Corporation
Consolidated Statements of Cash Flows
(in thousands)

| | Year Ended December 31, | | |
|---|-------------------------|-------------------|-------------------|
| | 2019 | 2018 | 2017 |
| Cash flows from operating activities | | | |
| Net loss | \$ (72,911) | \$ (95,751) | \$ (74,904) |
| Adjustments to reconcile net loss to net cash provided by operating activities: | | | |
| Depreciation and amortization | 96,694 | 82,719 | 77,855 |
| Stock-based compensation | 76,855 | 63,884 | 44,833 |
| Gain from sale of an equity investment..... | (924) | — | — |
| Loss (gain) on disposal of property and equipment..... | 444 | 331 | (174) |
| Net unrealized gain on equity investments..... | (2,201) | (2,441) | — |
| Impairment of non-marketable equity investment..... | — | 7,000 | — |
| Impairment of intangible assets..... | — | — | 47,014 |
| Deferred income taxes..... | 337 | (8,628) | (22,428) |
| Accretion of convertible debt and amortization of issuance expenses.... | 28,353 | 26,394 | 24,574 |
| Amortization of premiums (discount) on marketable securities..... | (1,118) | (583) | 1,040 |
| Other noncash items..... | (46) | 2 | (10) |
| Changes in assets and liabilities: | | | |
| Accounts receivable | (1,524) | 6,722 | (17,392) |
| Inventories..... | (21,961) | (1,331) | 318 |
| Prepaid expenses and other assets | (2,707) | 549 | 2,272 |
| Income tax payable/receivable | 279 | (1,671) | (638) |
| Accounts payable | 482 | 1,963 | 1,655 |
| Accrued expenses..... | (805) | (4,902) | (554) |
| Deferred revenue..... | (1,713) | 4,997 | (3,195) |
| Other liabilities..... | (590) | (1,095) | (2,958) |
| Net cash provided by operating activities..... | <u>96,944</u> | <u>78,159</u> | <u>77,308</u> |
| Cash flows from investing activities | | | |
| Purchases of property and equipment | (29,518) | (31,713) | (37,437) |
| Proceeds from disposal of property and equipment | — | 145 | 100 |
| Purchases of marketable securities..... | (274,246) | (248,038) | (261,247) |
| Sales of marketable securities | 168,426 | 11,654 | 85,163 |
| Maturities of marketable securities | 203,068 | 242,825 | 182,299 |
| Proceeds from sale of equity investments | 3,424 | 2,414 | — |
| Proceeds from sale of discontinued operations | — | — | 10,690 |
| Acquisition of business, net of cash acquired..... | — | — | (1,800) |
| Purchases of intangible assets | (1,137) | (126) | (2,421) |
| Purchases of equity investment in private companies | (7,000) | (12,811) | — |
| Net cash provided by (used in) investing activities | <u>63,017</u> | <u>(35,650)</u> | <u>(24,653)</u> |
| Cash flows from financing activities | | | |
| Proceeds from exercise of stock options | 2,616 | 719 | 2,214 |
| Proceeds from employee stock purchase plan..... | 6,374 | 5,906 | 5,776 |
| Minimum tax withholding paid on behalf of employees for net share settlement..... | (33,596) | (19,118) | (27,673) |
| Payments of obligations related to purchase of intangible assets | (24,221) | (21,311) | (13,688) |
| Repayment of long-term loan..... | — | 405 | 333 |
| Payments of obligations related to equipment financing..... | (429) | (542) | (1,034) |
| Net cash used in financing activities | <u>(49,256)</u> | <u>(33,941)</u> | <u>(34,072)</u> |
| Net increase in cash and cash equivalents..... | 110,705 | 8,568 | 18,583 |
| Cash and cash equivalents at beginning of year | 172,018 | 163,450 | 144,867 |
| Cash and cash equivalents at end of year | <u>\$ 282,723</u> | <u>\$ 172,018</u> | <u>\$ 163,450</u> |
| Supplemental cash flow information | | | |
| Income taxes paid (refund received) | \$ (155) | \$ 2,155 | \$ 2,158 |
| Interest paid..... | 6,577 | 5,818 | 5,194 |
| Supplemental disclosure of non-cash investing and financing activities | | | |
| Software license intangible assets | 57,406 | 20,066 | 2,888 |
| Equity investment acquired as settlement of receivable from a customer | <u>2,500</u> | <u>—</u> | <u>—</u> |

The accompanying notes are an integral part of these consolidated financial statements.

Inphi Corporation
Notes to Consolidated Financial Statements
(Dollars in thousands except share and per share amounts)

1. Organization and Summary of Significant Accounting Policies

Inphi Corporation (the “Company”), a Delaware corporation, was incorporated in November 2000. The Company is a fabless provider of high-speed analog and mixed signal semiconductor solutions for the communications and cloud markets. The Company’s semiconductor solutions are designed to address bandwidth bottlenecks in networks, maximize throughput and minimize latency in computing environments and enable the rollout of next generation communications and cloud infrastructures. In addition, the semiconductor solutions provide a vital high-speed interface between analog signals and digital information in high-performance systems such as telecommunications transport systems, enterprise networking equipment and data centers.

The Company is subject to certain risks and uncertainties and believes changes in any of the following areas could have a material adverse effect on the Company’s future financial position or results of operations or cash flows: ability to sustain profitable operations due to losses incurred and accumulated deficit, dependence on a limited number of customers for a substantial portion of revenue, product defects, risks related to intellectual property matters, lengthy sales cycle and competitive selection process, lengthy and expensive qualification process, ability to develop new or enhanced products in a timely manner, market development of and demand for the Company’s products, reliance on third parties to manufacture, assemble and test products and ability to compete.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America (“GAAP”) and include the accounts of the Company and subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Revisions

In connection with the preparation of the Company’s 2019 year-end consolidated financial statements, a classification error in the Company’s previously issued consolidated statements of cash flows was identified. Specifically, it was determined that payments made under the Company’s multi-year agreements for the purchase of internal use intangible assets should have been classified as use of cash for financing activities and not as use of cash for investing activities as originally presented. Such classification error had no impact on the Company’s consolidated balance sheets, statements of income (loss), statements of comprehensive income (loss) or statements of stockholders’ equity. The Company has concluded that such classification error did not result in the previously issued financial statements being materially misstated. However, the Company has revised the accompanying 2018 and 2017 consolidated statements of cash flows to correct for such classification error. The effect of the revisions on the consolidated statement of cash flows for the year ended December 31, 2018 was as follows: (i) cash used in investing activities decreased \$21,311 from \$56,961 to \$35,650, and (ii) cash used in financing activities increased \$21,311 from \$12,630 to \$33,941. The effect of the revisions on the consolidated statement of cash flows for the year ended December 31, 2017 was as follows: (i) cash used in investing activities decreased \$13,688 from \$38,341 to \$24,653, and (ii) cash used in financing activities increased \$13,688 from \$20,384 to \$34,072.

See also note 18 for further information regarding the impact of this classification error on the Company’s 2019 and 2018 unaudited interim condensed consolidated financial statements.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Inphi Corporation
Notes to Consolidated Financial Statements
(Dollars in thousands except share and per share amounts)

On an ongoing basis, management evaluates its estimates, including those related to (i) the collectibility of accounts receivable and allowance for distributors' price discounts; (ii) write-down for excess and obsolete inventories; (iii) warranty obligations; (iv) the value assigned to and estimated useful lives of long-lived assets; (v) the realization of tax assets and estimates of tax liabilities and tax reserves; (vi) the measurement of non-marketable equity securities; (vii) amounts recorded in connection with acquisitions; (viii) recoverability of intangible assets and goodwill; and (ix) the recognition and disclosure of fair value of convertible debt and contingent liabilities. These estimates are based on historical data and experience, as well as various other factors that management believes 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. The Company engages third party valuation specialists to assist with estimates related to the valuation of certain financial instruments and assets associated with various contractual arrangements, and valuation of assets acquired in connection with acquisitions. Such estimates often require the selection of appropriate valuation methodologies and models, and significant judgment in evaluating ranges of assumptions and financial inputs. Actual results may differ from those estimates under different assumptions or circumstances.

Foreign Currency Translation

The Company and its subsidiaries use the U.S. dollar as its functional currency. Foreign currency assets and liabilities are remeasured into U.S. dollars at the end-of-period exchange rates except for non-monetary assets and liabilities, which are remeasured at historical exchange rates. Revenue and expenses are remeasured at the exchange rate in effect during the period the transaction occurred, except for those expenses related to balance sheet amounts, which are remeasured at historical exchange rates. Gains or losses from foreign currency transactions are included in the consolidated statements of income (loss) as part of "other income, net." Foreign currency gain (loss) in 2019, 2018 and 2017 were (\$453), (\$135) and \$22, respectively.

Cash and Cash Equivalents

The Company considers all highly liquid investments with an original or remaining maturity of three months or less at the date of purchase to be cash equivalents. The Company maintains its cash and cash equivalents with major financial institutions and, at times, such balances with any one financial institution may exceed Federal Deposit Insurance Corporation insurance limits. Cash equivalents primarily consist of money market funds.

Fair Market Value of Financial Instruments

The carrying amount reflected in the balance sheet for cash and cash equivalents, accounts receivable, prepaid and other current assets, accounts payable and other current liabilities, approximate fair value due to the short-term nature of these financial instruments.

Investments

Investments in marketable securities consist of available-for-sale securities. These investments are recorded at fair value with changes in fair value, net of applicable taxes, recorded as unrealized gains (losses) as a component of accumulated other comprehensive income in stockholders' equity. Realized gains and losses are included in Other income, net. The cost basis for realized gains and losses on available-for-sale securities is determined on a specific identification basis. The Company periodically evaluates whether declines in fair values of its investments below their book values are other-than-temporary. When the fair value is lower than the amortized cost, the Company considers whether: (1) it has the intent to sell the security; (2) it is more likely than not that it will be required to sell the security before recovery; or (3) it expects to recover the entire amortized cost basis of the security. If the Company intends to sell the security or it is more likely than not that it will be required to sell the security, the entire difference between the amortized cost and fair value is recognized in other income, net. If the Company does not intend to sell a security and it is not more likely than not that it will be required to sell the security but the security has suffered an impairment related to credit, the credit loss is bifurcated from the total decline in value and recorded in other income, net with the remaining portion recorded within accumulated other comprehensive income in stockholders' equity. Investments are made based on the Company's investment policy which restricts the types of investments that can be made. The Company classified available-for-sale securities as short-term as the investments are available to be used in current operations.

Inphi Corporation
Notes to Consolidated Financial Statements
(Dollars in thousands except share and per share amounts)

On January 1, 2018, the Company adopted ASU 2016-01, Financial Instruments – Recognition and Measurement of Financial Assets and Financial Liabilities, which changed the way the Company accounts for non-marketable equity investments. The Company adjusts the carrying value of non-marketable equity investments to fair value upon observable transactions for identical or similar investments of the same issuer or impairment (referred to as the measurement alternative). All gains and losses on non-marketable equity investments, realized and unrealized, are recognized in other income, net. There was no cumulative effect adjustment upon adoption of this guidance.

Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is computed using standard cost, which approximates actual cost, on a first-in, first-out basis. Inventories are reduced for write-downs based on periodic reviews for evidence of slow-moving or obsolete parts. The write-down is based on the comparison between inventory on hand and forecasted customer demand for each specific product. Once written down, inventory write-downs are not reversed until the inventory is sold or scrapped. Inventory write-downs are also established when conditions indicate the net realizable value is less than cost due to physical deterioration, technological obsolescence, changes in price level or other causes.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation and amortization. Depreciation and amortization is provided on property and equipment over the estimated useful lives on a straight-line basis. Leasehold improvements are amortized on a straight-line basis over the shorter of their estimated useful lives or the related lease term. Repairs and maintenance are charged to expense as incurred. Useful lives by asset category are as follows:

| <u>Asset Category</u> | <u>Years</u> |
|-----------------------------|--|
| Office equipment..... | 3 |
| Software | 3 |
| Leasehold improvements..... | Shorter of lease term or estimated useful life |
| Production equipment | 2 - 5 |
| Computer equipment..... | 5 |
| Lab equipment..... | 5 |
| Furniture and fixtures..... | 7 |

Intangible Assets

Intangible assets represent rights acquired for developed technology, customer relationships, trademarks, patents and in-process research and development (“IPR&D”) in connection with business acquisitions. Intangible assets with finite useful lives are amortized over periods ranging from one to ten years using a method that reflects the pattern in which the economic benefits of the intangible asset are consumed, or if that pattern cannot be reliably determined, using a straight-line amortization method. Acquired IPR&D is capitalized and amortization commences upon completion of the underlying projects. If any of the projects are abandoned, the Company would be required to impair the related IPR&D asset.

Impairment of Long-lived Assets and Goodwill

Long-lived Assets

The Company assesses the impairment of long-lived assets, which consist primarily of property and equipment and intangible assets, whenever events or changes in circumstances indicate that such assets might be impaired and the carrying value may not be recoverable. Events or changes in circumstances that may indicate that an asset is impaired include significant decreases in the market value of an asset, significant underperformance relative to expected historical or projected future results of operations, a change in the extent or manner in which an asset is utilized, significant declines in the estimated fair value of the overall Company for a sustained period, shifts in technology, loss of key management or personnel, changes in the Company’s operating model or strategy and competitive forces.

Inphi Corporation
Notes to Consolidated Financial Statements
(Dollars in thousands except share and per share amounts)

If events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable and the expected undiscounted future cash flows attributable to the asset are less than the carrying amount of the asset, an impairment loss equal to the excess of the asset's carrying value over its fair value is recorded. Fair value is determined based on the present value of estimated expected future cash flows using a discount rate commensurate with the risk involved, quoted market prices or appraised values, depending on the nature of the asset.

Goodwill

Goodwill is recorded when consideration paid for a business acquisition exceeds the fair value of net tangible and intangible assets acquired. Goodwill is measured and tested for impairment on an annual basis during the fourth fiscal quarter or more frequently if the Company believes indicators of impairment exist.

