# 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**

**For the transition period from _________ to _________**

**Commission File Number 001-34791**

# MagnaChip Semiconductor Corporation

**(Exact name of registrant as specified in its charter)**

| | |
|---|---|
| **Delaware** | **83-0406195** |
| **(State or Other Jurisdiction of Incorporation or Organization)** | **(I.R.S. Employer Identification No.)** |

**c/o MagnaChip Semiconductor S.A.**
**1, Allée Scheffer, L-2520**
**Luxembourg, Grand Duchy of Luxembourg**
**(Address of principal executive offices) (Zip Code)**

**Registrant's telephone number, including area code: (352) 45-62-62**

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

| Title of each class | Trading Symbol | Name of each exchange on which registered |
|---|---|---|
| **Common Stock, par value $0.01 per share** | **MX** | **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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 Rule 12b-2 of the Act). ☐ Yes ☒ No

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter. $314,540,019.

As of February 14, 2020, the registrant had 34,801,312 shares of common stock outstanding.

## DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement relating to its 2020 annual meeting of stockholders will be incorporated by reference into Part III of this Annual Report on Form 10-K or included by amendment to this report within 120 days after the end of the fiscal year to which this report relates.

MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES
FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2019
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# PART I

## INDUSTRY AND MARKET DATA

We have made statements in this Annual Report on Form 10-K for the year ended December 31, 2019 (this "Report") regarding our industry and our position in the industry based on our experience in the industry and our own views of market conditions, but we have not independently verified those statements. We do not have any obligation to announce or otherwise make publicly available updates or revisions to forecasts contained in these documents.

Statements made in this Report, unless the context otherwise requires, include the use of the terms "us," "we," "our," the "Company" and "MagnaChip" to refer to MagnaChip Semiconductor Corporation and its consolidated subsidiaries. The term "Korea" refers to the Republic of Korea or South Korea.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

We have made certain "forward-looking" statements in this Report within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), that involve risks and uncertainties. Forward-looking statements give our current expectations and projections relating to our financial condition, results of operations, plans, objectives, future performance and business. You can identify these statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as "anticipate," "estimate," "expect," "project," "intend," "plan," "believe" and other words and terms of similar meaning in connection with any discussion of the timing or nature of future operating or financial performance or other events. All statements other than statements of historical facts included in this Report that address activities, events or developments that we expect, believe or anticipate will or may occur in the future are forward-looking statements.

These forward-looking statements are largely based on our expectations and beliefs concerning future events, which reflect estimates and assumptions made by our management. These estimates and assumptions reflect our best judgment based on currently known market conditions and other factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control. Although we believe our estimates and assumptions to be reasonable, they are inherently uncertain and involve a number of risks and uncertainties that are beyond our control. In addition, management's assumptions about future events may prove to be inaccurate. Management cautions all readers that the forward-looking statements contained in this Report are not guarantees of future performance, and we cannot assure any reader that those statements will be realized or the forward-looking events and circumstances will occur. Actual results may differ materially from those anticipated or implied in the forward-looking statements due to the factors listed in the "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business" sections and elsewhere in this Report.

All forward-looking statements speak only as of the date of this Report. We do not intend to publicly update or revise any forward-looking statements as a result of new information or future events or otherwise, except as required by law. These cautionary statements qualify all forward-looking statements attributable to us or persons acting on our behalf.

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"MagnaChip" is a registered trademark of us and our subsidiaries and "MagnaChip Everywhere" is our registered trademark and service mark. All other product, service and company names mentioned in this Report are the service marks or trademarks of their respective owners.

## Item 1. Business

### General

We are a designer and manufacturer of analog and mixed-signal semiconductor platform solutions for communications, Internet of Things (“IoT”) applications, consumer, industrial and automotive applications. We provide technology platforms for analog, mixed-signal, power, high voltage, non-volatile memory, and Radio Frequency (“RF”) applications. We have a proven record with more than 40 years of operating history, a portfolio of approximately 2,950 registered patents and pending applications and extensive engineering and manufacturing process expertise. Our business is comprised of two operating segments: Foundry Services Group and Standard Products Group. Our Foundry Services Group provides specialty analog and mixed-signal foundry services mainly for fabless and Integrated Device Manufacturer (“IDM”) semiconductor companies that primarily serve communications, IoT, consumer, industrial and automotive applications. Our Standard Products Group is comprised of two business lines: Display Solutions and Power Solutions. Our Display Solutions products provide panel display solutions to major suppliers of large and small rigid and flexible panel displays, and mobile, automotive applications and home appliances. Our Power Solutions products include discrete and integrated circuit solutions for power management in communications, consumer and industrial applications.

Our wide variety of analog and mixed-signal semiconductor products and manufacturing services combined with our mature technology platform allow us to address multiple high-growth end markets and to rapidly develop and introduce new products and services in response to market demands. Our design center and substantial manufacturing operations in Korea place us at the core of the global electronics device supply chain. We believe this enables us to quickly and efficiently respond to our customers’ needs and allows us to better serve and capture additional demands from existing and new customers.

We have a long history of supplying and collaborating on product and technology development with leading innovators in the consumer electronics market. As a result, we have been able to strengthen our technology platform and develop products and services that are in high demand by our customers and end consumers. We sold over 2,200 distinct products in each of the years ended December 31, 2019 and December 31, 2018, with a substantial portion of our revenues derived from a concentrated number of customers. Our largest Foundry Services Group customers include some of the leading semiconductor companies that design analog and mixed-signal products for communications, IoT, consumer, industrial and automotive applications.

Our business is largely driven by innovation in the consumer electronics markets and the growing adoption by consumers worldwide of electronic devices for use in their daily lives. The consumer electronics market is large and growing rapidly, largely due to consumers increasingly accessing a wide variety of rich media content, such as high definition audio and video, mobile devices, televisions and games on advanced consumer electronic devices. Electronics manufacturers are continuously implementing advanced technologies in new generations of electronic devices using analog and mixed-signal semiconductor components, such as display drivers that enable display of high resolution images, encoding and decoding devices that allow playback of high definition audio and video, and power management semiconductors that increase power efficiency, thereby improving heat dissipation and extending battery life.

For the year ended December 31, 2019, we generated net sales of $792.2 million, net loss of $21.8 million, Adjusted EBITDA of $74.5 million and Adjusted Net Income of $17.1 million. See “Item 6. Selected Financial Data” and “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” elsewhere in this Report for an explanation of our use of Adjusted EBITDA and Adjusted Net Income and a reconciliation to net income (loss) prepared in accordance with United States Generally Accepted Accounting Principles (“US GAAP”).

**Our History**

Our business was named “MagnaChip Semiconductor” when it was acquired from SK hynix Inc., formerly known as Hynix Semiconductor, Inc. (“SK hynix”), in October 2004. We refer to this acquisition as the “Original Acquisition.”

On March 10, 2011, we completed our initial public offering. In connection with our initial public offering, we converted from a Delaware limited liability company to a Delaware corporation.

**Our Products and Services**

Our Display Solutions line of products provides flat panel display solutions to major suppliers of large and small flat panel displays. These products include source and gate drivers and timing controllers that cover a wide range of flat panel displays used in high definition (HD), full high definition (FHD), ultra high definition (UHD), light emitting diode (LED), 3D and organic light emitting diodes (OLED) televisions and displays, notebooks and mobile communications and entertainment devices. Our Display Solutions line of products support the industry’s most advanced display technologies, such as OLEDs, and low temperature polysilicons thin film transistor (LTPS TFT), as well as high-volume display technologies such as amorphous silicon thin film transistors (a-Si TFTs). Our Display Solutions products represented 38.9%, 34.1% and 30.8% of our net sales for the fiscal years ended December 31, 2019, 2018 and 2017, respectively.

We expanded our business and market opportunity by establishing our Power Solutions product line in late 2007. We have introduced a number of power management semiconductor products, including discrete and integrated circuit solutions for power management in high-volume consumer applications. These products include metal oxide semiconductor field effect transistors (MOSFETs), insulated-gate bipolar transistors (IGBTs), AC-DC converters, DC-DC converters, LED drivers, switching regulators and linear regulators for a range of devices, including televisions, smartphones, mobile phones, desktop PCs, notebooks, tablet PCs, other consumer electronics, and industrial applications such as power suppliers, e-bike, photovoltaic inverter, LED lighting, motor drive and home appliances. Our Power Solutions products represented 22.2%, 22.5% and 22.0% of our net sales for the fiscal years ended December 31, 2019, 2018 and 2017, respectively.

Through our Foundry Services Group, we also offer foundry services to fabless analog and mixed-signal semiconductor companies and IDMs that require differentiated, specialty analog and mixed-signal process technologies. Our process technologies are optimized for analog and mixed-signal devices and include standard complementary metal-oxide semiconductor (CMOS), high voltage CMOS, ultra-low leakage high voltage CMOS and bipolar complementary double-diffused metal oxide semiconductor (BCDMOS) and electronically erasable programmable read only memory (EEPROM). Our Foundry Services Group customers use us to manufacture a wide range of products, including display drivers, LED drivers, audio encoding and decoding devices, microcontrollers, touch screen controllers, RF switches, park distance control sensors for automotive, electronic tag memories and power management semiconductors. Our Foundry Services Group business represented 38.8%, 43.3% and 47.1% of our net sales for the fiscal years ended December 31, 2019, 2018 and 2017, respectively.

We manufacture the majority of our products at our two fabrication facilities located in Korea. We have approximately 500 proprietary process flows we can utilize for our products and offer to our Foundry Services Group customers. Our manufacturing base serves both our display driver and power management businesses and Foundry Services Group customers, allowing us to optimize our asset utilization and leverage our investments across our product and service offerings. Analog and mixed-signal manufacturing facilities and processes are typically distinguished by design and process implementation expertise rather than the use of the most advanced equipment. These processes also tend to migrate more slowly to smaller geometries due to technological barriers and increased costs. For example, some of our products use high-voltage technology that requires larger geometries and that may not migrate to smaller geometries for several years, if at all. As a result, our manufacturing base and strategy do not require substantial investment in leading edge process equipment, allowing us to utilize our facilities and equipment over an extended period of time with moderate required capital investments.

### Market Opportunity

The semiconductor market is large and is expanding its applications. Growth in this market is being driven by consumers seeking to enjoy a wide variety of rich media content, such as high definition audio and video, mobile devices, televisions and games. Electronics device manufacturers recognize that the consumer entertainment experience plays a critical role in differentiating their products. To address and further stimulate consumer demand, electronics manufacturers have been driving rapid advances in the technology, functionality, form factor, cost, quality, reliability and power consumption of their products. Electronics manufacturers are continuously implementing advanced technologies in new generations of electronic devices using analog and mixed-signal semiconductor components, such as display drivers that enable display of high resolution images, encoding and decoding devices that allow playback of high definition audio and video, and power management semiconductors that increase power efficiency, thereby improving heat dissipation and extending battery life. These advanced generations of consumer devices are growing faster than the overall electronics device market.

The user experience delivered by a consumer electronic device is substantially driven by the quality of the display, audio and video processing capabilities and power efficiency of the device. Analog and mixed-signal semiconductors enable and enhance these capabilities. Examples of these analog and mixed-signal semiconductors include display drivers, timing controllers, audio encoding and decoding devices, or codecs, and interface circuits, as well as power management semiconductors such as voltage regulators, converters and switches.

### Requirements of Leading Electronic Devices Manufacturers

We believe our target customers view the following characteristics and capabilities as key differentiating factors among available analog and mixed-signal semiconductor suppliers and manufacturing service providers:

- ***Broad Offering of Differentiated Products with Advanced System-Level Features and Functions.*** Leading electronic devices manufacturers seek to differentiate their products by incorporating innovative semiconductor products that enable unique system-level functionality and enhance performance. These consumer electronics manufacturers seek to closely collaborate with semiconductor solutions providers that continuously develop new and advanced products, technologies, and manufacturing processes that enable state of the art features and functions, such as bright and thin displays, small form factor and energy efficiency.
- ***Fast Time-to-Market with New Products.*** As a result of rapid technological advancements and short product lifecycles, our target customers typically prefer suppliers who have a compelling pipeline of new products and capacity to leverage a substantial intellectual property and technology base to accelerate product design and manufacturing when needed.
- ***Nimble, Stable and Reliable Manufacturing Services.*** Fabless semiconductor providers who rely on external manufacturing services often face rapidly changing product cycles. If these fabless companies are unable to meet the demand for their products due to issues with their manufacturing services providers, their profitability and market share can be significantly impacted. As a result, they prefer foundry service providers that can increase production quickly and meet demand consistently through periods of constrained industry capacity. Furthermore, many fabless semiconductor providers serving the consumer electronics and industrial sectors need specialty analog and mixed-signal manufacturing capabilities to address their product performance and cost requirements.
- ***Ability to Deliver Cost Competitive Solutions.*** Electronics manufacturers are under constant pressure to deliver cost-competitive solutions. To accomplish this objective, they need strategic semiconductor suppliers that have the ability to provide system-level solutions, highly integrated products and a broad product offering at a range of price points and have the design and manufacturing infrastructure and logistical support to deliver cost competitive products.
- ***Focus on Delivering Highly Energy-Efficient Products.*** Consumers increasingly seek longer run-time, environmentally friendly and energy-efficient consumer electronic products. In addition, there is increasing

regulatory focus on reducing energy consumption of consumer electronic products. As a result of global focus on more environmentally friendly products, our customers are seeking analog and mixed-signal semiconductor suppliers that have the technological expertise to deliver solutions that satisfy these ever increasing regulatory and consumer power efficiency demands.