To review for impairment, the Company first assesses qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of its reporting unit is less than its carrying amount. The qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of its financial performance; or (iv) a sustained decrease in its market capitalization below its net book value. After assessing the totality of events and circumstances, if the Company determines that it is not more likely than not that the fair value of its reporting unit is less than its carrying amount, no further assessment is performed. If however, the Company determines that it is more likely than not that the fair value of the reporting unit is less than its carrying amount, an impairment loss is recognized in an amount equal to the excess. There was no impairment of goodwill in 2019, 2018 and 2017.

Internal Use Software Costs

Certain external computer software costs acquired for internal use are capitalized. Training costs and maintenance are expensed as incurred, while upgrades and enhancements are capitalized if it is probable that such expenditures will result in additional functionality. Capitalized costs are included within property and equipment. If a cloud computing arrangement includes a software license, then the Company accounts for the software license element of the arrangement consistent with the acquisition of other software licenses. If a cloud computing arrangement does not include a software license, the Company accounts for the arrangement as a service contract.

Revenue Recognition

Prior to January 1, 2018, the Company recognized revenue when there was persuasive evidence of an arrangement, delivery had occurred, the fee was fixed or determinable, and collection was reasonably assured.

On January 1, 2018, the Company adopted Accounting Standards Update (ASU) 2014-09, Revenue from Contracts with Customers (Topic 606), using the modified retrospective method applied to those contracts which were not completed as of January 1, 2018. The adoption of this guidance resulted in no cumulative effect adjustment as of January 1, 2018. Starting January 1, 2018, the Company recognizes revenue on sales to distributors upon shipment and transfer of control (known as "sell-in" revenue recognition), rather than deferring recognition until distributors report that they have sold the products to their customers (known as "sell-through" revenue recognition). The impact of the adoption on revenue and cost of revenue for the year ended December 31, 2018 was an increase of \$3,778 and \$779, respectively. Deferred revenue and inventories decreased by \$3,778 and \$779 as of December 31, 2018, respectively. Results for reporting periods beginning after January 1, 2018 are presented under the new revenue guidance, while prior periods were not retrospectively adjusted and continue to be reported in accordance with the Company's historic revenue recognition accounting.

Inphi Corporation
Notes to Consolidated Financial Statements
(Dollars in thousands except share and per share amounts)

The following table shows revenue by geography, based on the receiving location of customers:

| | Year Ended December 31, | | |
|---------------------|--------------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| | (in thousands) | | |
| China | \$ 164,715 | \$ 113,684 | \$ 114,168 |
| United States | 103,402 | 87,545 | 92,620 |
| Thailand..... | 54,468 | 40,884 | 45,205 |
| Other..... | 43,050 | 52,377 | 96,208 |
| | \$ 365,635 | \$ 294,490 | \$ 348,201 |

The Company recognizes revenue when control of the promised goods or services is transferred to customers in an amount that reflects the consideration the Company expects to receive in exchange for such goods or services.

Product Revenue

The Company's products are fully functional at the time of shipment and do not require additional production, modification, or customization. The Company recognizes revenue upon transfer of control at a point in time when title transfers either upon shipment to or receipt by the customer, net of accruals for estimated sales returns and allowances. Sales and other taxes the Company collects are excluded from revenue. The fee is based on specific products and quantities to be delivered at specified prices, which is evidenced by a customer purchase order or other evidence of an arrangement. Certain distributors may receive a credit for price discounts associated with the distributors' customers that purchased those products. The Company estimates the extent of these distributor price discounts at each reporting period to reduce accounts receivable and revenue. Although the Company accrues an estimate of distributor price discounts, the Company does not issue these discounts to the distributor until the inventory is sold to the distributors' customers. As of December 31, 2019 and 2018, the estimated price discount was \$656 and \$1,634, respectively. Payment terms of customers are typically 30 to 60 days after invoice date. The Company's products are under warranty against defects in material and workmanship generally for a period of one or two years. The Company accrues for estimated warranty costs at the time of sale based on anticipated warranty claims and actual historical warranty claims experience including knowledge of specific product failures that are outside of the Company's typical experience.

Other Revenue

Occasionally, the Company enters into license and development agreements with some of its customers and recognizes revenue from these agreements upon completion and acceptance by the customer of contract deliverables or as services are provided, depending on the terms of the arrangement. Revenue is deferred for any amounts billed or received prior to transfer of control. The Company believes the milestone method best depicts the efforts expended to transfer services to the customers under most of the Company's development agreements. Certain contracts may include multiple performance obligations for which the Company allocates revenues to each performance obligation based on relative stand-alone selling price. The Company determines stand-alone selling prices based on observable evidence. When stand-alone selling prices are not directly observable, the Company uses the adjusted market assessment approach or residual approach, if applicable.

The Company does not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less or (ii) contracts for which the Company recognizes revenue at the amount to which it has the right to invoice for services performed. The estimated revenue expected to be recognized in 2020 and 2021 related to performance obligations that are unsatisfied (or partially unsatisfied) as of December 31, 2019 was \$12,338 and \$7,790, respectively.

Revenue from non-product sales was approximately 7%, 3% and 3% of total revenue for the years ended December 31, 2019, 2018, and 2017, respectively.

The Company monitors the collectability of accounts receivable primarily through review of the accounts receivable aging. The Company's policy is to record an allowance for doubtful accounts based on specific collection issues identified, aging of underlying receivables and historical experience of uncollectible balances.

Inphi Corporation
Notes to Consolidated Financial Statements
(Dollars in thousands except share and per share amounts)

Cost of Revenue

Cost of revenue includes cost of materials, such as wafers processed by third-party foundries, cost associated with packaging and assembly, testing and shipping, cost of personnel, including stock-based compensation, and equipment associated with manufacturing support, logistics and quality assurance, warranty cost, amortization and impairment of developed technology, amortization of step-up values of inventory, write-down of inventories, amortization of production mask costs, overhead and occupancy costs.

Warranty

The Company's products are under warranty against defects in material and workmanship generally for a period of one or two years. The Company accrues for estimated warranty cost at the time of sale based on anticipated warranty claims and actual historical warranty claims experience including knowledge of specific product failures that are outside of the Company's typical experience. The warranty obligation is determined based on product failure rates, cost of replacement and failure analysis cost. If actual warranty costs differ significantly from these estimates, adjustments may be required in the future. As of both December 31, 2019 and 2018, the warranty liability was immaterial.

Research and Development Expense

Research and development expense consists of costs incurred in performing research and development activities including salaries, stock-based compensation, employee benefits, occupancy costs, pre-production engineering mask costs, impairment of in-process research and development, overhead costs and prototype wafer, packaging and test costs. Research and development costs are expensed as incurred. The Company enters into development agreements with some of the Company's customers. Recoveries from nonrecurring engineering services from early stage technology are recorded as an offset to product development expense incurred in support of this effort and serve as a mechanism to partially recover development expenditures. These reimbursements are recognized upon completion and acceptance by the customer of contract deliverables or milestones. The Company recorded approximately \$0, \$0 and \$3,000 as offset to research and development expense for the years ended December 31, 2019, 2018 and 2017, respectively.

Sales and Marketing Expense

Sales and marketing expense consists of salaries, stock-based compensation, employee benefits, travel, trade show costs, amortization of intangibles and others. The Company expenses sales and marketing costs as incurred. Advertising expenses for the years ended December 31, 2019, 2018 and 2017 were not material.

General and Administrative Expense

General and administrative expense consists of salaries, stock-based compensation, employee benefits and expenses for executive management, legal, finance and others. In addition, general and administrative expense includes fees for professional services and occupancy costs. These costs are expensed as incurred.

Income Taxes

Deferred tax assets and liabilities are determined based on differences between financial reporting and tax bases of assets and liabilities, and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. The Company recognizes the deferred income tax effects of a change in tax rates in the period of enactment. The Company must also make judgments in evaluating whether deferred tax assets will be recovered from future taxable income. To the extent that it believes that recovery is not likely, the Company must establish a valuation allowance. The carrying value of the Company's net deferred tax asset is based on whether it is more likely than not that the Company will generate sufficient future taxable income to realize these deferred tax assets. A valuation allowance is established for deferred tax assets which the Company does not believe meet the "more likely than not" criteria. The Company's judgments regarding future taxable income may change over time due to changes in market conditions, changes in tax laws, tax planning strategies or other factors. If the Company's assumptions and consequently its estimates change in the future, the valuation allowance the Company has established may be increased or decreased, resulting in a material respective increase or decrease in income tax expense (benefit) and related impact on the Company's reported net income (loss).

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The Company regularly performs a comprehensive review of uncertain tax positions. An uncertain tax position represents an expected treatment of a tax position taken in a filed tax return, or planned to be taken in a future tax return or claim, which has not been reflected in measuring income tax expense for financial reporting purposes. Until these positions are sustained by the taxing authorities, the Company does not recognize the tax benefits resulting from such positions and reports the tax effects as a liability for uncertain tax positions in the consolidated financial statements. The Company recognizes potential interest and penalties on uncertain tax positions within the provision (benefit) for income taxes on the consolidated statement of income (loss).

On December 22, 2017, the Tax Cuts and Jobs Act (the “Tax Reform Act”) was signed into law. The Tax Reform Act contains significant changes to U.S. federal corporate income taxation, including a reduction of the corporate tax rate from 35% to 21% effective January 1, 2018, a one-time transition tax on deemed mandatory repatriation of accumulated earnings and profits of foreign subsidiaries in conjunction with the elimination of U.S. tax on dividend distributions from foreign subsidiaries, and a temporary 100% first-year depreciation deduction for certain capital investments. The effect of the tax law changes must be recognized in the period of enactment. As a result of the change in tax rate, the Company's deferred tax assets and liabilities were required to be remeasured to reflect their value at a lower tax rate of 21%. Staff Accounting Bulletin 118 (“SAB 118”) allows for a measurement period of up to one year after the enactment date of the new tax legislation to finalize the recording of the related tax impacts. In accordance with SAB 118, as of December 31, 2017, the Company made a provisional estimate of the remeasurement of the federal deferred tax assets and liabilities to reflect the reduced U.S. statutory corporate tax rate to 21%, the mandatory repatriation income which was fully absorbed by the U.S. net operating loss, the related valuation allowance offset, and valuation allowance release on deferred tax assets for the federal alternative minimum tax (“AMT”) credit that was made refundable by the Tax Reform Act. During 2018, the Company elected to account for global intangible low-taxed income (“GILTI”) as a period cost in the year the tax is incurred and made changes to its provisional estimates previously recorded for the mandatory repatriation upon filing of its 2017 U.S. income tax return. The change in the mandatory repatriation income was fully absorbed by the U.S. net operating loss, which is subject to valuation allowance, and resulted in no current tax liability. This measurement period adjustment had no net tax effect after the offsetting change to the valuation allowance. At December 31, 2018, the Company completed the accounting for all of the enactment-date income tax effects of the Tax Reform Act.

Stock-Based Compensation

Stock-based compensation for stock option and restricted stock units issued to the Company’s employees is measured at the grant date based on the fair value of the award and is recognized as expense over the requisite service period, which is the vesting period, on a straight-line basis or graded vesting basis for awards with performance or market-based conditions. The fair value of restricted stock units is based on the fair market value of the Company’s common stock on the date of grant. If the award has a market condition, the Company estimates the fair value using Monte Carlo simulation model and recognizes compensation ratably over the service period.

The Company has elected to treat share-based payment awards with graded vesting schedules and time-based service conditions as single awards and recognizes stock-based compensation expense on a straight-line basis (net of estimated forfeitures) over the requisite service period.

The Company recognizes non-employee stock-based compensation expense based on the estimated fair value of the equity instrument determined using the Black-Scholes option pricing model or fair value of the Company's common stock. Management believes that the fair value of the underlying stock award is more reliably measured than the fair value of the services received. The fair value of each non-employee variable stock award is re-measured each period until a commitment date is reached, which is generally the vesting date. Starting January 1, 2019, the Company adopted the new guidance for equity-classified share-based payment awards issued to nonemployees, and therefore no longer remeasures awards each period until a commitment date is reached. The stock-based compensation expense is measured on the grant date. The Company recognizes compensation cost for awards with performance conditions when achievement of those conditions are probable, rather than upon their achievement.

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Earnings per Share

Basic earnings per share is calculated by dividing income allocable to common stockholders by the weighted average number of shares of common stock outstanding during the period. Diluted earnings per share is calculated by dividing the net income allocable to common stockholders by the weighted average number of common shares outstanding, adjusted for the effects of potentially dilutive common stock, which are comprised of stock options, restricted stock units, employee share purchase plan and the shares that could be issued upon conversion of the Company's convertible debt. The capped call options in connection with the issuance of the convertible notes are excluded from the calculation of diluted earnings per share as their impact is always anti-dilutive.

Segment Information

The Company operates in one reportable segment related to the design, development and sale of high-speed analog connectivity components that operate to maintain, amplify and improve signal integrity at high-speeds in a wide variety of applications. The Company's chief operating decision-maker is its Chief Executive Officer, who reviews financial and operational information on a consolidated basis for the purpose of evaluating relative performance, progress against strategic objectives and making decisions about investing resources.

Recent Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board ("FASB") issued guidance that requires companies that lease assets (lessees) to recognize on the balance sheet the assets and liabilities for the rights and obligations created by leases with lease terms of more than 12 months. The FASB also issued additional updates to such guidance. For leases less than twelve months, an entity is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. If a lessee makes this election, it should recognize lease expense for such leases generally on a straight-line basis over the lease term. The guidance requires entities to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach or allows entities to initially apply the new lease standard at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. The Company adopted this guidance on January 1, 2019. See note 7 in the notes to consolidated financial statements for further details.

In June 2016, the FASB issued guidance which requires the credit losses related to debt securities classified as available-for sale to be presented as an allowance rather than as a write-down. The guidance also requires that an entity measure and recognize expected credit losses for financial assets held at amortized cost and replaces the incurred loss impairment methodology in current GAAP with a methodology that requires consideration of a broader range of information to estimate credit losses. This guidance is effective for the Company beginning after December 15, 2019. The adoption of this guidance is not expected to have a material impact to the Company's consolidated financial statements.

In January 2017, the FASB issued guidance to simplify the measurement of goodwill by eliminating the Step 2 impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. The guidance requires an entity to compare the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. Additionally, an entity should consider income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss, if applicable. The guidance becomes effective for goodwill impairment tests in fiscal years beginning after December 15, 2019, though early adoption is permitted. The Company adopted this guidance on January 1, 2019. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In February 2018, the FASB issued guidance that allows an option to reclassify from accumulated other comprehensive income to retained earnings any stranded tax effects resulting from the Tax Cuts and Jobs Act (the "Tax Act"). The guidance will be effective for fiscal years beginning after December 15, 2018. The Company adopted this guidance on January 1, 2019. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

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In June 2018, the FASB issued guidance to eliminate the separate guidance applicable to share-based payments to nonemployees. Under the new guidance, equity-classified share-based payment awards issued to nonemployees will be measured on the grant date, instead of being remeasured through the performance completion date (generally the vesting date), as required under the current guidance. The guidance also requires recognition of compensation cost for awards with performance conditions when achievement of those conditions are probable, rather than upon their achievement. Further, the guidance eliminates the requirement to reassess the classification of nonemployee awards under the financial instruments literature upon vesting. The guidance is effective for fiscal years beginning after December 15, 2018. The Company adopted this guidance on January 1, 2019. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In August 2018, the FASB issued guidance that eliminates certain disclosure requirements for fair value measurements for all entities, requires public entities to disclose certain new information and modifies some disclosure requirements. The new guidance will no longer require disclosure of the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy, but will require disclosure of the range and weighted average used to develop significant unobservable inputs for Level 3 fair value measurements. The guidance will be effective for fiscal years beginning after December 15, 2019. The adoption of this guidance is not expected to have a material impact to the Company's consolidated financial statements.

In August 2018, the FASB issued guidance requiring a customer in a cloud computing arrangement that is a service contract to follow the internal use software guidance in Accounting Standards Codification (ASC) 350-40 to determine which implementation costs to capitalize as assets. Capitalized implementation costs are expensed over the term of the hosting arrangement beginning when the module or component of the hosting arrangement is ready for its intended use. The guidance will be effective for fiscal years beginning after December 15, 2019. The adoption of this guidance is not expected to have a material impact to the Company's consolidated financial statements.

In November 2018, the FASB issued amendments to guidance on "Collaborative Arrangements" and "Revenue from Contracts with Customers", that require transactions in collaborative arrangements to be accounted for under "Revenue from Contracts with Customers" if the counterparty is a customer for a good or service (or bundle of goods and services) that is a distinct unit of account. The amendments also preclude entities from presenting consideration from transactions with a collaborator that is not a customer together with revenue recognized from contracts with customers. The guidance will be effective for fiscal years beginning after December 15, 2019. The adoption of this guidance is not expected to have a material impact to the Company's consolidated financial statements.

In December 2019, the FASB issued guidance that simplifies the accounting for income taxes as part of FASB's overall initiative to reduce complexity in accounting standards. Amendments include removal of certain exceptions to the general principles of ASC 740, Income Taxes, and simplification in general other areas such as accounting for a franchise tax (or similar tax) that is partially based on income. The guidance will be effective for fiscal years beginning after December 15, 2020, though early adoption is permitted. The Company is currently evaluating the impact that this new guidance will have on its consolidated financial statements.

2. Investments

The following table summarizes the investments by investment category:

| | December 31, 2019 | | | |
|--------------------------------|--------------------------|--------------------------------------|--------------------------------------|-------------------|
| | Cost | Gross Unrealized Gain | Gross Unrealized Loss | Fair Value |
| Available-for-sale securities: | | | | |
| U.S. Treasury securities..... | \$ 3,752 | \$ 7 | \$ — | \$ 3,759 |
| Municipal bonds..... | 6,062 | 57 | — | 6,119 |
| Corporate notes/bonds..... | 118,859 | 591 | (1) | 119,449 |
| Asset-backed securities..... | 4,239 | 29 | — | 4,268 |
| Commercial paper..... | 6,464 | 1 | (1) | 6,464 |
| Certificate of deposit..... | 72 | — | — | 72 |
| Total investments..... | <u>\$ 139,448</u> | <u>\$ 685</u> | <u>\$ (2)</u> | <u>\$ 140,131</u> |

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| | December 31, 2018 | | | |
|---------------------------------|-------------------|-----------------------------|-----------------------------|------------|
| | Cost | Gross Unrealized Gain | Gross Unrealized Loss | Fair Value |
| Available-for-sale securities: | | | | |
| Municipal bonds | \$ 6,751 | \$ 1 | \$ (19) | \$ 6,733 |
| Corporate notes/bonds | 146,466 | 14 | (354) | 146,126 |
| Variable rate demand notes..... | 8,900 | — | — | 8,900 |
| Asset-backed securities..... | 32,986 | — | (63) | 32,923 |
| Commercial paper..... | 39,707 | — | (6) | 39,701 |
| Certificate of deposit..... | 956 | — | — | 956 |
| Total investments | \$ 235,766 | \$ 15 | \$ (442) | \$ 235,339 |

As of December 31, 2019, the Company had three investments that were in an unrealized loss position. The gross unrealized losses on these investments at December 31, 2019 were primarily due to changes in interest rates and determined to be temporary in nature.

The realized gain related to the Company's available-for-sale investment, which was reclassified from accumulated other comprehensive income, was included in other income, net in the consolidated statements of income (loss).

Contractual maturities of available-for-sale securities at December 31, 2019 are presented in the following table:

| | Cost | Fair Value |
|-------------------------------------|------------|------------|
| Due in one year or less | \$ 88,803 | \$ 89,049 |
| Due between one and five years..... | 50,645 | 51,082 |
| | \$ 139,448 | \$ 140,131 |

The Company has a marketable equity investment in a company located in Taiwan. The fair value of the investment and unrealized loss as of December 31, 2019 was \$1,662 and \$332, respectively. The fair value of the investment and unrealized loss as of December 31, 2018 was \$1,387 and \$607, respectively. This investment is presented within other assets, net on the consolidated balance sheet. During the year ended December 31, 2019, the Company sold a marketable equity investment in a company located in the United States acquired in the same year for \$3,424. The gain on sale of \$924 was included in other income, net in the consolidated statements of income (loss).

The Company has non-marketable equity investments in privately held companies without readily determinable market values. Prior to January 1, 2018, the Company accounted for non-marketable equity investments at cost less impairment. Realized gains and losses on non-marketable equity investments sold or impaired were recognized in other income, net. On

January 1, 2018, the Company adopted ASU 2016-01, Financial Instruments – Recognition and Measurement of Financial Assets and Financial Liabilities, which changed the way the Company accounts for non-marketable equity investments. The Company adjusts the carrying value of non-marketable equity investments to fair value upon observable transactions for identical or similar investments of the same issuer or impairment (referred to as the measurement alternative). All gains and losses on non-marketable equity investments, realized and unrealized, are recognized in other income, net. There was no cumulative effect adjustment upon adoption of this guidance. As of December 31, 2019, non-marketable equity investments had a carrying value of \$25,792, of which \$8,792 was remeasured to fair value based on observable transaction during the year ended December 31, 2019. As of December 31, 2018, non-marketable equity investments had a carrying value of \$16,866, of which \$6,066 was remeasured to fair value based on observable transaction during the year ended December 31, 2018. These investments are presented within other assets, net on the consolidated balance sheets. The unrealized gain recorded in other income, net and included as adjustment to the carrying value of non-marketable equity investments held was \$1,926 and \$3,066 for the years ended December 31, 2019 and 2018, respectively. During the year ended December 31, 2018, the Company recorded an impairment charge of \$7,000 related to a certain investment in a private company because the investee was in receivership and the Company was not expected to recover its cost. The impairment charge was included in other income, net in the consolidated statements of income (loss).

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3. Concentrations

Financial instruments that subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents, investments in marketable securities and trade accounts receivable. The Company extends differing levels of credit to customers and does not require collateral deposits. As of December 31, 2019 and 2018, the Company has allowance for doubtful accounts of \$1,152. As of December 31, 2019 and 2018, the Company has allowance for distributors' price discounts of \$656 and \$1,634, respectively.

The following table summarizes the significant customers' (including distributors) accounts receivable and revenue as a percentage of total accounts receivable and total revenue, respectively:

| Accounts Receivable | December 31, | |
|----------------------------|---------------------|-------------|
| | 2019 | 2018 |
| Customer A..... | 15% | 13% |
| Customer B..... | 13 | 13 |
| Customer C..... | * | * |
| Customer D..... | 19 | * |
| Customer E..... | * | * |

| Revenue | Year Ended December 31, | | |
|-----------------|--------------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Customer A..... | 14% | 18% | 12% |
| Customer B..... | * | * | 12 |
| Customer C..... | 11 | * | * |
| Customer D..... | * | * | * |
| Customer E..... | * | 11 | * |

* Less than 10% of total receivable or total revenue

Customer A is a subcontractor of a direct customer that would be a "Customer F" above. In the aggregate, revenue to Customer A and Customer F as a percentage of total revenue was approximately 14%, 18% and 17% for the years ended December 31, 2019, 2018 and 2017, respectively. Customer B is a subcontractor of a direct customer that would be a "Customer G" above. In the aggregate, revenue to Customer B and Customer G as a percentage of total revenue was approximately 11%, 14% and 14% for the years ended December 31, 2019, 2018 and 2017, respectively. In addition, the Company sells directly and indirectly through subcontractors to what would be a "Customer H" above. The Company believes, in the aggregate, revenue to Customer H, including its subcontractors as a percentage of total revenue was approximately 11% and 11% for the years ended December 31, 2018 and 2017, respectively. The Company believes, in the aggregate, revenue to Customer H, including its subcontractors was significant but less than 10% of the total revenue for the year ended December 31, 2019. Customers C and D are subcontractors and Customer E is a distributor, all of whom sell to various end customers.

4. Inventories

Inventories consist of the following:

| | December 31, | |
|----------------------|---------------------|------------------|
| | 2019 | 2018 |
| Raw materials..... | \$ 18,593 | \$ 12,435 |
| Work in process..... | 19,081 | 13,602 |
| Finished goods..... | 17,339 | 7,015 |
| | <u>\$ 55,013</u> | <u>\$ 33,052</u> |

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5. Property and Equipment, net

Property and equipment consist of the following:

| | December 31, | |
|---|------------------|------------------|
| | 2019 | 2018 |
| Laboratory and production equipment | \$ 144,866 | \$ 121,716 |
| Office, software and computer equipment | 37,241 | 30,190 |
| Furniture and fixtures | 1,617 | 1,558 |
| Leasehold improvements..... | 8,282 | 7,609 |
| | <u>192,006</u> | <u>161,073</u> |
| Less accumulated depreciation..... | (112,443) | (90,333) |
| | <u>\$ 79,563</u> | <u>\$ 70,740</u> |

Depreciation and amortization expense for the years ended December 31, 2019, 2018 and 2017 was \$22,399, \$20,227 and \$20,631, respectively.

As of December 31, 2019 and 2018, computer software costs included in property and equipment were \$7,339 and \$6,879, respectively. Amortization expense of capitalized computer software costs was \$384, \$591 and \$1,038, for the years ended December 31, 2019, 2018 and 2017, respectively.

Property and equipment not paid as of December 31, 2019 and 2018 was \$4,728 and \$2,580, respectively.

6. Intangible Assets

The following table presents details of intangible assets:

| | December 31, 2019 | | | December 31, 2018 | | |
|-----------------------------|---------------------------|-----------------------------|-------------------|-------------------|-----------------------------|-------------------|
| | Gross | Accumulated Amortization | Net | Gross | Accumulated Amortization | Net |
| | Developed technology..... | \$ 186,800 | \$ 123,365 | \$ 63,435 | \$ 186,800 | \$ 86,378 |
| Customer relationships..... | 70,540 | 31,409 | 39,131 | 70,540 | 21,681 | 48,859 |
| Trade name..... | 2,310 | 1,766 | 544 | 2,310 | 1,350 | 960 |
| Patents..... | 1,579 | 1,010 | 569 | 1,579 | 881 | 698 |
| Software..... | 74,022 | 9,411 | 64,611 | 61,406 | 31,898 | 29,508 |
| | <u>\$ 335,251</u> | <u>\$ 166,961</u> | <u>\$ 168,290</u> | <u>\$ 322,635</u> | <u>\$ 142,188</u> | <u>\$ 180,447</u> |

During the year ended December 31, 2018, the Company reclassified \$60,500 of acquired in-process research and development to developed technology as the technology was commercialized.

During the year ended December 31, 2017, the Company abandoned a project related to certain developed technology and in-process research and development from the ClariPhy Communications, Inc. (ClariPhy) acquisition resulting in an impairment charge of \$47,014, of which \$10,174 was included in the cost of revenue and \$36,840 was included in the research and development expenses in the consolidated statements of income (loss). The abandonment of the project was primarily related to the change in product roadmap that occurred during the year ended December 31, 2017.