### Our Competitive Strengths

Designing and manufacturing analog and mixed-signal semiconductors capable of meeting the evolving functionality requirements for electronics devices are challenging. In order to grow and succeed in the industry, we believe semiconductor suppliers must have a broad, advanced intellectual property portfolio, product design expertise, comprehensive product offerings and specialized manufacturing process technologies and capabilities. Our competitive strengths enable us to offer our customers solutions to solve their key challenges. We believe our strengths include:

- ***Advanced Analog and Mixed-Signal Semiconductor Technology and Intellectual Property Platform.*** We believe we have one of the broadest and deepest analog and mixed-signal semiconductor technology platforms in the industry. Our long operating history, large patent portfolio, extensive engineering and manufacturing process expertise and wide selection of analog and mixed-signal intellectual property libraries allow us to leverage our technology and develop new products across multiple end markets. Our product development efforts are supported by a team of 414 engineers as of the date of this Report. Our platform allows us to develop and introduce new products quickly as well as to integrate numerous functions into a single product. For example, we were one of the first companies to introduce a commercial OLED display driver for mobile phones.

- ***Established Relationships and Close Collaboration with Leading Global Electronics Companies.*** We have a long history of supplying and collaborating on product and technology development with leading innovators in the consumer electronics market. Our close customer relationships have been built based on many years of close collaborative product development which provides us with deep system level knowledge and key insights into our customers' needs. As a result, we are able to continuously strengthen our technology platform in areas of strategic interest for our customers and focus on those products and services that our customers and end consumers demand the most.

- ***Longstanding Presence in Asia and Proximity to Global Electronics Devices Supply Chain.*** Our presence in Asia facilitates close contact with our customers and fast response to their needs, and enhances our visibility into new product opportunities, markets and technology trends. Our design center and substantial manufacturing operations in Korea place us close to many of our largest customers and to the core of the global electronics devices supply chain. We have active applications, engineering, product design and customer support resources, as well as senior management and marketing resources, in geographic locations close to our customers. This allows us to strengthen our relationship with customers through better service, faster turnaround time and improved product design collaboration. We believe this also helps our customers to deliver products faster than their competitors and to solve problems more efficiently than would be possible with other suppliers.

- ***Broad Portfolio of Product and Service Offerings Targeting Large, High-Growth Markets.*** We continue to develop a wide variety of analog and mixed-signal semiconductor solutions for multiple high-growth electronics device end markets. We believe our expanding product and service offerings allow us to provide additional products to new and existing customers and to cross-sell our products and services to our established customers. For example, we have leveraged our technology expertise and customer relationships to develop and grow power management solutions to customers. Our power management solutions enable our customers to increase system stability and improve heat dissipation and energy use, resulting in improved system efficiency and system cost savings for our customers, as well as environmental benefits. We have been able to sell these new products to our existing customers as well as expand our customer base.

- ***Distinctive Analog and Mixed-Signal Process Technology Expertise and Manufacturing Capabilities.*** We have developed specialty analog and mixed-signal manufacturing processes such as high voltage CMOS, power and embedded memory. These processes enable us to flexibly ramp mass production of display, power and mixed-signal products, and shorten the duration from design to delivery of highly integrated, high-performance analog and mixed-signal semiconductors.
- ***Highly Efficient Manufacturing Capabilities.*** Our manufacturing strategy is focused on optimizing our asset utilization across our display driver and power management products as well as our foundry services, which enables us to maintain the price competitiveness of our products and services through our low-cost operating structure and improve our operational efficiency. We believe the location of our primary manufacturing and research and development facilities in Asia and the relatively low need for ongoing capital expenditures provide us with a number of cost advantages. We offer specialty analog process technologies that do not require substantial investment in leading edge, smaller geometry process equipment. We are able to utilize our manufacturing base over an extended period of time and thereby minimize our capital expenditure requirements.

### Our Strategy

Our objective is to grow our business, cash flow and profitability and to continue strengthening our position in the semiconductor industry as a leading provider of analog and mixed-signal semiconductor products and services for high-volume markets. Our business strategy emphasizes the following key elements:

- ***Leverage Our Advanced Analog and Mixed-Signal Technology Platform to Innovate and Deliver New Products and Services.*** We intend to continue to utilize our extensive patent and technology portfolio, analog and mixed-signal design and manufacturing expertise and specific end-market applications and system-level design expertise to deliver products with high levels of performance by utilizing our systems expertise and leveraging our deep knowledge of our customers' needs.
- ***Increase Business with Existing Customers.*** We have a global customer base consisting of leading consumer electronics OEMs that sell into multiple end markets. We intend to continue to strengthen our relationships with our customers by collaborating on critical design and product development in order to improve our design-win rates. We seek to increase our customer penetration by more closely aligning our product roadmap with those of our key customers and take advantage of our broad product portfolio, our deep knowledge of customer needs and existing relationships to sell more existing and new products.
- ***Broaden Our Customer Base.*** We expect to continue to expand our global design centers, local application engineering support and sales presence, particularly in China, Hong Kong, Taiwan and Macau, or collectively, Greater China, and other high-growth geographies, to penetrate new accounts. In addition, we intend to introduce new products and variations of existing products to address a broader customer base. In order to broaden our market penetration, we are complementing our direct customer relationships and sales with an improved base of distributors, especially to aid the growth of our power management business.
- ***Drive Execution Excellence.*** We intend to improve our execution through a number of management initiatives, new processes for product development, customer service and personnel development. We expect these ongoing initiatives will contribute to improvement of our new product development and customer service as well as enhance our commitment to a culture of quick action and execution by our workforce. In addition, we have focused on improving our manufacturing efficiency during the past several years.
- ***Optimize Asset Utilization, Return on Capital Investments and Cash Flow Generation.*** We intend to keep our capital expenditures relatively low by maintaining our focus on specialty process technologies that do not require substantial investment in frequent upgrades to the latest manufacturing equipment. By utilizing our manufacturing facilities for our Display Solutions and Power Solutions products and our Foundry Services Group customers, we seek to maximize return on our capital investments and our cash flow generation.

### Our Technology

We continuously strengthen our advanced analog and mixed-signal semiconductor technology platform by developing innovative technologies and integrated circuit building blocks that enhance the functionality of electronics devices through brighter, thinner displays, enhanced image quality, smaller form factor and longer battery life. We seek to further build our technology platform through proprietary processes and selective licensing and acquisition of complementary technologies, as well as disciplined process improvements in our manufacturing operations. Our goal is to leverage our experience and development initiatives across multiple end markets and utilize our understanding of system-level issues our customers face to introduce new technologies that enable our customers to develop more advanced, higher performance products.

Our display technology portfolio includes building blocks for display drivers and timing controllers, processor and interface technologies, as well as sophisticated production techniques, such as chip-on-glass (COG), chip-on-film (COF) and chip-on-plastic (COP) for rigid, flexible bezel-less, edge type, and trench type OLED displays. Our advanced display drivers incorporate LTPS TFT and OLED panel technologies that enable the highest resolution displays. Furthermore, we are developing a broad intellectual property portfolio to improve the power efficiency of displays, including the development of our contents-based automatic brightness control (CABC), automatic current limit (ACL) and optical compensation technology for OLED displays.

We have a long history of specialized process technology development and have a number of distinctive process implementations. We have approximately 500 process flows we can utilize for our products and offer to our Foundry Services Group customers. Our process technologies include standard CMOS, high voltage CMOS, ultra-low leakage high voltage CMOS, logic process based bipolar-CMOS-DMOS (BCDMOS), epi-based BCDMOS, and radio frequency silicon on insulator (RFSOI). Our manufacturing processes incorporate embedded memory solutions, such as static random access memory (SRAM), one-time programmable (OTP) memory, multiple-time programmable (MTP) memory, electrical fuse, eFlash and EEPROM. More broadly, we focus extensively on processes that reduce die size across all of the products we manufacture, in order to deliver cost-effective solutions to our customers.

Expertise in ultra-high voltage (UHV), high voltage and deep trench BCDMOS process technologies, low power analog and mixed-signal design capabilities and packaging know-how are key requirements in the power management market. We are currently leveraging our capabilities in these areas with products such as AC-DC converters, DC-DC converters, LED drivers, linear regulators and analog switches, power MOSFETs and IGBTs. We believe our system-level understanding of applications such as LCD televisions and smartphones will allow us to more quickly develop and customize power management solutions for our customers in these markets.

### Products and Services by Business Line

Our broad portfolio of products and services addresses multiple high-growth, consumer-focused end markets. A key component of our product strategy is to supply multiple related product and service offerings to each of the end markets that we serve.

### Foundry Services

We provide specialty analog and mixed-signal foundry services to fabless semiconductor companies and IDMs that serve communications, IoT, consumer, industrial and automotive applications. We manufacture wafers based on our customers' product designs. We do not market these products directly to end customers but rather supply manufactured wafers and products to our customers to market to their end customers. We offer approximately 500 process flows to our Foundry Services Group customers. We also often partner with key customers to jointly develop or customize specialized processes that enable our customers to improve their products and allow us to develop unique manufacturing expertise.

Our Foundry Services Group targets customers who require differentiated, specialty analog and mixed-signal process technologies such as high voltage CMOS, non-volatile memory and power. We refer to our approach of delivering specialized services to our customers as our application-specific technology strategy. We differentiate ourselves through the depth of our intellectual property portfolio, ability to customize process technology to meet the customers' requirements effectively, long history in this business and reputation for excellence.

Our Foundry Services Group customers vary from small fabless companies to large IDMs who serve communications, IoT, consumer, industrial and automotive applications.

***Process Technology Overview***

- ***Mixed-Signal.*** Mixed-signal process technology is used in devices that require conversion of light and sound into electrical signals for processing and display. Our mixed-signal processes include advanced technologies such as low-noise process using triple gate, which allows die size reduction at any given performance level.
- ***Power.*** Power process technology, such as BCD, includes high-voltage capabilities as well as the ability to integrate functionalities, such as self-regulation, internal protection and other intelligent features. Unique process features, such as deep trench isolation, thick inter-metal isolation and embedded high density non-volatile memory are suited for chip shrink and device performance enhancement.
- ***High Voltage CMOS.*** High-voltage CMOS process technology facilitates the use of high-voltage levels in conjunction with smaller transistor sizes. This process technology includes several variations, such as bipolar processes, which use transistors with qualities well suited for amplifying and switching applications, mixed-mode processes, which incorporate denser, more power efficient FETs, and thick metal processes.
- ***Non-Volatile Memory.*** Non-volatile memory (NVM), process technology enables the integration of non-volatile memory cells that allow retention of the stored information even when power is removed from the circuit. This type of memory is typically used for long-term persistent storage.

The table below sets forth the key process technologies in Foundry Services Group that we currently offer to customers:

| Process | Technology | Device | Application |
|---|---|---|---|
| Mixed-Signal | • 0.13-0.5µm<br>• Low noise<br>• Ultra low power<br>• Triple gate<br>• RF SOI<br>• 0.13µm Simplified*<br>• 0.18µm Simplified | • Analog to digital converter<br>• Digital to analog converter<br>• Audio amplifier<br>• Chipset<br>• RF switch<br>• Digital tunable capacitor<br>• Fingerprint sensor<br>• Hall sensor<br>• Isolator<br>• MEMS microphone sensor IC | • Smartphones<br>• Tablet PCs<br>• Notebooks<br>• PC peripherals<br>• Battery charger<br>• LED lighting<br>• Home appliance<br>• VR/AR |

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| Process | Technology | Device | Application |
|---|---|---|---|
| Power | • 0.13-0.35µm<br>• BCD 40V-200V*<br>• Deep trench isolation<br>• MOSFET<br>• Ultra high voltage<br>• Thick metal<br>• Slim BCD 100V*<br>• Simplified UHV<br>• SOI BCD* | • Power management<br>• LED driver<br>• High power audio amp<br>• Power Over Ethernet<br>• DC/DC converter<br>• AC/DC converter<br>• USB type-C<br>• Wireless power charger<br>• Motor driver<br>• High voltage switch | • Smartphones<br>• Tablet PCs<br>• Notebooks<br>• LCD TVs<br>• LED lighting<br>• LCD monitors<br>• Automotive<br>• Industrial<br>• Servers<br>• e-Bike<br>• Home appliance |
| High-Voltage CMOS | • 0.11-0.35µm<br>• 18V-45V<br>• Bipolar | • Display driver<br>• CSTN driver | • Smartphones<br>• Tablet PCs<br>• LCD TVs<br>• Desktop PCs<br>• LCD monitors |
| NVM | • 0.13-0.35µm<br>• EEPROM<br>• eFlash, Ultra low leakage<br>• eFlash<br>• OTP<br>• MTP<br>• eFuse | • Microcontroller<br>• Touch screen controller<br>• Electronic tag memory<br>• Hearing aid controller<br>• Fingerprint sensor<br>• Auto Focus IC<br>• Wireless power charger | • Smartphones<br>• Tablet PCs<br>• Industrial applications<br>• Medical equipment<br>• Automotive<br>• Home appliance |

* In customer qualification stage

**Display Solutions**

***Display Driver Characteristics.*** Display drivers deliver defined analog voltages and currents that activate pixels to exhibit images on displays. The following key characteristics determine display driver performance and end-market application:

- ***Resolution and Number of Channels.*** Resolution determines the level of detail displayed within an image and is defined by the number of pixels per line multiplied by the number of lines on a display. For large displays, higher resolution typically requires more display drivers for each panel. Display drivers that have a greater number of channels, however, generally require fewer display drivers for each panel and command a higher selling price per unit. Mobile displays, conversely, are typically single chip solutions designed to deliver a specific resolution. We cover resolutions ranging from VGA (640 x 480) to UHD (3840 x 2160).

- ***Color Depth.*** Color depth is the number of colors that can be displayed on a panel. For example, for TFT-LCD panels, 262 thousand colors are supported by 6-bit source drivers; 16 million colors are supported by 8-bit source drivers; and 1 billion colors are supported by 10-bit source drivers.