The following table presents amortization of intangible assets for the years ended December 31, 2019, 2018 and 2017:

| | Year Ended December 31, | | |
|---------------------------------|-------------------------|------------------|------------------|
| | 2019 | 2018 | 2017 |
| Cost of revenue | \$ 36,987 | \$ 32,845 | \$ 28,502 |
| Research and development..... | 22,305 | 19,311 | 18,352 |
| Sales and marketing | 9,728 | 9,727 | 9,727 |
| General and administrative..... | 545 | 609 | 643 |
| | <u>\$ 69,565</u> | <u>\$ 62,492</u> | <u>\$ 57,224</u> |

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Based on the amount of intangible assets subject to amortization at December 31, 2019, the expected amortization expense for each of the next five fiscal years and thereafter is as follows:

| | | |
|------------------|-----------|----------------|
| 2020..... | \$ | 56,558 |
| 2021..... | | 52,469 |
| 2022..... | | 42,656 |
| 2023..... | | 15,769 |
| 2024..... | | 672 |
| Thereafter | | 166 |
| | <u>\$</u> | <u>168,290</u> |

The weighted-average amortization periods remaining by intangible asset category were as follows (in years):

| | |
|-----------------------------|-----|
| Developed technology..... | 3.0 |
| Customer relationship | 4.0 |
| Trade name..... | 2.0 |
| Patents | 7.6 |
| Software | 2.7 |

7. Leases

On January 1, 2019, the Company adopted Accounting Standards Update (“ASU”) 2016-02, Leases (Topic 842), using the modified retrospective method through a cumulative adjustment to the beginning accumulated deficit balance. Prior comparative periods have not been restated under this method. The adoption of this guidance resulted in no cumulative effect adjustment as of January 1, 2019. However, total assets and liabilities increased by \$10,670 as a result of the adoption. Based on the new guidance, for leases less than twelve months, an entity is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. If a lessee makes this election, it should recognize lease expense for such leases generally on a straight-line basis over the lease term. The Company made this election, along with other available practical expedients. This guidance had a material impact on the consolidated balance sheets as of January 1, 2019, but did not have an impact on the consolidated statements of income (loss) and cash flows. The most significant impact was the recognition of right of use (“ROU”) asset and lease liabilities for operating leases related to facility leases.

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease ROU assets, other current liabilities and other long-term liabilities on the consolidated balance sheets. Finance leases are included in property and equipment, other current liabilities, and other long-term liabilities on the consolidated balance sheets. As of the adoption date and December 31, 2019, the Company does not have material finance leases.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. As most of the leases do not provide an implicit rate,

the Company uses the incremental borrowing rate based on the information available at commencement date in determining the present value of future payments. The operating lease ROU asset also includes any lease payments and initial direct costs incurred, net of lease incentives. The lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise the option. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term. The Company has lease agreements with lease and non-lease components, which are generally accounted for separately.

The Company has operating leases for office facilities. The leases have remaining lease terms of one year to ten years and some may include options to extend the lease for up to five years.

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Information related to operating leases for the year ended December 31, 2019 are as follows:

| | | |
|--|----|--------|
| Operating lease expense | \$ | 5,094 |
| Cash paid for leases | \$ | 4,585 |
| Right of use assets obtained in exchange for lease obligations | \$ | 27,639 |

Weighted average remaining lease term and weighted average discount as of December 31, 2019 are as follows:

| | |
|---|------|
| Weighted average remaining lease term (years) | 8.52 |
| Weighted average discount rate | 3.9% |

Future minimum lease payments under non-cancellable leases as of December 31, 2019 are as follows:

| | | |
|---|----|----------------------|
| 2020 | \$ | 4,455 |
| 2021 | | 6,174 |
| 2022 | | 6,351 |
| 2023 | | 6,266 |
| 2024 | | 6,073 |
| Thereafter | | <u>23,630</u> |
| Total future minimum lease payments | | 52,949 |
| Less: Imputed interest | | 8,006 |
| Lease incentive recognized as offset to asset liability | | 1,324 |
| Present value of lease obligations | \$ | <u><u>43,619</u></u> |

As of December 31, 2019, the Company has additional operating leases for office facilities that have not yet commenced of \$1,098. These operating leases will commence in the second quarter of 2020 with lease terms between three to five years.

As previously reported in the Company's Annual Report on Form 10-K for the year ended December 31, 2018 and under legacy lease accounting (ASC 840), future minimum lease payments under non-cancelable leases and service agreements as of December 31, 2018 are as follows:

| | | |
|---------------------------|----|----------------------|
| 2019 | \$ | 4,588 |
| 2020 | | 2,252 |
| 2021 | | 1,883 |
| 2022 | | 1,722 |
| 2023 | | 1,615 |
| 2024 and thereafter | | <u>1,698</u> |
| Total | \$ | <u><u>13,758</u></u> |

For the years ended December 31, 2018 and 2017, operating lease expense was \$5,742 and \$6,865, respectively.

8. Convertible Debt

The carrying value of the Company's long-term debt consists of the following:

| | <u>December 31,</u> <u>2019</u> | <u>December 31,</u> <u>2018</u> |
|--|------------------------------------|------------------------------------|
| Principal | \$ 517,500 | \$ 517,500 |
| Less: | | |
| Unamortized debt discount | (38,105) | (64,222) |
| Unamortized debt issuance costs | <u>(3,217)</u> | <u>(5,453)</u> |
| Net carrying amount of long-term debt | 476,178 | 447,825 |
| Less current portion of long-term debt | <u>217,467</u> | <u>—</u> |
| Long-term debt, non-current portion | <u><u>\$ 258,711</u></u> | <u><u>\$ 447,825</u></u> |

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In December 2015, the Company issued \$230,000 of 1.125% convertible senior notes due 2020 (Convertible Notes 2015). The Convertible Notes 2015 will mature December 1, 2020, unless earlier converted or repurchased. Interest on the Convertible Notes 2015 is payable on June 1 and December 1 of each year, beginning on June 1, 2016. The initial conversion rate is 24.8988 shares of common stock per \$1 principal amount of Convertible Notes 2015, which represents an initial conversion price of approximately \$40.16 per share. The Convertible Notes 2015 will be subject to repurchase at the option of the holders following certain fundamental corporate changes, at a fundamental change in repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date. The conversion rate will be subject to adjustment in some events but will not be adjusted for any accrued and unpaid interest. Certain corporate events that occur prior to the stated maturity date can cause the Company to increase the conversion rate for a holder.

Prior to the close of business on the business day immediately preceding June 1, 2020, holders may convert all or any portion of their Convertible Notes 2015 only under the following circumstances: (i) during any calendar quarter commencing after the calendar quarter ending on March 31, 2016 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day; (ii) during the five business day period after any five consecutive trading day period (the "measurement period") in which the "trading price" per \$1 principal amount of notes, as determined following a request by a holder of notes in accordance with procedures specified in the indenture governing the Convertible Notes 2015, for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the common stock and the conversion rate on each such trading day; or (iii) upon the occurrence of specified corporate events. On or after June 1, 2020, until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert their notes at any time, regardless of the foregoing circumstances. Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of common stock or a combination of cash and shares of common stock, at the Company's election. The Company's current intent is to settle the principal amount of the Convertible Notes 2015 in cash upon conversion. If the conversion value exceeds the principal amount, the Company would deliver shares of its common stock in respect to the remainder of its conversion obligation in excess of the aggregate principal amount (conversion spread).

The Convertible Notes 2015 are not redeemable at the Company's option prior to maturity.

The Convertible Notes 2015 are governed by the terms of an indenture (Indenture 2015). The Indenture 2015 does not contain any financial or operating covenants, or restrictions on the payments of dividends, the incurrence of indebtedness or the issuance or repurchase of securities by the Company or any of its subsidiaries. The Indenture 2015 contains customary terms and covenants in events of default. If an event of default (other than certain events of bankruptcy, insolvency or reorganization involving the Company) occurs and is continuing, the trustee under the Indenture 2015 by notice to the Company, or the holders of at least 25% in principal amount of the outstanding Convertible Notes 2015 by notice to the Company and the trustee, may, and the trustee at the request of such holders shall, declare 100% of the principal of and accrued and unpaid interest, if any, on all the Convertible Notes 2015 to be due and payable. Upon the occurrence of certain events of bankruptcy, insolvency or reorganization involving the Company, 100% of the principal of and accrued and unpaid interest, if any, on all of the Convertible Notes 2015 will become due and payable automatically. Upon such a declaration of acceleration, such principal and accrued and unpaid interest, if any, will be due and payable immediately. Notwithstanding the foregoing, the Indenture 2015 provides that, to the extent the Company elects, the sole remedy for an event of default relating to certain failures by the Company to comply with certain reporting covenants in the Indenture 2015 consists exclusively of the right to receive additional interest on the Convertible Notes 2015. As of December 31, 2019, none of the conditions allowing holders of the Convertible Notes 2015 to convert had been met.

In accounting for the issuance of the Convertible Notes 2015, the Company separated the Convertible Notes 2015 into liability and equity components. The carrying amount of the liability component was calculated by measuring the estimated fair value of a similar liability that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was determined by deducting the fair value of the liability component from the face value of the Convertible Notes 2015 as a whole. The excess of the face amount of the liability component over its carrying amount is amortized to interest expense over the term of the Convertible Notes 2015 using the effective interest method. The gross proceeds of \$230,000 were accordingly allocated between long-term debt of \$175,974 and stockholders' equity of \$54,026. Issuance costs of \$6,359, of which \$6,007 were paid as of December 31, 2015 and the remainder paid in 2016, were allocated between long-term debt (\$4,864) and equity (\$1,495).

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Interest expense for the Convertible Note 2015 are as follows:

| | Year Ended December 31, | | |
|--|-------------------------|-----------|-----------|
| | 2019 | 2018 | 2017 |
| Contractual interest expense..... | \$ 2,586 | \$ 2,587 | \$ 2,588 |
| Amortization of debt discount..... | 11,645 | 10,833 | 10,079 |
| Amortization of debt issuance costs..... | 1,050 | 976 | 907 |
| Total interest expense..... | \$ 15,281 | \$ 14,396 | \$ 13,574 |

In connection with the issuance of the Convertible Notes 2015, the Company entered into capped call transactions (Capped Call) in private transactions. Under the Capped Call, the Company purchased capped call options that in aggregate relate to 100% of the total number of shares of the Company's common stock underlying the Convertible Notes 2015, with a strike price approximately equal to the conversion price of the Convertible Notes 2015 and with a cap price equal to \$52.06 per share. The capped calls were purchased for \$17,802 and recorded as a reduction to additional paid-in-capital in accordance with ASC 815-40, Contracts in Entity's Own Equity.

The purchased Capped Call allows the Company to receive shares of its common stock and/or cash from counterparties equal to the amounts of common stock and/or cash related to the excess of the market price per share of the common stock, as measured under the terms of the Capped Call over the strike price of the Capped Call during the relevant valuation period. The purchased Capped Call is intended to reduce the potential dilution to common stock upon future conversion of the Convertible Notes 2015 by effectively increasing the initial conversion price to \$52.06 as well as to offset potential cash payments the Company is required to make in excess of the principal amount of the Convertible Notes 2015 in applicable events.

The Capped Call is a separate transaction entered into by the Company with the option counterparties, is not part of the terms of the Convertible Notes 2015 and will not change the holders' rights under the Convertible Notes 2015.

In September 2016, the Company issued \$287,500 of 0.75% convertible senior notes due 2021 (Convertible Notes 2016 and together with the Convertible Notes 2015, the Convertible Notes). The Convertible Notes 2016 will mature September 1, 2021, unless earlier converted or repurchased. Interest on the Convertible Notes 2016 is payable on March 1 and September 1 of each year, beginning on March 1, 2017. The initial conversion rate is 17.7508 shares of common stock per \$1 principal amount of Convertible Notes 2016, which represents an initial conversion price of approximately \$56.34 per share. The Convertible Notes 2016 will be subject to repurchase at the option of the holders following certain fundamental corporate changes, at a fundamental change in repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date. The conversion rate will be subject to adjustment in some events but will not be adjusted for any accrued and unpaid interest. Certain corporate events that occur prior to the stated maturity date can cause the Company to increase the conversion rate for a holder.

Prior to the close of business on the business day immediately preceding March 1, 2021, holders may convert all or any portion of their Convertible Notes 2016 only under the following circumstances: (i) during any calendar quarter commencing after the calendar quarter ending on December 31, 2016 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day; (ii) during the five business day period after any five consecutive trading day period (the "measurement period") in which the "trading price" per \$1 principal amount of notes, as determined following a request by a holder of notes in accordance with procedures specified in the indenture governing the Convertible Notes 2016, for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the common stock and the conversion rate on each such trading day; or (iii) upon the occurrence of specified corporate events. On or after March 1, 2021, until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert their notes at any time, regardless of the foregoing circumstances. Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of common stock or a combination of cash and shares of common stock, at the Company's election. The Company's current intent is to settle the principal amount of the Convertible Notes 2016 in cash upon conversion. If the conversion value exceeds the principal amount, the Company would deliver shares of its common stock in respect to the remainder of its conversion obligation in excess of the aggregate principal amount (conversion spread).

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The Convertible Notes 2016 are not redeemable at the Company's option prior to maturity.

The Convertible Notes 2016 are governed by the terms of an indenture (Indenture 2016). The Indenture 2016 does not contain any financial or operating covenants, or restrictions on the payments of dividends, the incurrence of indebtedness or the issuance or repurchase of securities by the Company or any of its subsidiaries. The Indenture 2016 contains customary terms and covenants in events of default. If an event of default (other than certain events of bankruptcy, insolvency or reorganization involving the Company) occurs and is continuing, the trustee under the Indenture 2016 by notice to the Company, or the holders of at least 25% in principal amount of the outstanding Convertible Notes 2016 by notice to the Company and the trustee under the Indenture 2016, may, and the trustee at the request of such holders shall, declare 100% of the principal of and accrued and unpaid interest, if any, on all the Convertible Notes 2016 to be due and payable. Upon the occurrence of certain events of bankruptcy, insolvency or reorganization involving the Company, 100% of the principal of and accrued and unpaid interest, if any, on all of the Convertible Notes 2016 will become due and payable automatically. Upon such a declaration of acceleration, such principal and accrued and unpaid interest, if any, will be due and payable immediately. Notwithstanding the foregoing, the Indenture 2016 provides that, to the extent the Company elects, the sole remedy for an event of default relating to certain failures by the Company to comply with certain reporting covenants in the Indenture 2016 consists exclusively of the right to receive additional interest on the Convertible Notes 2016. As of December 31, 2019, none of the conditions allowing holders of the Convertible Notes 2016 to convert had been met.

In accounting for the issuance of the Convertible Notes 2016, the Company separated the Convertible Notes 2016 into liability and equity components. The carrying amount of the liability component was calculated by measuring the estimated fair value of a similar liability that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was determined by deducting the fair value of the liability component from the face value of the Convertible Notes 2016 as a whole. The excess of the face amount of the liability component over its carrying amount is amortized to interest expense over the term of the Convertible Notes 2016 using the effective interest method. The gross proceeds of \$287,500 were accordingly allocated between long-term debt of \$216,775 and stockholders' equity of \$70,725. Issuance costs of \$7,689, were allocated between long-term debt (\$5,798) and equity (\$1,891).

Interest expense for the Convertible Notes 2016 are as follows:

| | Year Ended December 31, | | |
|--|--------------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Contractual interest expense..... | \$ 2,152 | \$ 2,156 | \$ 2,154 |
| Amortization of debt discount..... | 14,472 | 13,481 | 12,559 |
| Amortization of debt issuance costs..... | 1,186 | 1,104 | 1,029 |
| Total interest expense..... | \$ 17,810 | \$ 16,741 | \$ 15,742 |

In connection with the issuance of the Convertible Notes 2016, the Company entered into capped call transactions (Capped Call 2016) in private transactions. Under the Capped Call 2016, the Company purchased capped call options that in aggregate relate to 100% of the total number of shares of the Company's common stock underlying the Convertible Notes 2016, with a strike price approximately equal to the conversion price of the Convertible Notes 2016 and with a cap price equal to approximately \$73.03 per share. The capped calls were purchased for \$22,540 and recorded as a reduction to additional paid-in-capital in accordance with ASC 815-40, Contracts in Entity's Own Equity.

The purchased Capped Call 2016 allows the Company to receive shares of its common stock and/or cash from counterparties equal to the amounts of common stock and/or cash related to the excess of the market price per share of the common stock, as measured under the terms of the Capped Call 2016 over the strike price of the Capped Call 2016 during the relevant valuation period. The purchased Capped Call 2016 is intended to reduce the potential dilution to common stock upon future conversion of the Convertible Notes 2016 by effectively increasing the initial conversion price to approximately \$73.03 as well as to offset potential cash payments the Company is required to make in excess of the principal amount of the Convertible Notes 2016 in applicable events.

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The Capped Call 2016 is a separate transaction entered into by the Company with the option counterparties, is not part of the terms of the Convertible Notes 2016 and will not change the holders' rights under the Convertible Notes 2016.

9. Other Liabilities

Other current liabilities consist of the following:

| | December 31, | |
|---|---------------------|-------------|
| | 2019 | 2018 |
| Software license intangible asset liability | \$ 25,810 | \$ 21,945 |
| Operating lease liability..... | 2,545 | — |
| Others | 5,176 | 2,374 |
| | \$ 33,531 | \$ 24,319 |

Other long-term liabilities consist of the following:

| | December 31, | |
|---|---------------------|-------------|
| | 2019 | 2018 |
| Deferred rent | \$ 26 | \$ 1,100 |
| Income tax payable..... | 692 | 706 |
| Software license intangible asset liability | 36,144 | 7,961 |
| Operating lease liability..... | 41,074 | — |
| Others | 981 | 1,144 |
| | \$ 78,917 | \$ 10,911 |

10. Income Taxes

Loss before income taxes consists of the following:

| | Year Ended December 31, | | |
|---------------------|--------------------------------|--------------|-------------|
| | 2019 | 2018 | 2017 |
| United States | \$ (60,313) | \$ (71,978) | \$ (77,649) |
| Foreign | (12,202) | (31,984) | (18,431) |
| Total | \$ (72,515) | \$ (103,962) | \$ (96,080) |

Income tax provision (benefit) consisted of the following:

| | Year Ended December 31, | | |
|-------------------|--------------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Current: | | | |
| U.S. Federal..... | \$ — | \$ — | \$ 96 |
| U.S. State..... | (11) | 42 | 51 |
| Foreign | 70 | 375 | 1,105 |
| | 59 | 417 | 1,252 |
| Deferred: | | | |
| U.S. Federal..... | — | (6,734) | (11,312) |
| U.S. State..... | — | — | (613) |
| Foreign | 337 | (1,894) | (10,503) |
| | 337 | (8,628) | (22,428) |
| Total | \$ 396 | \$ (8,211) | \$ (21,176) |

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Provision (benefit) for income taxes differed from the amounts computed by applying the U.S. federal income tax rate of 21% in 2019, 21% in 2018 and 34% in 2017 to loss before income taxes as a result of the following:

| | Year Ended December 31, | | |
|---|--------------------------------|-------------------|--------------------|
| | 2019 | 2018 | 2017 |
| Benefit at statutory rate | \$ (15,228) | \$ (21,832) | \$ (32,562) |
| State income taxes | (587) | 594 | (585) |
| Research and development credits | (16,933) | (13,283) | (12,983) |
| Change in valuation allowance | 31,917 | 13,757 | 40,028 |
| Impact of foreign operations | (1,045) | 5,925 | (1,951) |
| Unrecognized tax benefits | 6,725 | 5,340 | 3,596 |
| Stock-based compensation | (4,731) | (381) | (10,248) |
| Prior year return to provision adjustment | (1,167) | 1,422 | 1,105 |
| Section 162(m) | 1,046 | — | — |
| Effect of U. S. tax law change | — | — | (4,602) |
| Impairment of intangibles | — | — | (2,328) |
| Other | 399 | 247 | (646) |
| | <u>\$ 396</u> | <u>\$ (8,211)</u> | <u>\$ (21,176)</u> |

Significant components of the Company's net deferred taxes consist of the following:

| | December 31, | |
|---|---------------------|-----------------|
| | 2019 | 2018 |
| Deferred tax assets | | |
| Net operating loss carry forwards | \$ 48,481 | \$ 39,888 |
| Research and development credits | 84,268 | 69,320 |
| Stock-based compensation | 8,884 | 9,055 |
| Accrued expenses and allowances | 1,897 | 2,334 |
| Amortization and depreciation | — | 1,408 |
| Operating lease liability | 7,345 | — |
| Other temporary differences | 6,884 | 6,411 |
| Foreign tax credit | 2,338 | 2,338 |
| Valuation allowance | (123,989) | (92,315) |
| Total deferred tax assets | <u>36,108</u> | <u>38,439</u> |
| Deferred tax liabilities | | |
| Acquired intangible assets | (16,092) | (22,593) |
| Convertible debt | (6,444) | (11,596) |
| Amortization and depreciation | (2,123) | — |
| Right of use asset | (6,806) | — |
| Other deferred tax liabilities | (1,482) | (603) |
| Total deferred tax liabilities | <u>(32,947)</u> | <u>(34,792)</u> |
| Deferred tax assets, net | <u>\$ 3,161</u> | <u>\$ 3,647</u> |

On December 22, 2017, the Tax Reform Act was signed into law. The Tax Reform Act contains significant changes to U.S. federal corporate income taxation, including a reduction of the corporate tax rate from 35% to 21% effective January 1, 2018, a one-time transition tax on deemed mandatory repatriation of accumulated earnings and profits of foreign subsidiaries in conjunction with the elimination of U.S. tax on dividend distributions from foreign subsidiaries, and a temporary 100% first-year depreciation deduction for certain capital investments. In 2017, the Company recorded provisional amounts based on reasonable estimates for certain enactment-date effects of the Tax Reform Act in accordance with the guidance in SAB 118. In 2017, the Company recorded a net tax benefit related to the enactment-date effects of the Tax Reform Act that included the remeasurement of the federal deferred tax assets and liabilities, the tax effect of the one-time mandatory repatriation income, and related valuation allowance adjustments.

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During 2018, the Company finalized the calculation of the deemed mandatory repatriation income upon filing its 2017 U.S. income tax return. The change in the mandatory repatriation income was fully absorbed by the U.S. net operating loss, which is subject to valuation allowance, and resulted in no current tax liability. These measurement period adjustments had no net tax effect after the offsetting change to the valuation allowance.

The Tax Reform Act subjects a U.S. shareholder to tax on GILTI earned by certain foreign subsidiaries. In January 2018, the FASB released guidance on the accounting for tax on the GILTI inclusion. Entities can make an accounting policy election to either recognize deferred taxes for temporary basis differences expected to reverse as GILTI in future years or account for GILTI as a period cost in the year the tax is incurred. The Company has elected to account for GILTI as a period cost in the year the tax is incurred. For the year ended December 31, 2019, the Company computed no GILTI inclusion as a result of current year aggregate loss of the Company's foreign subsidiaries.

Valuation Allowance

The Company records a valuation allowance to reduce deferred tax assets to the amount the Company believes is more likely than not to be realized. The determination of recording or releasing tax valuation allowances is made, in part, pursuant to an assessment performed by management regarding the likelihood that the Company will generate sufficient future taxable income against which benefits of the deferred tax assets may or may not be realized. This assessment requires management to exercise significant judgment and make estimates with respect to the Company's ability to generate revenue, gross profits, operating income and taxable income in future periods. Amongst other factors, management must make assumptions regarding overall current and projected business and semiconductor industry conditions, operating efficiencies, the Company's ability to timely develop, introduce and consistently manufacture new products to customers' specifications, acceptance of new products, customer concentrations, technological change and the competitive environment which may impact the Company's ability to generate taxable income and, in turn, realize the value of the deferred tax assets.

At December 31, 2019, 2018 and 2017, the Company has a full valuation allowance recorded against the deferred tax assets of Canada, United Kingdom, and the U.S., with the exception of the federal refundable AMT credit. The Company has a partial valuation allowance against the deferred tax assets of Taiwan.

The valuation allowance increased \$31,674, \$13,777 and \$39,907 in the years ended December 31, 2019, 2018 and 2017, respectively.

The net increase of \$31,674 in the valuation allowance for the year ended December 31, 2019 is comprised of \$31,917 increase charged to income tax provision and \$243 decrease charged to other comprehensive income. The net increase of \$13,777 in the valuation allowance for the year ended December 31, 2018 is comprised of \$20 increase charged to other comprehensive income and \$13,757 charged to income tax provision. The net increase of \$39,907 in the valuation allowance for the year ended December 31, 2017 is comprised of \$134 increase charged to other comprehensive income, \$158 decrease charged to goodwill, and \$39,931 increase charged to income tax provision. The valuation allowance charged to income tax provision included an income tax benefit from the partial release of the federal and state valuation allowance.

General Income Tax Disclosures

The Company has net operating loss ("NOL") carryforwards for federal and state income tax purposes of approximately \$261,621 and \$96,559, respectively at December 31, 2019, that will begin to expire in 2022 for federal income tax purposes and in 2026 for state income tax purposes. The Company's federal NOL carryforward of \$59,407 that was generated in 2018 and 2019 does not expire. At December 31, 2019, the Company has NOL carryforwards of \$2,597 for its Taiwan subsidiary which begin to expire in 2020, and NOL carryforwards of \$8,409 for the United Kingdom subsidiary, which do not expire. A full valuation allowance has been provided on U.S. NOL and United Kingdom NOL, and a partial valuation allowance has been provided on Taiwan NOL.

At December 31, 2019, the Company has federal and state research and development ("R&D") tax credit carryforwards of \$57,078 and \$58,288, respectively. The federal tax credits will begin to expire in 2024. Some state tax credits will begin to expire in 2021 and some do not expire. At December 31, 2019, the Company has Canadian tax credits and research expenditure tax credit carryforwards for its Canadian subsidiary of \$6,999 and \$3,750, respectively. The tax credits will begin to expire in 2027, and the research expenditure claim carryforwards do not expire. A full valuation allowance has been provided on R&D tax credit and research expenditure claim carryforwards.

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Pursuant to Internal Revenue Code of 1986, as amended (the "Code") sections 382 and 383, use of the Company's NOL and R&D credits generated prior to June 2004 are subject to an annual limitation due to a cumulative ownership percentage change that occurred in that period. The Company has had two changes in ownership, one in December 2000 and the second in June 2004, that resulted in an annual limitation on NOL and R&D credit utilization. The NOL and R&D credit carryover of Cortina, are also subject to annual limitation under the Code sections 382 and 383. The acquisition of Cortina caused an ownership change that resulted in an annual limitation, as well as Cortina's legacy annual limitation amount from ownership changes prior to acquisition. The NOL and R&D credit carryforward which will expire unused due to annual limitations is not recognized for financial statement purposes and is not reflected in the above carryover amounts.

The Company's NOL carryforwards include Cortina's federal and state pre-acquisition NOL of \$49,152 and \$3,919, respectively. These NOL carryforwards will begin to expire in 2024 for federal and 2026 for state. The Company's NOL carryforwards also include ClariPhy's federal and state pre-acquisition NOL of \$46,601 and \$68,104, respectively. These NOL carryforwards will begin to expire in 2032 for federal and 2028 for state. The Company's R&D credit carryforwards included Cortina's federal and state pre-acquisition credits of \$6,033 and \$7,912, respectively. The federal R&D credit carryforward will begin to expire in 2027. While some state tax credits will begin to expire in 2021, most do not expire. The utilization of Cortina and ClariPhy's pre-acquisition tax attributes is subject to certain annual limitations under the Code sections 382 and 383. No benefit for Cortina's tax attributes was recorded upon the close of the acquisition, as the benefit from these tax attributes did not meet the "more-likely-than-not" standard.

The Company operates under tax holiday in Singapore. The Singapore tax holiday allows for a reduced income tax rate of 5% effective through April 2020, and the Company is currently pursuing a renewal of the reduced tax rate to apply subsequent to the current holiday period. The Singapore statutory rate is 17%. The tax holiday is conditional upon meeting certain employment, activities and investment thresholds. As of December 31, 2019, the Company believes it has met all of the required thresholds. The Company qualified for a tax incentive program in Argentina that reduced the income tax rate to 12%, starting January 1, 2018 through December 31, 2019, with a return to the full statutory rate of 30% in 2020. As a result of these reduced tax rates, foreign tax expense increased (decreased) by (\$1,729), (\$2,093) and \$7,412 for the years ended December 31, 2019, 2018 and 2017, respectively. The effect of the tax holidays on diluted earnings per share was (\$0.04), (\$0.05) and \$0.18 for the years ended December 31, 2019, 2018 and 2017, respectively.