- ***Operational Voltage.*** Display drivers are characterized by input and output voltages. Source drivers typically operate at input voltages from 1.62 to 3.6 volts and output voltages between 9 and 18 volts. Gate drivers typically operate at input voltages from 1.62 to 3.6 volts and output voltages from 30 to 45 volts. Lower input voltage results in lower power consumption and electromagnetic interference (EMI).

- ***Gamma Curve.*** The relationship between the light passing through a pixel and the voltage applied to the pixel by the source driver is referred to as the gamma curve. The gamma curve of the source driver can correct some imperfections in picture quality in a process generally known as gamma correction. Some advanced display drivers feature up to three independent gamma curves to facilitate this correction.

- ***Driver Interface.*** Driver interface refers to the connection between the timing controller and the display drivers. Display drivers increasingly require higher bandwidth interface technology to address the larger data transfer rate necessary for higher definition images. The principal types of interface technologies are embedded clock point to point interface (EPI), advanced intra panel interface (AIPI), mini-low voltage differential signaling (m-LVDS), unified standard interface for notebook and monitor (USI-GF), unified standard interface (USI), unified standard interface for TV (USI-T) and mobile industry processor interface (MIPI).
- ***Package Type.*** The assembly of display drivers typically uses COF, COG and COP package types.

***Large Display Solutions.*** We provide display solutions for a wide range of flat panel display sizes used in LCD televisions, including ultra-high definition televisions, or UHD TVs, FHD TVs, HD TVs, LED TVs, 3D TVs, OLED TVs, LCD monitors, notebooks, tablet PCs, public information displays and automotive.

Our large display solutions include source and gate drivers and timing controllers with a variety of interfaces, voltages, frequencies and packages to meet customers' needs. These products include advanced technologies such as high channel count, with products in mass production to provide up to 1,542 channels. Our large display solutions are designed to allow customers to cost-effectively meet the increasing demand for high resolution displays. We focus extensively on reducing the die size of our large display drivers and other solutions products to reduce costs without having to migrate to smaller geometries. For example, we have implemented several solutions to reduce die size in large display drivers, such as optimizing design schemes and design rules and applying specific technologies that we have developed internally. We have recently introduced a number of new large display drivers with reduced die size.

The table below sets forth the features of our products, both in mass production and in customer qualification, which is the final stage of product development, for large-sized displays:

| Product | Key Features | Applications |
|---|---|---|
| TFT-LCD Source Drivers | • 480 to 1,542 output channels<br>• 6-bit (262 thousand colors), 8-bit (16 million colors), 10-bit (1 billion colors)<br>• Output voltage ranging from 9V to 18V<br>• Low power consumption and low EMI<br>• COF package types<br>• EPI, m-LVDS, AIPI, USI interface technologies | • UHD/HD/LED/3D TVs<br>• Notebooks<br>• LCD/LED monitors<br>• Automotive |
| TFT-LCD Gate Drivers | • 272 to 960 output channels<br>• Output voltage ranging from 30V to 45V<br>• COF and COG package types | • Tablet PCs<br>• HD/LED/3D TVs<br>• Notebooks<br>• Automotive |
| Timing Controllers | • Wide range of resolutions<br>• EPI, m-LVDS, MIPI, USI-T interface technologies<br>• Input voltage ranging from 1.6V to 3.6V | • Tablet PCs<br>• Public information display |
| OLED Source Drivers | • 960 output channels<br>• 10 bit (1 billion colors)<br>• Output voltage: 18V<br>• COF package type<br>• EPI interface technology | • OLED TVs |

***Mobile Display Solutions.*** Our mobile display solutions incorporate the industry's most advanced display technologies, such as OLED and LTPS, as well as high-volume technologies such as a-Si TFT. Our mobile display products offer specialized capabilities, including high speed serial interfaces, such as mobile display digital interface (MDDI), MIPI, reduced swing differential signaling interface (RSDS) and logic-based OTP memory. We focus extensively on reducing the die size of our mobile display drivers and other solutions products to reduce costs. For example, we have implemented several solutions to reduce die size in mobile display drivers, such as optimizing design schemes and design rules and applying specific technologies that we have developed internally. Further, we are building a distinctive intellectual property portfolio that allows us to provide features that reduce power consumption, such as CABC and ACL. This intellectual property portfolio will also support our power management product development initiatives, as we leverage our system level understanding of power efficiency. Our OLED driver ICs can support various configurations such as high resolution from FHD+(2,240x1,080) to QHD+(3,120x1,440), wide aspect ratio from 16:9 to 21:9 and flexible bezel-less, edge type, and trench type OLED displays. In the transition to, and adoption of, 5G, fast responses and high frame rates such as 90Hz and 120Hz are becoming essential product offerings. To meet this new and evolving demand, we have developed and mass produced our OLED display driver IC, which supports 90Hz/120Hz frame rates.

The following table summarizes the features of our products, both in mass production and in customer qualification, which is the final stage of product development, for mobile displays:

| Product | Key Features | Applications |
|---|---|---|
| OLED | • Resolutions of HD720, WXGA, FHD, FHD+, QHD and QHD+<br>• Aspect ratio from 16:9 to 21:9<br>• Color depth of 1 billion<br>• MIPI, eRVDS interface<br>• Logic-based OTP<br>• ABC, ACL | • Smartphones<br>• Game consoles<br>• Digital still cameras<br>• Tablet PCs<br>• Virtual reality headsets |
| LTPS | • Resolutions of VGA, WSVGA, WVGA and DVGA<br>• Color depth of 16 million<br>• MDDI, MIPI interface<br>• Logic-based OTP<br>• Separated gamma control | • Smartphones<br>• Digital still cameras |
| a-Si TFT | • Resolutions of WQVGA and HVGA<br>• Color depth of 16 million<br>• RSDS, MDDI, MIPI interface<br>• CABC<br>• Separated gamma control | • Mobile phones<br>• Digital still cameras<br>• Automotive |

## Power Solutions

We develop, manufacture and market power management solutions for a wide range of end-market customers. The products include MOSFETs, IGBTs, AC-DC converters, DC-DC converters, LED drivers, regulators, for a range of devices, including LCD, LED, and UHD televisions, digital signage, smartphones, mobile phones, desktop PCs, notebooks, tablet PCs, other consumer electronics, consumer appliances and industrial applications such as power suppliers, e-bikes, photovoltaic inverters, LED lighting and motor drives.

- ***MOSFETs.*** Our MOSFETs include low-voltage to mid-voltage, Trench MOSFETs, 12V to 150V, high-voltage Planar MOSFETs, 200V through 650V, and super junction MOSFETs, 500V through 900V.

MOSFETs are used in applications to switch, shape or transfer electricity under varying power requirements. The key application segments are smartphones, mobile phones, LCD, LED, and UHD televisions, desktop PCs, notebooks, tablet PCs, servers, lighting and power supplies for consumer electronics and industrial equipment. MOSFETs allow electronics manufacturers to achieve specific design goals of high efficiency and low standby power consumption. For example, computing solutions focus on delivering efficient controllers and MOSFETs for power management in VCORE, DDR and chipsets for audio, video and graphics processing systems.

- ***IGBTs.*** Our IGBTs include 650V to 1200V field stop trench IGBTs. IGBTs are used in high power industrial applications, such as UPSs, power supplies, motor drives, solar inverters, welding machines and consumer appliances.
- ***AC-DC Converters and DC-DC Converters.*** We offer AC-DC and DC-DC converters targeting mobile applications and high power applications like LCD, LED, and UHD televisions, notebooks, smartphones, mobile phones, set-top boxes and display modules. We expect our AC-DC and DC-DC converters will meet customer's green power requirements by featuring wide input voltage ranges, high efficiency and small size.
- ***LED Drivers.*** LED backlighting drivers serve the fast-growing LCD and LED panel backlighting market for LCD and LED televisions, LCD monitors, digital signage, notebooks, smartphones and tablet PCs. Our products are designed to provide high efficiency and wide input voltage range, as well as pulse width modulation (PWM) dimming for accurate white LED dimming control. LED lighting drivers have a wide input voltage range applicable to incandescent bulb and fluorescent lamp replacement.
- ***Regulators.*** We also provide analog regulators for mobile, computing and consumer applications. Our products are designed for high efficiency and low power consumption in mobile applications.
- ***SSD PMIC.*** We also provide solid state drive power management integrated circuit (SSD PMIC) for the computing segment. Our product is designed for high frequency switching, high efficiency and pulse frequency modulation (PFM) function to reduce power consumption in low load converters.

Our power management solutions enable customers to increase system stability and improve heat dissipation and energy use, resulting in cost savings for our customers and consumers, as well as environmental benefits. Our in-house process technology capabilities and eight-inch wafer production lines increase efficiency and contribute to the competitiveness of our products.

The following table summarizes the features of our products, both in mass production and in customer qualification, which is the final stage of product development:

| Product | Key Features | Applications |
|---|---|---|
| Low-Mid Voltage MOSFET | • Voltage options of 12V-150V<br>• Advanced Trench MOSFET Process<br>• High cell density<br>• Advanced packages to enable reduction of PCB mounting area | • Smartphones and mobile phones<br>• Tablet PCs, Notebooks<br>• Desktop PCs, Servers<br>• LCD/LED/UHD TVs<br>• Industrial applications<br>• Cryptocurrency miner |
| High Voltage MOSFET | • Voltage options of 200V-650V<br>• R2FET (rapid recovery) option to shorten reverse diode recovery time<br>• Zenor FET option for MOSFET protection for abnormal input<br>• Advanced Planar MOSFET Process<br>• Advanced packages to enable reduction of PCB mounting area | • Adaptors for tablet PC/mobile phone/smartphone<br>• Power supplies<br>• Lighting (ballast, HID, LED)<br>• Industrial applications<br>• LCD/LED/UHD TVs |

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| Product | Key Features | Applications |
| --- | --- | --- |
| Super Junction MOSFET | • Voltage options of 500V-900V<br>• Low $R_{DS(ON)}$<br>• Epi stack process<br>• Zenor FET option for MOSFET protection for abnormal input<br>• Advanced SJ MOSFET process<br>• Advanced packages to enable reduction of PCB mounting area | • LCD/LED/UHD TVs<br>• Lightings applications (ballast, HID, LED)<br>• Smartphones<br>• Power supplies<br>• Servers<br>• Industrial applications |
| IGBTs | • Voltage options of 650V/1200V<br>• Field Stop Trench IGBT<br>• Current options from 15A to 60A | • Industrial applications<br>• Consumer appliances |
| AC-DC Converter | • Wide control range for high power application (>150W)<br>• Advanced BCDMOS process<br>• High Precision Voltage Reference<br>• Very low startup current consumption | • LCD/LED/UHD TVs<br>• Power supplies |
| DC-DC Converters | • High efficiency, wide input voltage range<br>• Advanced BCDMOS process<br>• Fast load and line regulation<br>• Accurate output voltage<br>• OCP, SCP and thermal protections | • LCD/LED/UHD TVs<br>• Smartphones<br>• Mobile phones<br>• Notebooks<br>• Set-top boxes |
| LED Backlighting Drivers | • High efficiency, wide input voltage range<br>• Advanced BCDMOS process<br>• OCP, SCP, OVP and UVLO protections<br>• Accurate LED current control and multi-channel matching<br>• Programmable current limit, boost up frequency | • Tablet PCs<br>• Notebooks<br>• Smartphones<br>• LED/UHD TVs<br>• LED monitors |
| Digital Controlled LED Driver | • Multi-channel constant current control<br>• 12Bit gray scale with SPI | • Digital signage |
| LED Lighting Drivers | • High efficiency, wide input voltage range<br>• Simple solutions with external components fully integrated<br>• Advanced high voltage BCDMOS process<br>• Accurate LED current control and high power factor and low THB | • AC and DC LED lighting |

| Product | Key Features | Applications |
|---|---|---|
| Regulators | • Single and multi-regulators<br>• Low Noise Output regulators<br>• Wide range of input voltage and various output current<br>• CMOS and BCDMOS processes<br>• LDO (Low Drop Out — Linear Regulator) | • Smartphones and Mobile phones<br>• Notebooks<br>• Computing |
| SSD PMIC | • High current buck<br>• PFM function<br>• High frequency switching<br>• High efficiency<br>• High integration technology<br>• Small QFN package | • Computing |

### Sales and Marketing

We focus our sales and marketing strategy on continuing to grow and leverage our existing relationships with leading consumer electronics OEMs, while expanding into industrial and automotive end markets. For Foundry Services Group, we focus on analog and mixed-signal semiconductor companies who see the benefit of our innovative technology and cost structure. We believe our close collaboration with customers allows us to align our product and process technology development with our customers' existing and future needs. Because our customers often service multiple end markets, our product sales teams are organized by customers within the major geographies. We believe this facilitates the sale of products that address multiple end-market applications to each of our customers. Our Foundry Services Group sales teams focus on marketing our services to analog and mixed-signal semiconductor companies that require specialty manufacturing processes.

We sell our products through a direct sales force and a network of authorized agents and distributors. We have strategically located our sales and technical support offices near our customers. Our direct sales force consists primarily of representatives co-located with our design center in Korea, as well as our local sales and support offices in the US, Japan, Greater China and Europe. We have a network of agents and distributors in Korea, the US, Japan, Greater China and Europe. For the years ended December 31, 2019, 2018 and 2017, we derived 78%, 77% and 75% of net sales through our direct sales force, respectively, and 22%, 23% and 25% of net sales through our network of authorized agents and distributors, respectively.