The following table summarizes the changes in gross unrecognized tax benefits:

| | Year Ended December 31, | | |
|--|--------------------------------|------------------|------------------|
| | 2019 | 2018 | 2017 |
| Balance as of January 1 | \$ 53,943 | \$ 47,606 | \$ 56,503 |
| Increases based on tax positions related to the current year | 7,926 | 5,747 | 4,656 |
| Increases (decreases) based on tax positions of prior year | (518) | 708 | (13,452) |
| Statute of limitation expirations | (51) | (118) | (101) |
| Balance as of December 31 | <u>\$ 61,300</u> | <u>\$ 53,943</u> | <u>\$ 47,606</u> |

As of December 31, 2019, the Company had approximately \$5,478 of unrecognized tax benefits that if recognized would affect the effective income tax rate. The Company believes that before the end of next year, it is reasonably possible that the gross unrecognized tax benefit may decrease by approximately \$58 due to statute of limitation expiration in foreign jurisdictions.

The Company recognizes interest and penalties related to unrecognized tax benefits as a component of income tax expense. The Company recorded \$16, \$17 and \$16 in interest expense in the years ended December 31, 2019, 2018 and 2017, respectively. The Company had \$56, \$65, and \$113 of interest expense and penalties accrued as of December 31, 2019, 2018 and 2017, respectively.

The Company files income tax returns in the U.S. federal jurisdiction, various states and certain foreign jurisdictions. The Company is no longer subject to U.S. federal income tax examinations for tax years ended on or before December 31, 2011 or to California state income tax examinations for tax years ended on or before December 31, 2010. However, to the extent allowed by law, the tax authorities may have the right to examine prior periods where net operating losses or tax credits were generated and carried forward, and make adjustments up to the amount of the net operating loss or credit carryforward.

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The Company does not provide for U.S. income taxes on undistributed earnings of its controlled foreign corporations as the Company intends to reinvest these earnings indefinitely outside the United States. At December 31, 2019, foreign subsidiaries had cumulative undistributed earnings of \$31,008 that, if repatriated, is expected to result in immaterial U.S. taxes.

The Company is currently under examination by the Inland Revenue Authority of Singapore (“IRAS”) for the years 2010, 2011 and 2012. The IRAS made an adjustment to the timing of deducting certain intercompany payments, the effect of which has been reflected in the provision and did not result in a material impact to the consolidated financial statements. As of the report date, the examination is ongoing.

The Company is currently under examination by the U.S. Internal Revenue Service for year 2016. The Company believes it has adequate reserve for its uncertain tax positions, however, there is no assurance that the taxing authorities will not propose adjustments that are different from the Company’s expected outcome and such adjustments may impact the provision for income taxes. The Internal Revenue Service examination is on-going as of the report date.

11. Earnings Per Share

The following securities were not included in the computation of diluted earnings per share as inclusion would have been anti-dilutive:

| | Year Ended December 31, | | |
|--------------------------------------|-------------------------|------------|------------|
| | 2019 | 2018 | 2017 |
| Common stock options..... | 1,032,485 | 1,208,643 | 1,456,610 |
| Unvested restricted stock unit | 2,772,991 | 2,871,135 | 2,935,500 |
| Convertible debt | 10,830,038 | 10,830,038 | 10,830,038 |
| | 14,635,514 | 14,909,816 | 15,222,148 |

12. Stock-Based Compensation

In June 2010, the Board of Directors (the “Board”) approved the Company’s 2010 Stock Incentive Plan (the “2010 Plan”), which became effective in November 2010. The 2010 Plan provides for the grants of restricted stock, stock appreciation rights and stock unit awards to employees, non-employee directors, advisors and consultants. The Compensation Committee administers the 2010 Plan, including the determination of the recipient of an award, the number of shares subject to each award, whether an option is to be classified as an incentive stock option or nonstatutory option, and the terms and conditions of each award, including the exercise and purchase prices and the vesting or duration of the award. Options granted under the 2010 Plan are exercisable only upon vesting. At December 31, 2019, 4,909,665 shares of common stock have been reserved for future grants under the 2010 Plan.

Stock Option Awards

The Company did not grant any stock options during the years ended December 31, 2019, 2018 and 2017.

The following table summarizes information regarding options outstanding:

| | Number of Shares | Weighted Average Exercise Price Per Share | Weighted Average Remaining Contractual Life | Aggregate Intrinsic Value |
|---|---------------------|---|---|---------------------------------|
| Outstanding at December 31, 2018 | 1,159,121 | \$ 12.94 | 2.62 | \$ 22,267 |
| Exercised | (253,980) | \$ 10.30 | | |
| Outstanding at December 31, 2019 | 905,141 | \$ 13.68 | 1.81 | \$ 54,616 |
| Vested and Exercisable as of December 31, 2019 | 905,141 | \$ 13.68 | 1.81 | \$ 54,616 |

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The intrinsic value of options outstanding, exercisable and vested and expected to vest is calculated based on the difference between the exercise price and the fair value of the Company's common stock as of the respective balance sheet dates.

The total intrinsic value of options exercised during the years ended December 31, 2019, 2018 and 2017 was \$12,008, \$4,553 and \$11,312, respectively. The intrinsic value of exercised options is calculated based on the difference between the exercise price and the fair value of the Company's common stock as of the exercise date. Cash received from the exercise of stock options was \$2,616, \$719 and \$2,214, respectively, for the years ended December 31, 2019, 2018 and 2017.

Restricted Stock Units and Awards

The Company granted restricted stock units ("RSUs") to members of the Board and its employees. Most of the Company's outstanding RSUs vest over four years with vesting contingent upon continuous service. The Company estimates the fair value of RSUs using the market price of the common stock on the date of the grant. The fair value of these awards is amortized on a straight-line basis over the vesting period.

The following table summarizes information regarding outstanding restricted stock units:

| | Number of Shares | Weighted Average Grant Date Fair Value Per Share |
|---|-----------------------------|---|
| Outstanding at December 31, 2018 | 4,051,685 | \$ 34.68 |
| Granted..... | 1,965,231 | \$ 47.85 |
| Vested..... | (1,811,511) | \$ 34.19 |
| Canceled..... | (383,080) | \$ 37.71 |
| Outstanding at December 31, 2019 | 3,822,325 | \$ 41.38 |
| Expected to vest in the future as of December 31, 2019 | 3,742,887 | |

The RSUs include performance-based stock units subject to achievement of pre-established revenue and earnings per share goals on non-GAAP basis. Once the goals are met, the performance-based stock units are subject to four years of vesting from the original grant date, contingent upon continuous service. The total performance-based units that vested for the year ended December 31, 2019 was 55,759. As of December 31, 2019, the total performance-based units outstanding was 72,053.

Market Value Stock Units

In January 2018, the compensation committee of the Board approved long-term market value stock unit (MVSU) awards to certain executive officers and employees, subject to certain market and service conditions in the maximum total amount of 702,000 units. Recipients may earn between 0% to 225% of the target number of shares based on the Company's achievement of total shareholder return (TSR) in comparison to the TSR of companies in the S&P 500 Index over a period of approximately three years in length ending in the first calendar quarter of 2021 after reporting of fiscal year 2020 results. If the Company's absolute TSR is negative for the performance period, then the maximum number of shares that may be earned is the target number of shares. The fair value of the MVSU awards was estimated using a Monte Carlo simulation model and compensation is being recognized ratably over the service period. The expected volatility of the Company's common stock was estimated based on the historical average volatility rate over the three-year period. The dividend yield assumption was based on historical and anticipated dividend payouts. The risk-free interest rate assumption was based on observed interest rates consistent with three-year measurement period. The total amount of compensation to recognize over the service period, and the assumptions used to value the grants are as follows:

| | |
|---|-----------|
| Total target shares | 312,000 |
| Fair value per share | \$ 55.81 |
| Total amount to be recognized over the service period | \$ 17,413 |
| Risk free interest rate | 2.29% |
| Expected volatility | 47.52% |
| Dividend yield | — |

Inphi Corporation
Notes to Consolidated Financial Statements
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Employee Stock Purchase Plan

In December 2011, the Company adopted the Employee Stock Purchase Plan (“ESPP”). Participants purchase the Company's stock using payroll deductions, which may not exceed 15% of their total cash compensation. Pursuant to the terms of the ESPP, the "look-back" period for the stock purchase price is six months. Offering and purchase periods will begin on February 10 and August 10 of each year. Participants will be granted the right to purchase common stock at a price per share that is 85% of the lesser of the fair market value of the Company's common shares at the beginning or the end of each six-month period.

The ESPP imposes certain limitations upon an employee’s right to acquire common stock, including the following: (i) no employee shall be granted a right to participate if such employee immediately after the election to purchase common stock, would own stock possessing 5% or more to the total combined voting power or value of all classes of stock of the Company, and (ii) no employee may be granted rights to purchase more than \$25 fair value of common stock for each calendar year. The maximum aggregate number of shares of common stock available for purchase under the ESPP is 2,750,000. Total common stock issued under the ESPP during the years ended December 31, 2019, 2018 and 2017 was 208,721, 283,493, and 171,099, respectively.

The fair value of award under the employee stock purchase plan is estimated at the start of offering period using the Black-Scholes option pricing model with the following average assumptions for the years ended December 31, 2019, 2018 and 2017:

| | Year Ended December 31, | | |
|--------------------------------|--------------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Risk-free interest rate | 2.26% | 2.01% | 0.94% |
| Expected life (in years) | 0.49 | 0.50 | 0.50 |
| Dividend yield..... | — | — | — |
| Expected volatility | 43% | 46% | 42% |
| Estimated fair value..... | \$ 13.35 | \$ 8.35 | \$ 11.03 |

Stock-Based Compensation Expense

Stock-based compensation expense is included in the Company’s results of operations as follows:

| | Year Ended December 31, | | |
|----------------------------------|--------------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Cost of revenue | \$ 6,208 | \$ 2,527 | \$ 2,045 |
| Research and development..... | 42,265 | 37,397 | 28,846 |
| Sales and marketing | 15,561 | 13,470 | 8,340 |
| General and administrative | 12,821 | 10,490 | 5,602 |
| | \$ 76,855 | \$ 63,884 | \$ 44,833 |

As of December 31, 2019, total unrecognized compensation cost related to unvested stock options and awards prior to the consideration of expected forfeitures, was approximately \$125,015, which is expected to be recognized over a weighted-average period of 2.50 years.

13. Employee Benefit Plan

The Company has established a 401(k) tax-deferred savings plan (the “Plan”) which permits participants to make contributions by salary deduction pursuant to Section 401(k) of the Code. The Company may, at its discretion, make matching contributions to the Plan. Furthermore, the Company is responsible for administrative costs of the Plan. The Company accrued \$1,976, \$1,800 and \$1,137 in contributions to the Plan for the years ended December 31, 2019, 2018 and 2017, respectively.

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14. Fair Value Measurements

The guidance on fair value measurements requires fair value measurements to be classified and disclosed in one of the following three categories:

Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;

Level 2: Quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability; or

Level 3: Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e., supported by little or no market activity).

The Company measures its investments in marketable securities at fair value using the market approach which uses prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities. The Company has cash equivalents which consist of money market funds valued using the amortized cost method, in accordance with Rule 2a-7 under the 1940 Act which approximates fair value.

The convertible notes are carried on the consolidated balance sheets at their original issuance value including accreted interest, net of unamortized debt discount and issuance costs. The Convertible Notes are not marked to fair value at the end of each reporting period. As of December 31, 2019 and 2018, the fair value of Convertible Notes was determined on the basis of market prices observable for similar instruments and is considered Level 2 in the fair value hierarchy. The fair value of the Convertible Notes as of December 31, 2019 and 2018 was \$845,296 and \$512,428, respectively.

The following table presents information about assets required to be carried at fair value on a recurring basis:

| December 31, 2019 | Total | Level 1 | Level 2 |
|---------------------------------------|-------------------|------------------|-------------------|
| Assets | | | |
| Cash equivalents: | | | |
| Money market funds | \$ 190,598 | \$ 67,494 | \$ 123,104 |
| Commercial paper | 9,465 | — | 9,465 |
| Municipal bonds | 1,250 | — | 1,250 |
| Investments in marketable securities: | | | |
| U.S. Treasury securities | 3,759 | 3,759 | — |
| Municipal bonds | 6,119 | — | 6,119 |
| Corporate notes/bonds | 119,449 | — | 119,449 |
| Asset-backed securities | 4,268 | — | 4,268 |
| Commercial paper | 6,464 | — | 6,464 |
| Certificate of deposit | 72 | 72 | — |
| | <u>\$ 341,444</u> | <u>\$ 71,325</u> | <u>\$ 270,119</u> |
| | | | |
| December 31, 2018 | Total | Level 1 | Level 2 |
| Assets | | | |
| Cash equivalents: | | | |
| Money market funds | \$ 740 | \$ 38 | \$ 702 |
| Commercial paper | 96,759 | — | 96,759 |
| Investments in marketable securities: | | | |
| Municipal bonds | 6,733 | — | 6,733 |
| Corporate notes/bonds | 146,126 | — | 146,126 |
| Variable rate demand notes | 8,900 | — | 8,900 |
| Asset-backed securities | 32,923 | — | 32,923 |
| Commercial paper | 39,701 | — | 39,701 |
| Certificate of deposit | 956 | 956 | — |
| | <u>\$ 332,838</u> | <u>\$ 994</u> | <u>\$ 331,844</u> |

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As discussed in Note 2, the Company has a marketable equity investment. The marketable equity investment is classified as Level 1 in the fair value hierarchy. As discussed in Note 2, the Company has non-marketable equity investments which are classified within Level 3 in the fair value hierarchy.

15. Segment and Geographic Information

The Company operates in one reportable segment. Revenue by region is classified based on the locations to which the product is transported, which may differ from the customer's principal offices.

The following table sets forth the Company's revenue by geographic region:

| | Year Ended December 31, | | |
|---------------------|--------------------------------|-------------------|-------------------|
| | 2019 | 2018 | 2017 |
| | (in thousands) | | |
| China | \$ 164,715 | \$ 113,684 | \$ 114,168 |
| United States | 103,402 | 87,545 | 92,620 |
| Thailand..... | 54,468 | 40,884 | 45,205 |
| Other..... | 43,050 | 52,377 | 96,208 |
| | <u>\$ 365,635</u> | <u>\$ 294,490</u> | <u>\$ 348,201</u> |

As of December 31, 2019, \$33,826 of long-lived tangible assets are located outside the United States of which \$27,750 are located in Taiwan. As of December 31, 2018, \$32,631 of long-lived tangible assets are located outside the United States of which \$28,428 are located in Taiwan.

16. Commitments and Contingencies

Leases

The Company has noncancelable service agreements, including software licenses, colocation and cloud services used in research and development activities expiring in various years through 2024.

Future minimum lease payments under noncancelable operating leases having initial terms in excess of one year are as follows:

| | December 31, 2019 |
|-----------|--------------------------|
| 2020..... | \$ 1,508 |
| 2021..... | 1,110 |
| 2022..... | 515 |
| 2023..... | 264 |
| 2024..... | 195 |
| | <u>\$ 3,592</u> |

Noncancelable Purchase Obligations

The Company depends upon third party subcontractors to manufacture wafers. The Company's subcontractor relationships typically allow for the cancellation of outstanding purchase orders, but require payment of all expenses incurred through the date of cancellation. As of December 31, 2019, the total value of open purchase orders for wafers was approximately \$14,977. As of December 31, 2019, the Company has a commitment to pay mask costs of \$542.

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Legal Proceedings

Netlist, Inc. v. Inphi Corporation, Case No. 09-cv-6900 (C.D. Cal.)

On September 22, 2009, Netlist filed suit in the United States District Court, Central District of California (the “Court”), asserting that the Company infringes U.S. Patent No. 7,532,537. Netlist filed an amended complaint on December 22, 2009, further asserting that the Company infringes U.S. Patent Nos. 7,619,912 and 7,636,274, collectively with U.S. Patent No. 7,532,537, the patents-in-suit, and seeking both unspecified monetary damages to be determined and an injunction to prevent further infringement. These infringement claims allege that the iMB™ and certain other memory module components infringe the patents in-suit. The Company answered the amended complaint on February 11, 2010 and asserted that the Company does not infringe the patents-in-suit and that the patents-in-suit are invalid. In 2010, the Company filed inter partes requests for reexamination with the United States Patent and Trademark Office (the “USPTO”), asserting that the patents-in-suit are invalid. As a result of the proceedings at the USPTO, the Court has stayed the litigation, with the parties advising the Court on status every 120 days.

As to the proceeding at the USPTO, reexamination has been ordered for all of the patents that Netlist alleged to infringe. At present, the USPTO has determined that almost all of the originally filed claims are not valid, and determined certain amended claims to be patentable. The Reexamination Certificate for U.S. Patent No. 7,532,537 was issued on August 2, 2016 based on amended claims. The Reexamination Certificate for U.S. Patent No. 7,636,274 was issued on November 5, 2018, indicating that all claims, 1 through 97, were cancelled. The parties continue to assert their respective positions with respect to the reexamination proceeding for U.S. Patent No. 7,619,912.

While the Company intends to defend the foregoing USPTO proceedings and lawsuit vigorously, the USPTO proceedings and litigation, whether or not determined in the Company’s favor or settled, could be costly and time-consuming and could divert management’s attention and resources, which could adversely affect the Company’s business.

Due to the nature of USPTO proceedings and litigation, the Company is currently unable to predict the final outcome of this lawsuit and therefore cannot determine the likelihood of loss nor estimate a range of possible loss. However, because of the nature and inherent uncertainties of litigation, should the outcome of these actions be unfavorable, the Company’s business, financial condition, results of operations or cash flows could be materially and adversely affected.

Claims Against eSilicon Corporation

In connection with the Company's acquisition of eSilicon Corporation (“eSilicon”) as discussed in Note 17, eSilicon and the Company have received written communications from certain former stockholders of eSilicon demanding to inspect eSilicon’s books and records and indicating that such stockholders will be seeking appraisal of shares they held in eSilicon. Certain of these former eSilicon stockholders also have stated that they may assert claims against eSilicon’s directors and senior officers for alleged breaches of fiduciary duty and other violations in connection with the merger between eSilicon and a subsidiary of the Company. The Company is unaware of any petition for appraisal and/or lawsuit being filed by any former eSilicon stockholder. The Company believes that the claims in such written communications are without merit, and plan to vigorously defend against lawsuits arising out of or relating to the merger agreement and/or the merger that may be filed in the future.

Indemnifications

In the ordinary course of business, the Company may provide indemnifications of varying scope and terms to customers, vendors, lessors, investors, directors, officers, employees and other parties with respect to certain matters, including, but not limited to, losses arising out of the Company’s breach of such agreements, services to be provided by the Company, or from intellectual property infringement claims made by third-parties. These indemnifications may survive termination of the underlying agreement and the maximum potential amount of future payments the Company could be required to make under these indemnification provisions may not be subject to maximum loss clauses. The Company has not incurred material costs to defend lawsuits or settle claims related to these indemnifications. Accordingly, the Company has no liabilities recorded for these agreements as of December 31, 2019 and December 31, 2018.

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Notes to Consolidated Financial Statements
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17. Subsequent Events

In January 2020, the Company completed its acquisition of eSilicon for approximately \$215,000 in cash, subject to certain adjustments including cash, debt and transaction expenses. A portion of the consideration has been placed in an escrow fund for up to 12 months (or up to 36 months in certain circumstances) following the closing for the satisfaction of certain indemnification obligations.

In February 2020, the compensation committee of the Board of Directors approved long-term grants to employees of 1,247,109 equity awards consisting of RSUs and MVSUs.

18. Supplementary Financial Information (Unaudited)

Quarterly Results of Operations

| | Year Ended December 31, 2019 | | | |
|---------------------------------|---|-----------------|------------------|-----------------|
| | Mar. 31, | Jun. 30, | Sept. 30, | Dec. 31, |
| | 2019 | 2019 | 2019 | 2019 |
| | (in thousands, except per share amounts) | | | |
| Revenue..... | \$ 82,223 | \$ 86,285 | \$ 94,231 | \$ 102,896 |
| Gross profit..... | 47,631 | 49,109 | 54,482 | 61,599 |
| Net loss..... | (22,745) | (20,578) | (16,180) | (13,408) |
| Basic earnings per share..... | (0.51) | (0.46) | (0.36) | (0.29) |
| Diluted earnings per share..... | (0.51) | (0.46) | (0.36) | (0.29) |

| | Year Ended December 31, 2018 | | | |
|---------------------------------|---|-----------------|------------------|-----------------|
| | Mar. 31, | Jun. 30, | Sept. 30, | Dec. 31, |
| | 2018(1) | 2018 | 2018 | 2018(2) |
| | (in thousands, except per share amounts) | | | |
| Revenue..... | \$ 60,136 | \$ 69,814 | \$ 78,009 | \$ 86,531 |
| Gross profit..... | 32,546 | 39,611 | 43,462 | 49,526 |
| Net loss..... | (22,991) | (28,464) | (22,665) | (21,631) |
| Basic earnings per share..... | (0.53) | (0.65) | (0.52) | (0.49) |
| Diluted earnings per share..... | (0.53) | (0.65) | (0.52) | (0.49) |

As further described in note 1, in connection with the preparation of the Company's 2019 year-end audited consolidated financial statements, the Company identified a classification error in its previously filed unaudited interim condensed consolidated statements of cash flows for the three, six and nine months ended March 31, 2019 and March 31, 2018, June 30, 2019 and June 30, 2018 and September 30, 2019 and September 30, 2018, respectively. Specifically, it was determined that payments made under the Company's multi-year agreements for the purchase of internal use intangible assets should have been classified as use of cash for financing activities and not as use of cash for investing activities as originally presented.

Management has concluded that such classification error did not result in the previously issued unaudited interim condensed consolidated financial statements being materially misstated. The Company will, however, revise the 2019 unaudited quarterly condensed consolidated statements of cash flows in connection with the future filings of its 2020 Form 10-Qs to correct for such classification error.

-
- (1) The benefit for income taxes included partial release of federal valuation allowance resulting from the transfer of an acquired in-process research and development to developed technology in 2018 which allowed the related deferred tax liability to be considered a source of income for realizing deferred tax assets, as well as the revaluation of the foreign deferred tax liability on the in-process research and development based on the foreign tax rates applicable to the anticipated reversal periods.
 - (2) The Company recorded a charge of \$7,000 due to impairment of a non-marketable equity investment.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) *Evaluation of disclosure controls and procedures.* We maintain “disclosure controls and procedures,” as such term is defined in Rules 13a-15 (e) and 15d – 15(e) under the Exchange Act, that are designed to provide reasonable assurance that information required to be disclosed by us in reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer (principal executive officer) and Chief Financial Officer (principal financial officer), as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Our disclosure controls and procedures have been designed to provide reasonable, not absolute assurance. Additionally, in designing disclosure controls and procedures, our management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. The design of any disclosure controls and procedures also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

Based on their evaluation as of the end of the period covered by this Annual Report on Form 10-K, our Chief Executive Officer and Chief Financial Officer have concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

(b) *Management’s Annual Report on Internal Control over Financial Reporting.* Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). 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 policies or procedures may deteriorate. Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of our internal control over financial reporting as of December 31, 2019. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control — Integrated Framework (2013)*. Based on the assessment using those criteria, our management concluded that as of December 31, 2019, our internal control over financial reporting was effective. The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included in Part II “Item 8, Financial Statements and Supplementary Data.”

(c) *Changes in Internal Control over Financial Reporting.* There has been no change in our “internal control over financial reporting” as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act, during our most recent fiscal quarter that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated by reference from the information under the captions “Election of Directors,” “Section 16(a) Beneficial Ownership Reporting Compliance” and “Corporate Governance” contained in our proxy statement to be filed with the SEC in connection with the solicitation of proxies for our 2019 Annual Meeting of Stockholders to be held on May 21, 2020 pursuant to Regulation 14A and no later than 120 days after December 31, 2019 (the Proxy Statement).

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference from the information under the captions “Election of Directors,” “Compensation of Directors,” “Compensation Discussion and Analysis,” “Corporate Governance,” “Compensation Committee Report” and “Executive Compensation” contained in the Proxy Statement.

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

The information required by this item with respect to security ownership of certain beneficial owners and management is incorporated by reference from the information under the captions “Equity Compensation Plan Information,” “Security Ownership of Certain Beneficial Owners and Management” and “Executive Compensation” contained in the Proxy Statement.

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

The information required by this item is incorporated by reference from the information under the captions “Corporate Governance” and “Certain Relationships and Related Person Transactions” contained in the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this item is incorporated by reference from the information under the captions “Audit Committee Report” and “Ratification of the Appointment of Independent Registered Public Accountants” contained in the Proxy Statement.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

1. Financial Statements. See “Index to Consolidated Financial Statements” under Part II, “Item 8, Financial Statements and Supplementary Data.”

(a) *Documents filed as part of this report:*

- (1) Financial Statements

Reference is made to the Index to Consolidated Financial Statements of Inphi Corporation under Part II, “Item 8, Financial Statements and Supplementary Data.”

- (2) Financial Statement Schedules

All financial statement schedules have been omitted because they are not applicable or not required or because the information is included elsewhere in the Consolidated Financial Statements or the Notes thereto.

- (3) Exhibits

See Item 15(b) below. Each management contract or compensatory plan or arrangement required to be filed has been identified.