### Customers

We sell our Display Solutions and Power Solutions products to consumer, computing and industrial electronics OEMs, original design manufacturers and electronics manufacturing services companies, as well as subsystem designers. We sell our foundry services to analog and mixed-signal semiconductor companies. For the years ended December 31, 2019, 2018 and 2017, our ten largest customers accounted for 67%, 61% and 57% of our net sales, respectively. Our arrangements with and reliance on key customers, particularly customers for our display products and services, may make it less practicable to pursue certain opportunities with other potential new and existing customers For the year ended December 31, 2019, sales to Samsung Display represented 32.9% of our net sales and 84.5% of our Display Solutions division's net sales. For the year ended December 31, 2018, sales to Samsung Display represented 19.3% of our net sales and 56.6% of our Display Solutions division's net sales, and LG Display represented 13.3% of our net sales and 38.9% of our Display Solutions division's net sales. For the year ended December 31, 2017, sales to LG Display represented 15.6% of our net sales and 50.6% of our Display Solutions division's net sales. For the year ended December 31, 2019, we recorded revenues of $28.1 million from customers in the US and $764.1 million from all foreign countries, of which 46.0% was from Greater China, 32.6% from Korea, 12.7% from Taiwan and 4.2% from the United Kingdom. For the year ended

December 31, 2018, we recorded revenues of $37.5 million from customers in the US and $713.4 million from all foreign countries, of which 39.6% was from Korea, 35.5% from Greater China, 14.0% from Taiwan and 4.5% from the United Kingdom. For the year ended December 31, 2017, we recorded revenues of $35.1 million from customers in the US and $644.6 million from all foreign countries, of which 43.4% was from Korea, 24.9% from Greater China, 18.2% from Taiwan and 3.7% from the United Kingdom.

**Intellectual Property**

As of December 31, 2019, our portfolio of intellectual property assets included approximately 2,676 registered patents and 265 pending patent applications. Approximately 1,886 and 115 of our patents and pending applications, respectively, are novel in that they are not a foreign counterpart of an existing patent or patent application. Because we file patents in multiple jurisdictions, we additionally have approximately 790 registered patents and 150 pending applications that relate to identical technical claims in our base patent portfolio. Our patents expire at various times approximately over the next 18 years. While these patents are in the aggregate important to our competitive position, we do not believe that any single registered or pending patent is material to us.

We have entered into exclusive and non-exclusive licenses and development agreements with third parties relating to the use of intellectual property of the third parties in our products and design processes, including licenses related to embedded memory technology, design tools, process simulation tools, circuit designs and processor cores. Some of these licenses, including our agreements with Silicon Works Co., Ltd. and ARM Limited, are material to our business and may be terminated by the licensors prior to the expiration of these licenses should we fail to cure any breach under such licenses. Our license with Silicon Works Co., Ltd. relates to our large display drivers, and our license from ARM Limited primarily relates to product lines in our Foundry Services Group business. The loss of either license could have a material adverse impact on our results of operations. Additionally, in connection with the Original Acquisition, SK hynix retained a perpetual license to use the intellectual property that we acquired from SK hynix in the Original Acquisition. Under this license, SK hynix and its subsidiaries are free to develop products that may incorporate or embody intellectual property developed by us prior to October 2004. See "Item 1A. Risk Factors—Risks Related to Our Business—Our ability to compete successfully and achieve future growth will depend, in part, on our ability to protect our intellectual property, proprietary technology and know-how, as well as our ability to operate without infringing the proprietary rights of others."

**Competition**

We operate in highly competitive markets characterized by rapid technological change and continually advancing customer requirements. Although no one company competes with us in all of our product lines, we face significant competition in each of our market segments. Our competitors include other independent and captive manufacturers and designers of analog and mixed-signal integrated circuits, including display driver and power management semiconductor devices, as well as companies providing specialty manufacturing services.

We compete based on design experience, manufacturing capabilities, the ability to service customer needs from the design phase through the shipping of a completed product, length of design cycle and quality of technical support and sales personnel. Our ability to compete successfully will depend on internal and external variables, both within and outside of our control. These variables include the timeliness with which we can develop new products and technologies, product performance and quality, manufacturing yields, capacity availability, customer service, pricing, industry trends and general economic trends.

**Employees**

Our worldwide workforce consisted of 2,451 employees (full- and part-time) as of December 31, 2019, of which 336 were involved in sales, marketing, general and administrative, 414 in research and development (including 189 with advanced degrees), 102 in quality, reliability and assurance and 1,599 in manufacturing (comprised of 244 in engineering and 1,355 in operations). As of December 31, 2019, our workforce consisted of 2,451 employees, of which 1,449 employees, or approximately 59% of our workforce, were represented by the MagnaChip Semiconductor Labor Union.

**Environmental**

We are subject to a variety of environmental, health and safety laws and regulations in each of the jurisdictions in which we operate, governing, among other things, air emissions, wastewater discharges, the generation, use, handling, storage and disposal of, and exposure to, hazardous substances (including asbestos) and waste, soil and groundwater contamination and employee health and safety. These laws and regulations are complex, change frequently and have tended to become more stringent over time. Since 2015, our Korean subsidiary has been subject to a new set of greenhouse gas emissions regulation, the Korean Emissions Trading Scheme, or K-ETS, under the Act on Allocation and Trading of Greenhouse Gas Emission Allowances. Under K-ETS, our Korean subsidiary was allocated a certain amount of emissions allowance in accordance with the National Allocation Plan prepared by the Korean government and is required to meet its allocated target by either reducing the emission or purchasing the allowances from other participants in the emission trading market. Another example is the newly reinforced regulations on chemicals under Chemicals Control Act and K-REACH, which came into effect on January 1, 2015. Under these laws, our Korean subsidiary is required to comply with various requirements to report, evaluate, manage and ensure the safe usage of the chemicals used in its facilities. There can be no assurance that we have been or will be in compliance with all of these laws and regulations, or that we will not incur material costs or liabilities in connection with these laws and regulations in the future. The adoption of new environmental, health and safety laws and the failure to comply with new or existing laws or issues relating to hazardous substances could subject us to material liability (including substantial fines or penalties), impose the need for additional capital equipment or other process requirements upon us, curtail our operations or restrict our ability to expand operations.

**Raw Materials**

We use processes that require specialized raw materials that are generally available from a limited number of suppliers. We continue to attempt to qualify additional suppliers for our raw materials. The Securities and Exchange Commission (the “SEC”), as mandated by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, adopted new disclosure regulations for public companies that manufacture products containing certain minerals that are mined from the Democratic Republic of Congo and adjoining countries. These “conflict minerals” are commonly found in metals used in the manufacture of semiconductors. The implementation of these new requirements could adversely affect the sourcing, availability and pricing of metals used in the manufacture of our products. See “Item 1A. Risk Factors—Risks Related to Our Business—Compliance with new regulations regarding the use of “conflict minerals” could limit the supply and increase the cost of certain raw materials used in manufacturing our products.”

**Available Information**

Our principal executive office is located at: c/o MagnaChip Semiconductor S.A., 1, Allée Scheffer, L-2520 Luxembourg, Grand Duchy of Luxembourg, and our telephone number is (352) 45-62-62. Our website address is www.magnachip.com. Our annual, quarterly and current reports on Forms 10-K, 10-Q or 8-K, respectively, and all amendments thereto filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, can be accessed, free of charge, at our website as soon as practicable after such reports are filed with the SEC. In addition, our Corporate Governance Guidelines, Code of Business Conduct and Ethics, Clawback Policy, Audit Committee Charter, Compensation Committee Charter, Nominating and Governance Committee Charter and Risk Committee Charter are available on our website. Information contained on our website does not constitute, and shall not be deemed to constitute, part of this Report and shall not be deemed to be incorporated by reference into this Report. In addition, the SEC maintains an internet site, www.sec.gov, from which you can access our annual, quarterly and current reports on Form 10-K, 10-Q and 8-K, respectively, and all amendments to these materials after such reports and amendments are filed with the SEC. You may also request a copy of these filings, at no cost, by writing or telephoning us at the following address or phone number: c/o MagnaChip Semiconductor, Inc., 60 South Market Street, Suite 750, San Jose, CA 95113, Attention: General Counsel and Secretary; the telephone number at that address is (408) 625-5999.

### Information About Our Executive Officers

The following table sets forth certain information regarding our current executive officers:

| Name | Age | Position |
|---|---|---|
| Young-Joon (YJ) Kim | 55 | Director and Chief Executive Officer |
| Jonathan Kim | 45 | Chief Financial Officer, Executive Vice President and Chief Accounting Officer |
| Theodore Kim | 50 | Chief Compliance Officer, Executive Vice President, General Counsel and Secretary |
| Woung Moo Lee | 57 | Executive Vice President and General Manager, Standard Products Group |

***Young-Joon (YJ) Kim, Director and Chief Executive Officer.*** Mr. YJ Kim became our Chief Executive Officer in May 2015 and has also served as a director on our Board since that time. He is also serving as the acting General Manager of Foundry Services Group, a position he has held since January 2019. Mr. Kim joined our company in May 2013 and served as our Executive Vice President and General Manager, Display Solutions Division. He was promoted to Interim Chief Executive Officer in May 2014. Prior to joining our company, Mr. Kim held a variety of senior management roles at several global semiconductor firms in a career spanning nearly 30 years. His past roles include marketing, engineering, product development and strategic planning, and his product expertise includes microprocessors, network processors, FLASH, EPROM, analog, mixed-signal, sensors, workstations and servers. Immediately before joining our company, Mr. Kim served as Vice President, Infrastructure Processor Division, and General Manager of the OCTEON Multi-Core Processor Group of Cavium, Inc., where he worked from 2006 to 2013. Prior to Cavium, Mr. Kim served as Core Team Lead and General Manager of the Tolapai Program at Intel Corporation from 2004 to 2006. In 1998, Mr. Kim co-founded API Networks, a joint venture between Samsung and Compaq, where he served as the head of product management, worldwide sales and business development for Alpha processors. Prior to API Networks, Mr. Kim served as Director of Marketing at Samsung Semiconductor, Inc. from 1996 to 1998. Mr. Kim began his career as a product engineer at Intel Corporation. Mr. Kim holds B.S. and M. Eng. degrees in Electrical Engineering from Cornell University. Our Board has concluded that Mr. YJ Kim is a valuable member of the Board based on his understanding of our company's products and technology as our Chief Executive Officer and his deep knowledge of the semiconductor industry.

***Jonathan Kim (J. Kim), Chief Financial Officer, Executive Vice President and Chief Accounting Officer*.** Mr. Jonathan Kim was appointed Chief Financial Officer and Executive Vice President in May 2015, after serving as our Interim Chief Financial Officer, Chief Accounting Officer and Senior Vice President since March 2014. Prior to joining MagnaChip, Mr. Kim served since July 2010 as the Chief Financial Officer of StartForce, Inc., a VC backed desktop virtualization company, which was acquired in February 2011 by ZeroDesktop, Inc., a leading developer of next-generation desktop virtualization and cloud computing solutions. Mr. Kim continued to serve as the Chief Financial Officer at ZeroDesktop through March 2014. Mr. Kim also served as a principal at a Silicon Valley based investment and advisory firm where he led investments in startup companies in the US and Korea. Mr. Kim began his career in public accounting and held various positions with Deloitte for nearly 10 years, serving Global Fortune 500 and US multinational publicly traded clients in the Technology, Media & Telecommunication sectors. Mr. Kim holds a B.A. degree in Business Administration from the Foster School of Business at the University of Washington and is a Certified Public Accountant.

***Theodore Kim (T. Kim), Chief Compliance Officer, Executive Vice President, General Counsel and Secretary.*** Mr. T. Kim became our Chief Compliance Officer and Executive Vice President in May 2015, and became our General Counsel and Secretary in November 2013. Mr. T. Kim previously served as our Senior Vice President from November 2013 to May 2015. Prior to joining our company, Mr. T. Kim served as Head Lawyer, Global Business Development at Samsung Fire & Marine Insurance from October 2012 to October 2013. Mr. T. Kim was employed by Gibson, Dunn & Crutcher LLP, a law firm, from October 2005 to July 2012, serving most recently as Of Counsel. Prior to that, he served as Foreign Legal Consultant at Kim & Chang, a law firm in Korea, from 2001 to 2005, and prior to that, he worked as an associate attorney at Morrison & Foerster LLP, a law firm, from 1997 to 2001. Mr. Kim holds a B.A. degree in Economics and a B.S. degree in Mechanical Engineering from the University of California, Irvine, and a J.D. degree from the University of California, Los Angeles, School of Law.

***Woung Moo Lee, Executive Vice President and General Manager, Standard Products Group.*** Mr. Woung Moo Lee became our Executive Vice President and General Manager, Standard Products Group in November 2015. He previously served as our Senior Vice President, Korea Sales from 2013. Prior to joining our company, he was one of the founding executives and served as Vice President, Global Strategy and Marketing, Samsung LED Co., Ltd. from 2009 to 2011. In 1984, Mr. Lee began his career as a memory semiconductor design engineer and served as Vice President of Memory Strategy & Marketing Team at Samsung Electronics Co., Ltd. until 2009. Mr. Lee received the “Proud Samsung Employee Award” in 2005 and holds a B.S. degree in Electronic Engineering from Inha University.