(b) *Exhibits*

The exhibits listed in the Exhibit Index below are filed or incorporated by reference as part of this report.

| Exhibit Number | Description |
|---------------------------|---|
| 2.1* | Agreement and Plan of Merger dated November 10, 2019 by and among the Registrant, Einstein Acquisition Sub, Inc., eSilicon Corporation, and Fortis Advisors LLC, solely in its capacity as Securityholders' Agent (incorporated by reference to exhibit 2.1 of the Registrant's Current Report on Form 8-K filed with the SEC on November 12, 2019). |
| 2.2* | Amendment No. 1 to Agreement and Plan of Merger dated January 10, 2020 by and among the Registrant, Einstein Acquisition Sub, Inc., eSilicon Corporation, and Fortis Advisors LLC, a Delaware limited liability company, solely in its capacity as Securityholders' Agent (incorporated by reference to exhibit 2.2 of the Registrant's Current Report on Form 8-K filed with the SEC on January 13, 2020). |
| 3(i) | Restated Certificate of Incorporation of the Registrant (incorporated by reference to exhibit 3(i) of the Registrant's Annual Report on Form 10-K filed with the SEC on March 7, 2011). |
| 3(ii) | Amended and Restated Bylaws of the Registrant (incorporated by reference to exhibit 3.1 of the Registrant's Current Report on Form 8-K filed with the SEC on October 20, 2015). |
| 4.1 | Specimen Common Stock Certificate (incorporated by reference to exhibit 4.1 filed with Registration Statement on Form S-1 (File No. 333-167564), as amended). |
| 4.2 | Description of Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934. |
| 4.3 | Amended and Restated Investors' Rights Agreement dated August 12, 2010 (incorporated by reference to exhibit 4.2 of the Registrant's Annual Report on Form 10-K filed with the SEC on March 7, 2011). |
| 4.4 | Indenture dated December 8, 2015 between the Registrant and Wells Fargo Bank, National Association, as trustee (including form of Note) (incorporated by reference to exhibit 4.1 of the Registrant's Current Report on Form 8-K filed with the SEC on December 8, 2015). |
| 4.5 | Indenture dated September 12, 2016 between the Registrant and Wells Fargo Bank, National Association, as trustee (including form of Note) (incorporated by reference to exhibit 4.1 of the Registrant's Current Report on Form 8-K filed with the SEC on September 12, 2016). |
| 10.1+ | Inphi Corporation 2000 Stock Option/Stock Issuance Plan (as amended on June 2, 2010) and related form stock option plan agreements (incorporated by reference to exhibit 10.1 filed with Registration Statement on Form S-1 (File No. 333-167564), as amended). |
| 10.2+ | Inphi Corporation 2010 Stock Incentive Plan and related form agreements (incorporated by reference to exhibit 10.2 of the Registrant's Annual Report on Form 10-K filed with the SEC on March 7, 2011). |
| 10.3+ | Form of Indemnification Agreement between the Registrant and its officers and directors (incorporated by reference to exhibit 10.3 filed with Registration Statement on Form S-1 (File No. 333-167564), as amended). |
| 10.4+ | Offer letter dated December 10, 2007 between John Edmunds and the Registrant, as amended (incorporated by reference to exhibit 10.6 to filed with Registration Statement on Form S-1 (File No. 333-167564), as amended). |
| 10.5+ | Offer letter dated October 3, 2007 between Ron Torten and the Registrant, as amended (incorporated by reference to exhibit 10.8 filed with Registration Statement on Form S-1 (File No. 333-167564), as amended). |
| 10.6+ | Offer letter dated February 1, 2012 between Ford Tamer and the Registrant (incorporated by reference to exhibit 10.2 of the Registrant's Current Report on Form 8-K filed with the SEC on February 3, 2012). |
| 10.7+ | Amended and Restated Severance and Change of Control Agreement, effective as of August 1, 2019, by and between Ford Tamer and the Registrant (incorporated by reference to exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the three months ended June 30, 2019). |

- 10.8+ Amended and Restated Change of Control Severance Agreement, effective as of August 1, 2019, by and between John Edmunds and the Registrant (incorporated by reference to exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the three months ended June 30, 2019).
- 10.9+ Amended and Restated Severance and Change of Control Agreement, effective as of August 1, 2019, by and between Charlie Roach and the Registrant (incorporated by reference to exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q for the three months ended June 30, 2019).
- 10.10+ Form of Change of Control Severance Agreement for Executive Officers (incorporated by reference to exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the three months ended June 30, 2019).
- 10.11 Lease Agreement dated June 4, 2010 by and between the Registrant and LBA Realty Fund III—Company VII, LLC (incorporated by reference to exhibit 10.12 filed with Registration Statement on Form S-1 (File No. 333-167564), as amended).
- 10.12 Lease Agreement dated September 20, 2012 by and between the Registrant and Bayland Corporation (incorporated by reference to exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q for the three months ended September 30, 2012).
- 10.13 Second Amendment to Lease Agreement dated September 30, 2012 by and between the Registrant and LBA Realty Fund III—Company VII, LLC (incorporated by reference to exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q for the three months ended September 30, 2012).
- 10.14+ Inphi Corporation Amended and Restated Employee Stock Purchase Plan, as amended and restated effective April 3, 2015 and as further amended and restated effective April 17, 2018 (incorporated by reference from Annex A to the Registrant's definitive proxy statement filed on April 25, 2018).
- 10.15 Base Capped Call Confirmation dated December 2, 2015 by and between Registrant and Morgan Stanley & Co. LLC (incorporated by reference to exhibit 10.1 of the Registrant's Current Report on Form 8-K filed with the SEC on December 8, 2015).
- 10.16 Base Capped Call Confirmation dated December 2, 2015 by and between Registrant and JPMorgan Chase Bank, National Association, London Branch (incorporated by reference to exhibit 10.2 of the Registrant's Current Report on Form 8-K filed with the SEC on December 8, 2015).
- 10.17 Additional Capped Call Confirmation dated December 4, 2015 by and between Registrant and Morgan Stanley & Co. LLC (incorporated by reference to exhibit 10.3 of the Registrant's Current Report on Form 8-K filed with the SEC on December 8, 2015).
- 10.18 Additional Capped Call Confirmation dated December 4, 2015 between Registrant and JPMorgan Chase Bank, National Association, London Branch (incorporated by reference to exhibit 10.4 of the Registrant's Current Report on Form 8-K filed with the SEC on December 8, 2015).
- 10.19 Base Capped Call Confirmation dated September 6, 2016 between the Registrant and Morgan Stanley & Co. LLC (incorporated by reference to exhibit 10.1 of the Registrant's Current Report on Form 8-K filed with the SEC on September 12, 2016).
- 10.20 Base Capped Call Confirmation dated September 6, 2016 between the Registrant and JPMorgan Chase Bank, National Association, London Branch (incorporated by reference to exhibit 10.2 of the Registrant's Current Report on Form 8-K filed with the SEC on September 12, 2016).
- 10.21 Additional Capped Call Confirmation dated September 7, 2016 between the Registrant and Morgan Stanley & Co. LLC (incorporated by reference to exhibit 10.3 of the Registrant's Current Report on Form 8-K filed with the SEC on September 12, 2016).
- 10.22 Additional Capped Call Confirmation dated September 7, 2016 between the Registrant and JPMorgan Chase Bank, National Association, London Branch (incorporated by reference to exhibit 10.4 of the Registrant's Current Report on Form 8-K filed with the SEC on September 12, 2016).

- 10.23+ Form of Stock Unit Agreement (U.S. and Non-U.S. Employees and Consultants) under the Inphi Corporation 2010 Stock Incentive Plan (incorporated by reference to exhibit 10.23 of the Registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018).
- 10.24+ Form of Stock Option Agreement (U.S. and Non-U.S. Employees and Consultants) under the Inphi Corporation 2010 Stock Incentive Plan (incorporated by reference to exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q for the three months ended September 30, 2016).
- 10.25+ Form of Notice of Stock Unit Award and Stock Unit Agreement (incorporated by reference to exhibit 4.1 of the Registrant's Registration Statement on Form S-8 filed with the SEC on January 11, 2017).
- 10.26+ Amended and Restated Inphi Corporation 2010 Stock Incentive Plan dated July 19, 2017 (incorporated by reference to exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the three months ended June 30, 2017).
- 10.27+ Inphi Corporation Annual Incentive Plan (incorporated by reference to exhibit 10.1 of the Registrant's current report on Form 8-K filed with the SEC on January 22, 2018).
- 10.28 Third Amendment to Lease Agreement dated July 31, 2013 by and between the Registrant and LBA Realty Fund III—Company VII, LLC (incorporated by reference to exhibit 10.33 of the Registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018).
- 10.29 Fourth Amendment to Lease Agreement dated August 10, 2016 by and between the Registrant and LBA Realty Fund III—Company VII, LLC (incorporated by reference to exhibit 10.34 of the Registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018).
- 10.30 Fifth Amendment to Lease Agreement dated March 7, 2017 by and between the Registrant and LBA Realty Fund III—Company VII, LLC (incorporated by reference to exhibit 10.35 of the Registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018).
- 10.31 First Amendment to Lease Agreement dated May 28, 2014 by and between the Registrant and Bayland Corporation (incorporated by reference to exhibit 10.36 of the Registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018).
- 10.32 Second Amendment to Lease Agreement dated January 13, 2017 by and between the Registrant and Bayland Corporation (incorporated by reference to exhibit 10.37 of the Registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018).
- 10.33 Third Amendment to Lease Agreement dated September 23, 2019 by and between the Registrant and Wilson Bunker Hill. LLC.
- 10.34 Lease Agreement dated October 24, 2019 by and between the Registrant and RTP55 OWNER, LLC.
- 10.35 First Amendment to Office Lease dated December 30, 2019 by and between the Registrant and RTP55 OWNER, LLC.

| | |
|---------|--|
| 21.1 | List of Subsidiaries. |
| 23.1 | Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm. |
| 24.1 | Power of Attorney (see the signature page of this report). |
| 31.1 | Certificate of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. |
| 31.2 | Certificate of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. |
| 32.1(1) | Certificate of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350). |
| 32.2(1) | Certificate of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350). |
| 101.INS | XBRL Instance Document- the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document. |
| 101.SCH | Inline XBRL Taxonomy Extension Schema Document |
| 101.CAL | Inline XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.DEF | Inline XBRL Taxonomy Extension Definition Linkbase Document |
| 101.LAB | Inline XBRL Taxonomy Extension Label Linkbase Document |
| 101.PRE | Inline XBRL Taxonomy Extension Presentation Linkbase Document |
| 104 | Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101). |

+ Indicates management contract or compensatory plan.

* The registrant hereby undertakes to furnish supplementally a copy of any omitted schedule or exhibit to such agreement to the SEC upon request.

(1) The material contained in Exhibit 32.1 and Exhibit 32.2 is not deemed “filed” with the SEC and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933 or the Securities Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language contained in such filing, except to the extent that the registrant specifically incorporates it by reference.

(c) *Financial Statements and Schedules*

Reference is made to Item 15(a)(2) above.

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.

INPHI CORPORATION,
(Registrant)

By: /s/ Ford Tamer

Ford Tamer
President and Chief Executive Officer
(Principal Executive Officer)

By: /s/ John Edmunds

John Edmunds
Chief Financial Officer and Chief Accounting Officer
(Principal Financial Officer and Principal Accounting Officer)

March 2, 2020

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Ford Tamer and John Edmunds, and each of them, his or her true and lawful attorneys-in-fact, each with full power of substitution, for him or her in any and all capacities, to sign any amendments to this report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact or their substitute or substitutes may do or cause to be done by virtue hereof.

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.

| <u>Name</u> | <u>Title</u> | <u>Date</u> |
|---|--|---------------|
| <u>/s/ Ford Tamer</u> Ford Tamer | Chief Executive Officer, President and Director (Principal Executive Officer) | March 2, 2020 |
| <u>/s/ John Edmunds</u> John Edmunds | Chief Financial Officer and Chief Accounting Officer (Principal Financial and Accounting Officer) | March 2, 2020 |
| <u>/s/ Diosdado P. Banatao</u> Diosdado P. Banatao | Chairman of the Board | March 2, 2020 |
| <u>/s/ Nicholas Brathwaite</u> Nicholas Brathwaite | Director | March 2, 2020 |
| <u>/s/ Chenming C. Hu</u> Chenming C. Hu | Director | March 2, 2020 |
| <u>/s/ David Liddle</u> David Liddle | Director | March 2, 2020 |
| <u>/s/ Bruce McWilliams</u> Bruce McWilliams | Director | March 2, 2020 |
| <u>/s/ Elissa Murphy</u> Elissa Murphy | Director | March 2, 2020 |
| <u>/s/ William J. Ruele</u> William J. Ruele | Director | March 2, 2020 |
| <u>/s/ Sam S. Srinivasan</u> Sam S. Srinivasan | Lead Director | March 2, 2020 |

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Inphi Delivers Leading Edge Products

2014
45G Linear Modulator Driver
+
45G Coherent TIA
+
PAM

2016
COLORZ® for 80km DWDM
+
SiPho Platform for 100G Data Center
+
Shipped 1M 100G Coherent Amplifiers & Drivers
+
64G Coherent TIA
+
Lowest Power CDR
+
400G CFP8 Platform (28nm PAM DSP / Driver / TIA)

2020
Spica™ First 7nm 800G PAM4 DSP
+
Porrima™ Gen3 Single-Lambda PAM4 platform
+
Canopus™ First 7nm Coherent DSP 100/200/300/400G
+
COLORZ® II First 400ZR QSFP-DD Transceiver
+
Capella™ 7nm 56G SerDes

2012
28G CMOS SERDES
+
32G Linear Modulator Driver

2019
Porrima™ 400G PAM4 Production
+
Porrima™ Gen2 with Integrated CMOS Driver
+
56G TIA & Driver

2018
Porrima™ Platform (Porrima 100/400G DSP + Driver + TIA)
+
28G MMF Linear TIA + VCSEL Driver
+
56G TIA & Driver
+
CFEC Adopted as OIF ZR Standard

2009
28G Coherent TIA
+
28 Gbps Differential Modulator Driver

2017
64G Coherent Driver
+
28G EML Linear Driver
+
Polaris™ Platform (16nm PAM DSP / Driver / TIA)
+
M200 Low power Coherent DSP for Metro & Long Haul
+
Vega™ DSP
16nm Retimer & Gearbox for LineCards

2001
40G Differential Driver Modulator Driver
+
40G TIA

2015
Smallest Form Factor
+
SMT Linear Driver
+
PAM 4

Inphi Recognized for Excellence 22 New Awards for Quality & Technology in 2017-2020

| | | | | | | | | | | |
|--|--|--|--|---|---|--|---|---|---|---|
| <p>Huawei Best Quality Company</p> <p>2017 2018</p> | <p>Fujitsu Technical Advancement</p> <p>2019 2017</p> | <p>Innolight Innovation</p> <p>2017</p> | <p>FiberHome Supplier of the Year</p> <p>2017 2018 2019</p> | <p>Lightwave Innovation for COLORZ, COLORZ II, PAM4, Polaris, Porrima and Canopus</p> <p>2017 2018 2019 2020</p> | <p>Hisense Best Delivery</p> <p>2018</p> | <p>H3C Outstanding Contribution</p> <p>2019</p> | <p>SEDi (Sumitomo Electronics Device Innovations) Best Cooperation</p> <p>2019</p> | <p>Cisco Best Delivery</p> <p>2018</p> | <p>ECN Excellence in Emerging Technology</p> <p>2017</p> | <p>ECN IMPACT Award 2017</p> |
|--|--|--|--|---|---|--|---|---|---|---|

Investor Information



Stock Exchange Listing: NYSE

Ticker Symbol: IPHI

Investor Relations (408) 217-7308 investors@inphi.com

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