## Item 1A. Risk Factors

*You should carefully consider the risk factors set forth below as well as the other information contained in this Report. Any of the following risks could materially and adversely affect our business, financial condition or results of operations. As a result, the price of our common stock could decline and you could lose all or part of your investment in our common stock. Additional risks and uncertainties not currently known to us or those currently viewed by us to be immaterial may also materially and adversely affect our business, financial condition or results of operations.*

### Risks Related to Our Business

***We operate in the highly cyclical semiconductor industry, which is subject to significant downturns that may negatively impact our results of operations.***

The semiconductor industry is highly cyclical and is characterized by constant and rapid technological change and price erosion, evolving technical standards, short product life cycles (for semiconductors and for the end-user products in which they are used) and wide fluctuations in product supply and demand. From time to time, these and other factors, together with changes in general economic conditions, cause significant upturns and downturns in the industry in general and in our business in particular. Periods of industry downturns have been characterized by diminished demand for end-user products, high inventory levels, underutilization of manufacturing capacity, changes in revenue mix and accelerated erosion of average selling prices. We have experienced these conditions in our business in the past and may experience renewed, and possibly more severe and prolonged, downturns in the future as a result of such cyclical changes. This may reduce our results of operations.

We base our planned operating expenses in part on our expectations of future revenue, and a significant portion of our expenses is relatively fixed in the short term. If revenue for a particular quarter is lower than we expect, we likely will be unable to proportionately reduce our operating expenses for that quarter, which would harm our operating results for that quarter.

***Our restructuring activities and dispositions of assets and businesses could result in lost business and other costs that could have a material adverse effect on our results of operations.***

From time to time, we may choose to sell assets, restructure business operations, shut down manufacturing lines or otherwise dispose of assets and businesses as part of management's strategies to better align our product offerings with market demands and our customers' needs. In connection with these activities, we face risks that we will disrupt service to our customers, lose business and incur significant costs related to such activities. These risks include potential damage to our reputation and customer relationships if we are unable to effectively transition such customer relationships to other production lines or products or if we cannot effectively manage our supplier and vendor relationships during such activities. In addition, we may also face claims or costs associated with transitioning or eliminating certain employee positions and modifying or terminating vendor relationships in connection with those exit activities.

***If we fail to develop new products and process technologies or enhance our existing products and services in order to react to rapid technological change and market demands, our business will suffer.***

Our industry is subject to constant and rapid technological change and product obsolescence as customers and competitors create new and innovative products and technologies. Products or technologies developed by other companies may render our products or technologies obsolete or noncompetitive, and we may not be able to access advanced process technologies, including smaller geometries, or to license or otherwise obtain essential intellectual property required by our customers.

We must develop new products and services and enhance our existing products and services to meet rapidly evolving customer requirements. We design products for customers that continually require higher performance and functionality at lower costs. We must, therefore, continue to enhance the performance and functionality of our products. The development process for these advancements is lengthy and requires us to accurately anticipate technological changes and market trends. Developing and enhancing these products is uncertain and can be time-consuming, costly and complex. If we do not continue to develop and maintain process technologies that are in demand by our Foundry Services Group customers, we may be unable to maintain existing customers or attract new customers.

Customer and market requirements can change during the development process. There is a risk that these developments and enhancements will be late, fail to meet customer or market specifications or not be competitive with products or services from our competitors that offer comparable or superior performance and functionality. Any new products, such as our expanding line of power management solutions, or product or service enhancements, may not be accepted in new or existing markets. Our business will suffer if we fail to develop and introduce new products and services or product and service enhancements on a timely and cost-effective basis.

***We manufacture our products based on our estimates of customer demand, and if our estimates are incorrect, our financial results could be negatively impacted.***

We make significant decisions, including determining the levels of business that we will seek and accept, production schedules, component procurement commitments, personnel needs and other resource requirements, based on our estimates of customer demand and expected demand for and success of their products. The short-term nature of commitments by many of our customers and the possibility of rapid changes in demand for their products reduces our ability to estimate accurately future customer demand for our products. On occasion, customers may require rapid increases in supply, which can challenge our production resources and reduce margins. We may not have sufficient capacity at any given time to meet our customers' increased demand for our products. Conversely, downturns in the semiconductor industry have caused and may in the future cause our customers to reduce significantly the amount of products they order from us. Because many of our costs and operating expenses are relatively fixed, a reduction in customer demand would decrease our results of operations, including our gross profit.

***Our customers may cancel their orders, reduce quantities or delay production, which would adversely affect our margins and results of operations.***

We generally do not obtain firm, long-term purchase commitments from our customers. Customers may cancel their orders, reduce quantities or delay production for a number of reasons. Cancellations, reductions or delays by a significant customer or by a group of customers, which we have experienced as a result of periodic downturns in the semiconductor industry, or failure to achieve design-wins, have affected and may continue to affect our results of operations adversely. These risks are exacerbated because many of our products are customized, which hampers our ability to sell excess inventory to the general market. We may incur charges resulting from the write-off of obsolete inventory. In addition, while we do not obtain long-term purchase commitments, we generally agree to the pricing of a particular product over a set period of time. If we underestimate our costs when determining pricing, our margins and results of operations would be adversely affected.

***We depend on high utilization of our manufacturing capacity, a reduction of which could have a material adverse effect on our business, financial condition and the results of our operations.***

An important factor in our success is the extent to which we are able to utilize the available capacity in our fabrication facilities. As many of our costs are fixed, a reduction in capacity utilization, as well as changes in other factors, such as reduced yield or unfavorable product mix, could reduce our profit margins and adversely affect our operating results. A number of factors and circumstances may reduce utilization rates, including periods of industry overcapacity, low levels of customer orders, operating inefficiencies, strategic evaluations and decisions by our Board related our overall business, divisions and business lines, mechanical failures and disruption of operations due to expansion or relocation of operations, power interruptions and fire, flood or other natural disasters or calamities. The potential delays and costs resulting from these factors and circumstances could have a material adverse effect on our business, financial condition and results of operations.

***A significant portion of our sales comes from a relatively limited number of customers, the loss of which could adversely affect our financial results.***

Historically, we have relied on a limited number of customers for a substantial portion of our total revenue. If we were to lose key customers or if customers cease to place orders for our high-volume products or services, particularly our display products and services, our financial results could be adversely affected. In addition, our arrangements with and reliance on key customers may make it less practicable to pursue certain opportunities with other potential new and existing customers. For the years ended December 31, 2019, 2018 and 2017, our ten largest customers accounted for 67%, 61% and 57% of our net sales, respectively. For the year ended December 31, 2019, sales to Samsung Display represented 32.9% of the Company’s net sales and 84.5% of our Display Solutions division’s net sales. For the year ended December 31, 2018, sales to Samsung Display represented 19.3% of the Company’s net sales and 56.6% of our Display Solutions division’s net sales, and LG Display represented 13.3% of the Company’s net sales and 38.9% of our Display Solutions division’s net sales. For the year ended December 31, 2017, sales to LG Display represented 15.6% of the Company’s net sales and 50.6% of our Display Solutions division’s net sales. Significant reductions in sales to any of these customers, especially our few largest customers, the loss of other major customers or a general curtailment in orders for our high-volume products or services within a short period of time could adversely affect our business.

***The average selling prices of our semiconductor products have at times declined rapidly and will likely do so in the future, which could harm our revenue and gross profit.***

The semiconductor products we develop and sell are subject to rapid declines in average selling prices. From time to time, we have had to reduce our prices significantly to meet customer requirements, and we may be required to reduce our prices in the future. This would cause our gross profit to decrease. Our financial results will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing our costs or developing new or enhanced products on a timely basis with higher selling prices or gross profit.

***Our industry is highly competitive, and our ability to compete could be negatively impacted by a variety of factors.***

The semiconductor industry is highly competitive and includes hundreds of companies, a number of which have achieved substantial market share within both our product categories and end markets. Current and prospective customers for our products and services evaluate our capabilities against the merits of our competitors. Some of our competitors are well established as independent companies and have substantially greater market share and manufacturing, financial, research and development and marketing resources than we do. We also compete with emerging companies that are attempting to sell their products in certain of our end markets and with the internal semiconductor design and manufacturing capabilities of many of our significant customers. We expect to experience continuing competitive pressures in our markets from existing competitors and new entrants.

Any consolidation among our competitors could enhance their product offerings and financial resources, further enhancing their competitive position. Our ability to compete will depend on a number of factors, including the following:

- our ability to offer cost-effective and high quality products and services on a timely basis using our technologies;
- our ability to accurately identify and respond to emerging technological trends and demand for product features and performance characteristics;
- our ability to continue to rapidly introduce new products that are accepted by the market;
- our ability to adopt or adapt to emerging industry standards;
- the number and nature of our competitors and competitiveness of their products and services in a given market;
- entrance of new competitors into our markets;
- our ability to enter the highly competitive power management market; and
- our ability to continue to offer in demand foundry services at competitive prices.

Many of these factors are outside of our control. In the future, our competitors may replace us as a supplier to our existing or potential customers, and our customers may satisfy more of their requirements internally. As a result, we may experience declining revenues and results of operations.

***Changes in demand for consumer electronics in our end markets can impact our results of operations.***

Demand for our products will depend in part on the demand for various consumer electronics products, in particular, mobile phones and multimedia devices, digital televisions, flat panel displays, mobile PCs and digital cameras, which in turn depends on general economic conditions and other factors beyond our control. If our customers fail to introduce new products that employ our products or component parts, demand for our products will suffer. To the extent that we cannot offset periods of reduced demand that may occur in these markets through greater penetration of these markets or reduction in our production and costs, our sales and gross profit may decline, which would negatively impact our business, financial condition and results of operations.

***If we fail to achieve design-wins for our semiconductor products, we may lose the opportunity for sales to customers for a significant period of time and be unable to recoup our investments in our products.***

We expend considerable resources on winning competitive selection processes, known as design-wins, to develop semiconductor products for use in our customers' products. These selection processes are typically lengthy and can require us to incur significant design and development expenditures. We may not win the competitive selection process and may never generate any revenue despite incurring significant design and development expenditures. Once a customer designs a semiconductor into a product, that customer is likely to continue to use the same semiconductor or enhanced versions of that semiconductor from the same supplier across a number of similar and successor products for a lengthy period of time due to the significant costs associated with qualifying a new supplier and potentially redesigning the product to incorporate a different semiconductor. If we fail to achieve initial design-wins in a customer’s qualification process, we may lose the opportunity for significant sales to that customer for a number of products and for a lengthy period of time. This may cause us to be unable to recoup our investments in our semiconductor products, which would harm our business.

***We have lengthy and expensive design-to-mass production and manufacturing process development cycles that may cause us to incur significant expenses without realizing meaningful sales, the occurrence of which would harm our business.***

The cycle time from the design stage to mass production for some of our products is long and requires the investment of significant resources with many potential customers without any guarantee of sales. Our design-to-mass production cycle typically begins with a three-to-twelve month semiconductor development stage and test period followed by a three-to-twelve month end-product qualification period by our customers. The fairly lengthy front end of our sales cycle creates a risk that we may incur significant expenses but may be unable to realize meaningful sales. Moreover, prior to mass production, customers may decide to cancel their products or change production specifications, resulting in sudden changes in our product specifications, increasing our production time and costs. Failure to meet such specifications may also delay the launch of our products or result in lost sales.

In addition, we collaborate and jointly develop certain process technologies and manufacturing process flows customized for certain of our Foundry Services Groups customers. To the extent that our Foundry Services Group customers fail to achieve market acceptance for their products, we may be unable to recoup our engineering resources commitment and our investment in process technology development, which would harm our business.

***Research and development investments may not yield profitable and commercially viable product and service offerings and thus will not necessarily result in increases in revenues for us.***

We invest significant resources in our research and development. Our research and development efforts, however, may not yield commercially viable products or enhance our services offerings. During each stage of research and development, there is a substantial risk that we will have to abandon a potential product or service offering that is no longer marketable and in which we have invested significant resources. In the event we are able to develop viable new products or service offerings, a significant amount of time will have elapsed between our investment in the necessary research and development effort and the receipt of any related revenues.

***We face numerous challenges relating to executing our growth strategy, and if we are unable to execute our growth strategy effectively, our business and financial results could be materially and adversely affected.***

Our growth strategy is to leverage our advanced analog and mixed-signal technology platform, continue to innovate and deliver new products and services, increase business with existing customers, broaden our customer base, aggressively grow our power business, drive execution excellence and focus on specialty process technologies. If we are unable to execute our growth strategy effectively, we may not be able to take advantage of market opportunities, execute our business plan or respond to competitive pressures. Moreover, if our allocation of resources does not correspond with future demand for particular products, we could miss market opportunities and our business and financial results could be materially and adversely affected.

***We are subject to risks associated with currency fluctuations, and changes in the exchange rates of applicable currencies could impact our results of operations.***

Historically, a portion of our revenues and greater than the majority of our operating expenses and costs of sales have been denominated in non-U.S. currencies, principally the Korean won, and we expect that this will remain true in the future. Because we report our results of operations in US dollars, changes in the exchange rate between the Korean won and the US dollar could materially impact our reported results of operations and distort period to period comparisons. In particular, because of the difference in the amount of our consolidated revenues and expenses that are in US dollars relative to Korean won, a depreciation in the US dollar relative to the Korean won could result in a material increase in reported costs relative to revenues, and therefore could cause our profit margins and operating income to appear to decline materially, particularly relative to prior periods. The converse is true if the US dollar were to appreciate relative to the Korean won. For example, foreign currency fluctuations had a favorable impact on our reported profit margins and operating income from operations for the fiscal year ended December 31, 2019 due to a relatively weaker Korean won during the period. Moreover, our foreign currency gain or loss would be affected by changes in the exchange rate between the Korean won and the US dollar as a substantial portion of non-cash translation gain or loss is associated with the intercompany long-term loans to our Korean subsidiary, which is denominated in US dollars. As of December 31, 2019, the outstanding intercompany loan balance including accrued interests between our Korean subsidiary and our Dutch subsidiary was $686.5 million. Our Dutch subsidiary uses the US dollar as their functional currency. As a result of foreign currency fluctuations, it could be more difficult to detect underlying trends in our business and results of operations. In addition, to the extent that fluctuations in currency exchange rates cause our results of operations to differ from our expectations or the expectations of our investors, the trading price of our common stock or the price of the Exchangeable Notes or the 2021 Notes (each as defined below) could be adversely affected.

From time to time, we may engage in exchange rate hedging activities in an effort to mitigate the impact of exchange rate fluctuations. Our Korean subsidiary enters into foreign currency forward and zero cost collar contracts in order to mitigate a portion of the impact of US dollar-Korean won exchange rate fluctuations on our operating results. These foreign currency forward and zero cost collar contracts typically require us to sell specified notional amounts in US dollars and provide us the option to sell specified notional amounts in US dollars during successive months to our counterparty in exchange for Korean won at specified exchange rates. Obligations under these foreign currency forward and zero cost collar contracts must be cash collateralized if our exposure exceeds certain specified thresholds. These forward and zero cost collar contracts may be terminated by the counterparty in a number of circumstances, including if our long-term debt rating falls below B-/B3 or if our total cash and cash equivalents is less than $30 million at the end of a fiscal quarter. We cannot assure that any hedging technique we implement will be effective. If our hedging activities are not effective, changes in currency exchange rates may have a more significant impact on our results of operations. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations—Factors Affecting our Results of Operations” for further details.

***The loss of our key employees would materially adversely affect our business, and we may not be able to attract or retain the technical or management employees necessary to compete in our industry.***

Our key executives have substantial experience and have made significant contributions to our business, and our continued success is dependent upon the retention of our key management executives. The loss of such key personnel would have a material adverse effect on our business. In addition, our future success depends on our ability to attract and retain skilled technical and managerial personnel. We do not know whether we will be able to retain all of these employees as we continue to pursue our business strategy. The loss of the services of key employees, especially our key design and technical personnel, or our inability to retain, attract and motivate qualified design and technical personnel, could have a material adverse effect on our business, financial condition and results of operations. This could hinder our research and product development programs or otherwise have a material adverse effect on our business.

***If we encounter future labor problems, we may fail to deliver our products and services in a timely manner, which would adversely affect our revenues and profitability.***

As of December 31, 2019, 1, 449 employees, or approximately 59% of our employees, were represented by the MagnaChip Semiconductor Labor Union. We can offer no assurance that any issues with the labor union and other employees will be resolved favorably for us in the future, that we will not experience work stoppages or other labor problems in future years or that we will not incur significant expenses related to such issues.

***We may incur costs to engage in future business combinations or strategic investments, and we may not realize the anticipated benefits of those transactions.***

As part of our business strategy, we may seek to enter into business combinations, investments, joint ventures and other strategic alliances with other companies in order to maintain and grow revenue and market presence as well as to provide us with access to technology, products and services. Any such transaction would be accompanied by risks that may harm our business, such as difficulties in assimilating the operations, personnel and products of an acquired business or in realizing the projected benefits, disruption of our ongoing business, potential increases in our indebtedness and contingent liabilities and charges if the acquired company or assets are later determined to be worth less than the amount paid for them in an earlier original acquisition. In addition, our indebtedness may restrict us from making acquisitions that we may otherwise wish to pursue.

***The failure to achieve acceptable manufacturing yields could adversely affect our business.***

The manufacture of semiconductors involves highly complex processes that require precision, a highly regulated and sterile environment and specialized equipment. Defects or other difficulties in the manufacturing process can prevent us from achieving acceptable yields in the manufacturing of our products or those of our Foundry Services Group customers, which could lead to higher costs, a loss of customers or delay in market acceptance of our products. Slight impurities or defects in the photomasks used to print circuits on a wafer or other factors can cause significant difficulties, particularly in connection with the production of a new product, the adoption of a new manufacturing process or any expansion of our manufacturing capacity and related transitions. We may also experience manufacturing problems in achieving acceptable yields as a result of, among other things, transferring production to other facilities, upgrading or expanding existing facilities or changing our process technologies. Yields below our target levels can negatively impact our gross profit and may cause us to eliminate underperforming products.

***We rely on a number of independent subcontractors and the failure of any of these independent subcontractors to perform as required could adversely affect our operating results.***

A substantial portion of our net sales are derived from semiconductor devices assembled in packages or on film. The packaging and testing of semiconductors require technical skill and specialized equipment. For the portion of packaging and testing that we outsource, we use subcontractors located in Korea, China, and Taiwan; however, we expect that we will only use the Korean and Chinese subcontractors for 2020. We rely on these subcontractors to package and test our devices with acceptable quality and yield levels. We could be adversely affected by political disorders, labor disruptions, public health issues (including viral outbreaks such as the COVID-19 coronavirus), and natural disasters where our subcontractors are located. If our semiconductor packagers and test service providers experience problems in packaging and testing our semiconductor devices, experience prolonged quality or yield problems, experience shutdowns or delays associated with public health issues (such as those associated with the COVID-19 coronavirus), or decrease the capacity available to us, our operating results could be adversely affected.

***We cooperate with independent foundries to produce certain advanced technology Display Solutions products, and the failure of such independent foundries to satisfy our demand could materially disrupt our business.***

We use independent foundry services for certain of our OLED Display Solutions products that require more advanced technology than is available in our fabrication facilities. Silicon wafer production at these facilities is allocated solely by our vendors and beyond our direct control. Therefore, any disruption in wafer supply form these vendors could have a material impact on our revenue and results of operations.

***We depend on successful parts and materials procurement for our manufacturing processes, and a shortage or increase in the price of these materials could interrupt our operations and result in a decline of revenues and results of operations.***

We procure materials and electronic and mechanical components from international sources and original equipment manufacturers. We use a wide range of parts and materials in the production of our semiconductors, including silicon, processing chemicals, processing gases, precious metals and electronic and mechanical components, some of which, such as silicon wafers, are specialized raw materials that are generally only available from a limited number of suppliers. If demand increases or supply decreases for any reason, the costs of our raw materials could significantly increase. For example, worldwide supplies of silicon wafers, an important raw material for the semiconductors we manufacture, were constrained in recent years due to an increased demand for silicon. We from time to time may enter into multi-year agreements, which specify future quantities and pricing of materials to be supplied by the vendors of these materials; however, this option may not be available to us and we cannot assure that supply increases will match demand increases. If we cannot obtain adequate materials in a timely manner or on favorable terms for the manufacture of our products, revenues and results of operations will decline.

***Compliance with regulations regarding the use of "conflict minerals" could limit the supply and increase the cost of certain raw materials used in manufacturing our products.***

The SEC, as mandated by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, adopted disclosure regulations for public companies that manufacture products containing certain minerals that are mined from the Democratic Republic of Congo and adjoining countries and procedures pertaining to a manufacturer's efforts regarding the source of such minerals. These "conflict minerals" are commonly found in metals used in the manufacture of semiconductors. Manufacturers are also required to disclose their efforts to prevent the sourcing of such minerals and metals produced from them. The implementation of these requirements could adversely affect the sourcing, availability and pricing of metals used in the manufacture of our products. We may also incur additional costs to comply with the disclosure requirements, including costs related to determining the source of any of the relevant minerals used in our products. We may also face difficulties in satisfying customers who may require that our products be certified as free of "conflict materials," which could harm our relationships with these customers and lead to a loss of revenue.

***We face warranty claims, product return, litigation and liability risks and the risk of negative publicity if our products fail.***

Our semiconductors are incorporated into a number of end products, and our business is exposed to product return, warranty and product liability risk and the risk of negative publicity if our products fail. Although we maintain insurance for product liability claims, the amount and scope of our insurance may not be adequate to cover a product liability claim that is asserted against us. In addition, product liability insurance could become more expensive and difficult to maintain and, in the future, may not be available on commercially reasonable terms, or at all.

In addition, we are exposed to the product liability risk and the risk of negative publicity affecting our customers. Our sales may decline if any of our customers are sued on a product liability claim. We also may suffer a decline in sales from the negative publicity associated with such a lawsuit or with adverse public perceptions in general regarding our customers' products. Further, if our products are delivered with impurities or defects, we could incur additional development, repair or replacement costs, and our credibility and the market's acceptance of our products could be harmed.

***We could suffer adverse tax and other financial consequences as a result of changes in, or differences in the interpretation of, applicable tax laws, including the recently enacted tax reform legislation in the United States.***

Our company's organizational structure was created in part based on certain interpretations and conclusions regarding various tax laws, including withholding tax and other tax laws of applicable jurisdictions. Our interpretations and conclusions regarding tax laws, however, are not binding on any taxing authority and, if these interpretations and conclusions are incorrect, if our business were to be operated in a way that rendered us ineligible for tax exemptions or caused us to become subject to incremental tax, or if the authorities were to change, modify or have a different interpretation of the relevant tax laws, we could suffer adverse tax and other financial consequences, and the anticipated benefits of our organizational structure could be materially impaired. Our company's organizational structure and other tax positions are subject to review by tax authorities in the local and other jurisdictions where we operate our business.

In December 2017, H.R. 1, originally known as the Tax Cuts and Jobs Act, was enacted in the US (the "Tax Reform"). The Tax Reform reduces the US federal statutory rate to 21.0% from 35.0% effective January 1, 2018. The Tax Reform contains several key provisions that affect our assessment of deferred taxes, which include the remeasurement of deferred taxes, recognition of liabilities for taxes on mandatory deemed repatriation and certain other foreign income, and reassessment of the realizability of deferred tax assets. For further information regarding the impact of the Tax Reform, see "Item 8. Financial Statements and Supplementary Data—Notes to Consolidated Financial Statements—Note 17. Income Taxes" included elsewhere in this Report.

Additional changes in the U.S. tax regime or in how U.S. multinational corporations are taxed on foreign income, including changes in how existing tax laws are interpreted or enforced, could adversely affect our business, financial condition or results of operations. For example, the Organization for Economic Cooperation and Development (OECD) has recommended changes to numerous long-standing international tax principles through its base erosion and profit shifting (BEPS) project. These changes, to the extent adopted, may increase tax uncertainty, result in higher compliance costs and adversely affect our provision for income taxes, results of operations and/or cash flow.

We are also subject to regular reviews, examinations and audits by the IRS and other taxing authorities with respect to income and non-income based taxes both within and outside the U.S. In connection with the OECD's BEPS project, companies are required to disclose more information to tax authorities on operations around the world, which may lead to greater audit scrutiny of income earned in various countries. Economic and political pressures to increase tax revenues in jurisdictions in which we operate, or the adoption of new or reformed tax legislation or regulation, may make resolving tax disputes more difficult and the final resolution of tax audits and any related litigation could differ from our historical provisions and accruals, resulting in an adverse impact on our business, financial condition or results of operations.

***Recent changes in international trade policy and the imposition and threats of international tariffs, including tariffs applied to goods traded between the United States and China, could materially and adversely affect our business and results of operations.***

Since the beginning of 2018, there have been increasing public threats and, in some cases, legislative or executive action, from US and foreign leaders regarding instituting tariffs against foreign imports of certain materials. More specifically, since March of 2018, the US and China have applied tariffs to certain of each other's exports. The institution of trade tariffs globally, and between the US and China specifically, may negatively impacting China's overall economic condition, which could negatively affect demand for our products in China and materially and adversely affect our business and results of operations of our customers serving the China markets. Furthermore, imposition of tariffs could increase costs of the end-user products we supply or those manufactured by our Foundry Services Group that we may not be able to pass on to our customers, which could in turn cause a decrease in the sales of our products and services and materially and adversely affect our business and results of operations.

***Our ability to compete successfully and achieve future growth will depend, in part, on our ability to protect our intellectual property, proprietary technology and know-how, as well as our ability to operate without infringing the proprietary rights of others.***

We attempt to protect our intellectual property rights, both in the US and in foreign countries, through a combination of patent, trademark, copyright, mask works and trade secret laws, as well as licensing agreements and third-party nondisclosure and assignment agreements. Because of the differences in foreign trademark, patent and other laws concerning proprietary rights, our intellectual property rights may not receive the same degree of protection in foreign countries as they would in the US. In particular, the validity, enforceability and scope of protection of intellectual property in China, where we derive a significant portion of our net sales, and certain other countries where we derive net sales, are uncertain and still evolving and historically have not protected, and may not protect in the future, intellectual property rights to the same extent as do the laws and enforcement procedures in the US. Our failure to obtain or maintain adequate protection of our intellectual property rights for any reason could have a material adverse effect on our business, results of operations and financial condition.

We seek to protect our proprietary technologies and know-how through the use of patents, trade secrets, confidentiality agreements and other security measures. The process of seeking patent protection takes a long time and is expensive. There can be no assurance that patents will issue from pending or future applications or that, if patents issue, they will not be challenged, invalidated or circumvented, or that the rights granted under the patents will provide us with meaningful protection or any commercial advantage. Many of our patents are subject to cross licenses, several of which are with our competitors. Some of our technologies are not covered by any patent or patent application. The confidentiality agreements on which we rely to protect these technologies may be breached and may not be adequate to protect our proprietary technologies. Further, it is possible that others will independently develop the same or similar technologies, even without access to our proprietary technologies.

We rely on our trademarks, trade names, and brand names to distinguish our products from the products of our competitors, and have registered or applied to register many of these trademarks. We cannot assure you that our trademark applications will be approved. Third parties may also oppose our trademark applications, or otherwise challenge our use of the trademarks. In the event that our trademarks are successfully challenged, we could be forced to rebrand our products, which could result in loss of brand recognition, and could require us to devote resources advertising and marketing new brands. Further, we cannot assure you that competitors will not infringe our trademarks, or that we will have adequate resources to enforce our trademarks.

Our ability to compete successfully depends on our ability to operate without infringing the proprietary rights of others. We have no means of knowing what patent applications have been filed until they are published. In addition, the semiconductor industry is characterized by frequent litigation regarding patent and other intellectual property rights. We may need to file lawsuits to enforce our patents or intellectual property rights, and we may need to defend against claimed infringement of the rights of others. Any litigation could result in substantial costs to us and divert our resources, and we cannot assure you that we will prevail. Any claims of intellectual property infringement or misappropriation against use, even those without merit, could require us to:

- pay substantial damages or indemnify customers or licensees for damages they may suffer if the products they purchase from us or the technology they license from us violate the intellectual property rights of others;
- stop our manufacture, use, sale or importation of the accused products;
- redesign, reengineer or rebrand our products, if feasible;
- expend significant resources to develop or acquire non-infringing technologies;
- discontinue processes; or
- obtain licenses to a third party’s intellectual property.

There can be no assurance that we would be successful in such development or acquisition or that such licenses would be available under reasonable terms, or at all.

We license certain intellectual property from third parties. The termination of key third-party licenses relating to the use of intellectual property in our products and our design processes, such as our agreements with Silicon Works Co., Ltd. and ARM Limited, would materially and adversely affect our business.

***Our expenses could increase if SK hynix were unwilling or unable to provide certain services related to our shared facilities with SK hynix, and if SK hynix were to become insolvent, we could lose certain of our leases.***

We are party to a land lease and easement agreement with SK hynix pursuant to which we lease the land for our facilities in Cheongju, Korea. If this agreement were terminated for any reason, including the insolvency of SK hynix, we would have to renegotiate new lease terms with SK hynix or the new owner of the land. We cannot assure that we will be able to negotiate new lease terms on favorable terms or at all. Because we share certain facilities with SK hynix, several services that are essential to our business are provided to us by or through SK hynix under our general service supply agreement with SK hynix. These services include electricity, bulk gases and de-ionized water, campus facilities and housing, wastewater and sewage management, environmental safety and certain utilities and infrastructure support services. If any of our agreements with SK hynix were terminated or if SK hynix were unwilling or unable to fulfill its obligations to us under the terms of these agreements, we would have to procure these services on our own and as a result may experience an increase in our expenses.

***We are subject to many environmental laws and regulations that could affect our operations or result in significant expenses.***

We are subject to a variety of environmental, health and safety laws and regulations in each of the jurisdictions in which we operate, governing, among other things, air emissions, wastewater discharges, the generation, use, handling, storage and disposal of, and exposure to, hazardous substances (including asbestos) and wastes, soil and groundwater contamination and employee health and safety. These laws and regulations are complex, change frequently and have tended to become more stringent over time. Among them is the Act on Remediation and Compensation for Damages arising from Environmental Contamination which came into effect in Korea on January 1, 2016 and provides for strict liability of business entities in violation of the act and alleviates the burden of proof for the damaged party. Further, under the amendment to the Act on the Control and Aggravated Punishment of Environmental Offenses that becomes effective on November 27, 2020, certain environmental offenses such as illegally emitting specified hazardous air pollutants or emitting air pollutants without necessary permits will be subject to penalties of up to 5% of the sales amount generated from the relevant business. As a result, we have increased potential exposure to liability for environmental contaminations that might have existed in the past or would arise in the future. There can be no assurance that we have been, or will be, in compliance with all such laws and regulations or that we will not incur material costs or liabilities in connection with these laws and regulations in the future. The adoption of new environmental, health and safety laws, the failure to comply with new or existing laws, or issues relating to hazardous substances could subject us to material liability (including substantial fines or penalties), impose the need for additional capital equipment or other process requirements upon us, curtail our operations or restrict our ability to expand operations.

***Our Korean subsidiary has been designated as a regulated business under Korean environmental law, and such designation could have an adverse effect on our financial position and results of operations.***

Since 2015, our Korean subsidiary has been subject to K-ETS, a new set of greenhouse gas emissions regulation, under the Act on Allocation and Trading of Greenhouse Gas Emission Allowances. Under K-ETS, our Korean subsidiary was allocated a certain amount of emissions allowance in accordance with the National Allocation Plan prepared by the Korean government, and is required to meet its allocated target by either reducing the emissions or purchasing the allowances from other participants or the government in the emission trading market. Reduction of our emissions or energy consumption may result in additional and potentially costly compliance or remediation expenses, including potentially the installation of equipment and changes in the type of materials we use in manufacturing, as well as cost of procuring emission allowances to cover the excess emissions, which could adversely affect our financial position and results of operations. During the first implementation period from 2015 to 2017, we did not exceed the allocated emission amount. We are in the second implementation period that covers from 2018 to 2020. We will continue to monitor our compliance with the emissions allowance for the referred 3-year period on a cumulative basis as well as for an individual year basis. As of December 31, 2019, we had a sufficient emissions allowance and, accordingly, no liability was recorded. In addition, from time to time, if we assess that we have excess allowances, we may sell such excess allowances to manufacturers in the emission market in Korea. However, it is expected that the total emission allowances to be allocated by the government will be significantly reduced in the third implementation period from 2021 to 2025 to achieve the 2030 National GHG Reduction Goal. Further, as the number of businesses subject to paid allocation of GHG emission allowances will increase, and the proportion of the paid allocation for each subject business will increase from 3% to 10% or more in the third implementation period, the subject businesses' costs to comply with the GHG emission limit is expected to significantly increase.

***We may need additional capital in the future, and such capital may not be available on acceptable terms or at all, which would have a material adverse effect on our business, financial condition and results of operations.***

We may require more capital in the future from equity or debt financings to fund operating expenses, such as research and development costs, finance investments in equipment and infrastructure, acquire complementary businesses and technologies, and respond to competitive pressures and potential strategic opportunities. If we raise additional funds through further issuances of equity or other securities convertible into equity, our existing stockholders could suffer significant dilution, and any new shares we issue could have rights, preferences or privileges senior to those of the holders of our common stock. There can be no assurance that any additional equity or debt financing would be available to us, or if available, that such financing would be on favorable terms to us. Accordingly, if we are unable to obtain additional capital or our business does not generate sufficient cash flows from operating activities to fund our working capital needs and planned capital expenditures, and our cash reserves are depleted, we may need to take various actions, such as down-sizing and/or eliminating certain operations, which could include additional exit costs, reducing or delaying capital expenditures, selling assets, or other restructuring actions. There can be no assurance that we would be successful in taking such actions and, in any event, such actions may result in a material adverse effect on our business and results of operations. In addition, our indebtedness limits our ability to incur additional indebtedness under certain circumstances.

***Our business depends on international customers, suppliers and operations in Asia, and as a result we are subject to regulatory, operational, financial and political risks, which could adversely affect our financial results.***

We rely on, and expect to continue to rely on, suppliers, subcontractors and operations located primarily in Asia. As a result, we face risks inherent in international operations, such as unexpected changes in regulatory requirements, tariffs and other market barriers, political, social and economic instability, adverse tax consequences, war, civil disturbances and acts of terrorism, public health issues (including viral outbreaks such as the COVID-19 coronavirus), difficulties in accounts receivable collection, extended payment terms and differing labor standards, enforcement of contractual obligations and protection of intellectual property. These risks may lead to increased costs or decreased revenue growth, or both.

For example, in December 2019, a strain of coronavirus causing a disease known as COVID-19 surfaced in Wuhan, China, resulting in significant disruptions among Chinese manufacturing and other facilities and travel throughout China. While the extent of the impact of the current COVID-19 coronavirus outbreak on our results is uncertain, a continued and prolonged public health crisis such as the COVID-19 coronavirus could have a negative impact on our business, financial condition and operating results.

***Tensions with North Korea could have an adverse effect on us and the market value of our shares.***

Relations between South Korea and North Korea have been tense throughout Korea's modern history. The level of tension between the two Koreas has fluctuated and may increase abruptly as a result of current and future events. In particular, in recent years, there have been heightened security concerns stemming from North Korea's nuclear weapon and long-range missile programs and increased uncertainty regarding North Korea's actions and possible responses from the international community.

North Korea's economy also faces severe challenges, and any adverse economic developments may further aggravate social and political tensions within North Korea.

Although we do not derive any revenue from, nor sell any products in, North Korea, any future increase in tensions between South Korea and North Korea that may occur, for example, if North Korea experiences a leadership crisis, high-level contacts between South Korea and North Korea break down, or military hostilities occur, could have a material adverse effect on the South Korean economy and on our business, financial condition, results of operations and the market value of our common stock.

***We may be subject to disruptions, breaches or cyber-attacks of our secured networks and information technology systems that could damage our reputation, harm our business, expose us to liability and materially adversely affect our results of operations.***

In the ordinary course of our business, we collect and store sensitive data, including IP and other proprietary information about our business and that of our customers, suppliers and business partners. Secure maintenance, processing and transmission of this information is critical to our operations and business strategy. We may be subject to disruptions, breaches or cyber-attacks of our secured networks and information technology systems caused by illegal hacking, criminal fraud or impersonation, computer viruses, acts of vandalism or terrorism or employee error, and our security measures or those of any third party service providers we use may not detect or prevent such security breaches. We may incur significant costs to eliminate or alleviate cybersecurity breaches and vulnerabilities, which could be significant, and our efforts to protect against such breaches or vulnerabilities may not be successful and could result in system interruptions that may materially impede our sales, manufacturing, distribution, finance or other critical functions. Any such compromise of our information security could also result in the unauthorized publication of our confidential business or proprietary information or that of other parties with which we do business, an interruption in our operations, the unauthorized transfer of cash or other assets, the unauthorized release of customer or employee data or a violation of privacy or other laws in the jurisdictions in which we operate. Any of the foregoing could irreparably damage our reputation and business and/or expose us to material monetary liability, which could have a material adverse effect on our results of operations.

***You may not be able to bring an action or enforce any judgment obtained in United States courts, or bring an action in any other jurisdiction, against us or our subsidiaries or our directors, officers or independent auditors that are organized or residing in jurisdictions other than the United States.***

Most of our subsidiaries are organized or incorporated outside of the US and some of our directors and executive officers as well as our independent auditors are organized or reside outside of the US. Most of our and our subsidiaries' assets are located outside of the US and in particular, in Korea. Accordingly, any judgment obtained in the US against us or our subsidiaries may not be collectible in the US. As a result, it may not be possible for you to effect service of process within the US upon these persons or to enforce against them or us court judgments obtained in the US that are predicated upon the civil liability provisions of the federal securities laws of the US or of the securities laws of any state of the US. In particular, there is doubt as to the enforceability in Korea or any other jurisdictions outside the US, either in original actions or in actions for enforcement of judgments of US courts, of civil liabilities predicated on the federal securities laws of the US or the securities laws of any state of the US.

***Our level of indebtedness is substantial, and we may not be able to generate sufficient cash to service all of our indebtedness and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful. A decline in the ratings of our existing or future indebtedness may make the terms of any new indebtedness we choose to incur more costly.***

As of December 31, 2019, our total indebtedness was $304.7 million, which represents the principal amount outstanding under our 6.625% Senior Notes due 2021 (“2021 Notes”) and 5.0% Exchangeable Senior Notes due 2021 (“Exchangeable Notes”), excluding $3.2 million of unamortized discount and debt issuance costs. We are permitted under the indentures governing our outstanding Exchangeable Notes and 2021 Notes to incur additional debt under certain conditions, including additional secured debt. If new debt were to be incurred in the future, the related risks that we now face could intensify. Our substantial debt could have important consequences, including:

- resulting in an event of default if we fail to satisfy our obligations under our outstanding debt or fail to comply with the financial or other restrictive covenants contained in the indentures governing our outstanding Exchangeable Notes and 2021 Notes or agreements governing our other indebtedness, which event of default could result in all of our debt becoming immediately due and payable and could permit our lenders to foreclose on the assets securing any such debt;
- increasing our vulnerability to general economic and industry conditions;
- requiring a substantial portion of our cash flow from operations to be dedicated to the payment of principal and interest on our indebtedness, therefore reducing our ability to use our cash flow to fund our operations, capital expenditures and future business opportunities;
- limiting our ability to obtain additional financing for working capital, capital expenditures, debt service requirements, acquisitions and general corporate or other purposes;
- limiting our ability to adjust to changing market conditions and placing us at a competitive disadvantage compared to our competitors who have less debt; and
- negatively affecting our ability to fund a change of control offer.

Our ability to make scheduled payments on or to refinance our debt obligations depends on our financial condition and operating performance, which is subject to prevailing economic and competitive conditions and to certain financial, business and other factors beyond our control. We cannot assure that we will generate a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness.

The credit ratings assigned to our debt reflect each rating agency’s opinion of our ability to make payments on the debt obligations when such payments are due. A rating may be subject to revision or withdrawal at any time by the assigning rating agency. We may experience downgrades in our debt ratings in the future. Any lowering of our debt ratings would adversely impact our ability to raise additional debt financing and increase the cost of any such financing that is obtained. In the event any ratings downgrades are significant, we may choose not to incur new debt or refinance existing debt if we are unable to incur or refinance such debt at favorable interest rates or on favorable terms.

If our cash flows and capital resources are insufficient to fund our debt service obligations or if we are unable to refinance existing indebtedness on favorable terms, we may be forced to reduce or delay capital expenditures, sell assets, seek additional capital or restructure or refinance our indebtedness. These alternative measures may not be successful and thus render us unable to meet our scheduled debt service obligations. In the absence of such operating results and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. The indentures governing our outstanding Exchangeable Notes and 2021 Notes restrict our ability to dispose of assets and use the proceeds from the disposition. We may not be able to consummate those dispositions or be able to obtain the proceeds which we could realize from them and these proceeds may not be adequate to meet any debt service obligations then due.

***We are a holding company and will depend on the business of our subsidiaries to satisfy our obligations under our outstanding Exchangeable Notes and 2021 Notes and other obligations.***

We are a holding company with no independent operations of our own. Our subsidiaries conduct substantially all of the operations necessary to fund payments on our outstanding Exchangeable Notes and 2021 Notes, other debt and any other obligations. Our ability to make payments on our outstanding Exchangeable Notes and 2021 Notes and our other obligations will depend on our subsidiaries' cash flow and their payment of funds to us. Our subsidiaries' ability to make payments to us will depend on:

- their earnings;
- covenants contained in our debt agreements (including the indentures governing our outstanding Exchangeable Notes and 2021 Notes) and the debt agreements of our subsidiaries;
- covenants contained in other agreements to which we or our subsidiaries are or may become subject;
- business and tax considerations; and
- applicable law, including any restrictions under Korean law that may be imposed on MagnaChip Korea that would restrict its ability to make payments on intercompany loans from MagnaChip Semiconductor B.V.

We cannot assure that the operating results of our subsidiaries at any given time will be sufficient to make distributions or other payments to us or that any distributions or payments will be adequate to pay principal and interest, and any other payments, on our outstanding Exchangeable Notes and 2021 Notes, other debt or any other obligations when due, and the failure to make such payments could have a material adverse effect on our business, financial condition and results of operations.

***Restrictions on MagnaChip Korea's ability to make payments on its intercompany loans from MagnaChip Semiconductor B.V., or on its ability to pay dividends in excess of statutory limitations, could hinder our ability to make payments on our outstanding Exchangeable Notes and 2021 Notes.***

We anticipate that payments under our outstanding Exchangeable Notes and 2021 Notes will be funded in part by MagnaChip Korea's repayment of its existing loans from MagnaChip Semiconductor B.V., with MagnaChip Semiconductor B.V. using such repayments in turn to repay the loans owed to us or to MagnaChip Semiconductor S.A., which will repay loans owed to us. Under the Korean Foreign Exchange Transaction Act, the minister of the Ministry of Strategy and Finance is authorized to temporarily suspend payments in foreign currencies in the event of natural calamities, wars, conflicts of arms, grave and sudden changes in domestic or foreign economic conditions, or other similar situations. In addition, under the Korean Commercial Code, a Korean company is permitted to make a dividend payment in accordance with the provisions in its articles of incorporation out of retained earnings (as determined in accordance with the Korean Commercial Code and the generally accepted accounting principles in Korea), but no more than twice a year. If MagnaChip Korea is prevented from making payments under its intercompany loans due to restrictions on payments of foreign currency or if it has an insufficient amount of retained earnings under the Korean Commercial Code to make dividend payments to MagnaChip Semiconductor B.V., we and MagnaChip Semiconductor S.A. may not have sufficient funds to make payments on our outstanding Exchangeable Notes and 2021 Notes.

***The indentures governing our outstanding Exchangeable Notes and 2021 Notes contain, and our future debt agreements will likely contain, covenants that significantly restrict our operations.***

The indentures governing our outstanding Exchangeable Notes and 2021 Notes contain, and our future debt agreements will likely contain, numerous covenants imposing financial and operating restrictions on our business. These restrictions may affect our ability to operate our business, may limit our ability to take advantage of potential business opportunities as they arise and may adversely affect the conduct of our current business, including by restricting our ability to finance future operations and capital needs and by limiting our ability to engage in other business activities. These covenants will place restrictions on our ability and the ability of our operating subsidiaries to, among other things:

- pay dividends, redeem shares or make other distributions with respect to equity interests, make payments with respect to subordinated indebtedness or other restricted payments;
- incur debt or issue preferred stock;
- create liens;
- make certain investments;
- consolidate, merge or dispose of all or substantially all of our assets, taken as a whole;
- sell or otherwise transfer or dispose of assets, including equity interests of our subsidiaries;
- enter into sale-leaseback transactions;
- enter into transactions with our affiliates; and
- designate our subsidiaries as unrestricted subsidiaries.

In addition, our future debt agreements will likely contain financial ratios and other financial conditions tests. Our ability to meet those financial ratios and tests could be affected by events beyond our control, and we cannot assure that we will meet those ratios and tests. A breach of any of these covenants could result in a default under such debt agreements. Upon the occurrence of an event of default under such debt agreements, our lenders under such agreements could elect to declare all amounts outstanding under such debt agreements to be immediately due and payable and terminate all commitments to extend further credit.

***We may not have the ability to raise the funds necessary to repurchase the Exchangeable Notes upon a fundamental change, and our future debt may contain limitations on our ability to repurchase the Exchangeable Notes.***

Holders of the Exchangeable Notes have the right to require us to repurchase their notes upon the occurrence of a fundamental change at a fundamental change repurchase price equal to 100% of the principal amount of the Exchangeable Notes to be repurchased, plus accrued and unpaid interest, if any. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of Exchangeable Notes surrendered therefor. In addition, our ability to repurchase the Exchangeable Notes may be limited by law, by regulatory authority or by agreements governing our future indebtedness. Our failure to repurchase Exchangeable Notes at a time when the repurchase is required by the indenture would constitute a default under the indenture. A default under the indenture or the fundamental change itself could also lead to a default under agreements governing our future indebtedness. If the repayment of our then-existing indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Exchangeable Notes.

***A fundamental change may adversely affect us.***

A fundamental change could have a negative effect on us and the trading price of the common stock and Exchangeable Notes. Furthermore, the fundamental change provisions, including the provisions requiring the increase in the exchange rate for exchanges in connection with a fundamental change prior to the maturity date, may in certain circumstances make it more difficult or discourage a takeover of our company and the removal of incumbent management.

***Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.***

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

***We have a history of losses and may not achieve or sustain profitability in the future.***

From the time we began operations as a separate entity in 2004 until we emerged from our 2009 reorganization proceedings under Chapter 11 of the US Bankruptcy Code, we generated significant net losses and did not generate a profit for a full fiscal year. In addition, since 2013 until 2017, we again had substantial net losses despite some improvements made in 2017. While our operating income was $47.4 million and $24.4 million in 2018 and 2019, respectively, our net loss was $3.9 million and $21.8 million in those same periods. We may increase spending to support increased research and development and sales and marketing efforts. These expenditures may not result in increased revenue or an increase in the number of customers immediately or at all. Because many of our expenses are fixed in the short term, or are incurred in advance of anticipated sales, we may not be able to decrease our expenses in a timely manner to offset any shortfall of sales. If we cannot maintain profitability, the value of the enterprise may decline.

***Despite our current debt levels, we may still incur substantially more debt or take other actions which would intensify the risks discussed above.***

Despite our current consolidated debt levels, we and our subsidiaries may be able to incur substantial additional debt in the future, some of which may be secured debt, subject to the restrictions contained in our debt instruments. We will not be restricted under the terms of the indenture governing the notes from incurring additional debt, securing existing or future debt, recapitalizing our debt or taking a number of other actions that are not limited by the terms of the indenture governing the notes that could have the effect of diminishing our ability to make payments on the notes when due.

***We may need to incur impairment, restructuring and other restructuring related charges, which could materially affect our results of operations and financial condition.***

During industry downturns and for other reasons, we may need to record impairment, restructuring or other restructuring related charges. Although we recognized a net restructuring and other gain of $17.0 million for the year ended December 31, 2017, we also recorded early termination charges of $13.4 million for the same period in connection with our workforce reduction efforts. For the year ended December 31, 2019, we recognized aggregate restructuring and other charges of $9.2 million, of which $7.0 million in professional fees and other charges incurred in connection with the strategic evaluation. In the future, we may need to record additional impairment charges or to further restructure our business or incur additional restructuring charges, any of which could have a material adverse effect on our results of operations or financial condition.

***We are subject to litigation risks, which may be costly to defend and the outcome of which is uncertain.***

All industries, including the semiconductor industry, are subject to legal claims, with and without merit, that may be particularly costly and which may divert the attention of our management and our resources in general. We are involved in a variety of legal matters, most of which we consider routine matters that arise in the normal course of business. These routine matters typically fall into broad categories such as those involving customers, employment and labor and intellectual property. Even if the final outcome of these legal claims does not have a material adverse effect on our financial position, results of operations or cash flows, defense and settlement costs can be substantial. Due to the inherent uncertainty of the litigation process, the resolution of any particular legal claim or proceeding could have a material effect on our business, financial condition, results of operations or cash flows.

***The price of our common stock may be volatile and you may lose all or a part of your investment.***

The trading price of our common stock might be subject to wide fluctuations. Factors, some of which are beyond our control, that could affect the trading price of our common stock may include:

- actual or anticipated variations in our results of operations from quarter to quarter or year to year;
- announcements by us or our competitors of significant agreements, technological innovations or strategic alliances;
- changes in recommendations or estimates by any securities analysts who follow our securities;
- addition or loss of significant customers;
- recruitment or departure of key personnel;
- changes in economic performance or market valuations of competing companies in our industry;
- price and volume fluctuations in the overall stock market;
- market conditions in our industry, end markets and the economy as a whole;
- subsequent sales of stock and other financings; and
- litigation, legislation, regulation or technological developments that adversely affect our business.

In the past, following periods of volatility in the market price of a public company's securities, securities class action litigation often has been instituted against the public company. Regardless of its outcome, this type of litigation could result in substantial costs to us and a likely diversion of our management's attention. You may not receive a positive return on your investment when you sell your shares, and you could lose some or the entire amount of your investment.

***Significant ownership of our common stock by certain stockholders could adversely affect our other stockholders.***

The concentration of ownership of our common stock by certain stockholders may limit the ability of other stockholders to influence corporate matters and, as a result, we may take actions that our public stockholders do not view as beneficial. For example, our concentration of ownership could have the effect of delaying or preventing a change in control or otherwise discouraging a potential acquirer from attempting to obtain control of us, which in turn could cause the market price of our common stock to decline or prevent our stockholders from realizing a premium over the market price for their shares of our common stock.

Under our certificate of incorporation, our non-employee directors and non-employee holders of five percent or more of our outstanding common stock do not have a duty to refrain from engaging in a corporate opportunity in the same or similar activities or lines of business as those engaged in by us, our subsidiaries and other related parties. Also, we have renounced any interest or expectancy in such business opportunities even if the opportunity is one that we might reasonably have pursued or had the ability or desire to pursue if granted an opportunity to do so.

***Provisions in our charter documents and Delaware Law may make it difficult for a third party to acquire us and could depress the price of our common stock.***

Provisions in our certificate of incorporation and bylaws may have the effect of delaying or preventing a change of control or changes in our management. Among other things, our certificate of incorporation and bylaws:

- authorize our Board of Directors to issue, without stockholder approval, preferred stock with such terms as the Board of Directors may determine;

- prohibit action by written consent of our stockholders;
- prohibit any person other than our Board of Directors, the chairman of our Board of Directors, our Chief Executive Officer or holders of at least 25% of the voting power of all then outstanding shares of capital stock of the corporation entitled to vote generally in the election of directors to call a special meeting of our stockholders; and
- specify advance notice requirements for stockholder proposals and director nominations.

In addition, we are subject to the provisions of Section 203 of the Delaware General Corporation Law (the "DGCL"), regulating corporate takeovers and which has an anti-takeover effect with respect to transactions not approved in advance by our Board of Directors, including discouraging takeover attempts that might result in a premium over the market price for shares of our common stock. In general, those provisions prohibit a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder, unless:

- the transaction is approved by the board of directors before the date the interested stockholder attained that status;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or
- on or after such date, the business combination is approved by the board of directors and authorized at a meeting of stockholders, and not by written consent, by at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

In general, DGCL Section 203 defines a business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, DGCL Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by any such entity or person.

A Delaware corporation may opt out of this provision by express provision in its original certificate of incorporation or by amendment to its certificate of incorporation or bylaws approved by its stockholders. However, we have not opted out of, and do not currently intend to opt out of, this provision.

***We do not intend to pay dividends for the foreseeable future, and therefore, investors should rely on sales of their common stock as the only way to realize any future gains on their investments.***

We do not intend to pay any cash dividends in the foreseeable future. The payment of cash dividends on common stock is restricted under the terms of the indentures for our outstanding Exchangeable Notes and 2021 Notes. Any determination to pay dividends in the future will be at the discretion of our Board of Directors. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

### Item 1B. Unresolved Staff Comments

Not applicable.

### Item 2. Properties

Our manufacturing operations consist of two fabrication facilities located in Korea in Cheongju and Gumi. Our facilities have a combined capacity of approximately 113,000 eight-inch equivalent wafers per month. We manufacture wafers utilizing geometries ranging from 0.11 to 0.50 microns. The Cheongju facilities have two main buildings totaling 121,672 square meters devoted to manufacturing and development. The Gumi facility has one main building with 41,022 square meters devoted to manufacturing, testing and packaging.

In addition to our fabrication facilities, we lease facilities in Seoul, Korea, and San Jose, California. Each of these facilities includes administration, sales and marketing and research and development functions. We lease sales and marketing offices through our subsidiaries in several other countries.

The ownership of our wafer manufacturing assets is an important component of our business strategy. Maintaining manufacturing control enables us to develop proprietary, differentiated products and results in higher production yields, as well as shortened design and production cycles. We believe our facilities are suitable and adequate for the conduct of our business for the foreseeable future and that we have sufficient production capacity to service our business as currently contemplated without significant capital investment.

A substantial majority of our assembly, test and packaging services for our Display Solutions business and all of such services for our Power Solutions business are outsourced with the balance handled in-house. Our independent providers of these services are located in Korea, China, and Taiwan; however, we expect that our independent providers will only be in Korea and China commencing in 2020. The relative cost of outsourced services, as compared to in-house services, depends upon many factors specific to each product and circumstance. However, we generally incur higher costs for outsourced services, which can result in lower margins.

Although we own our manufacturing facilities, we are party to a land lease and easement agreement with SK hynix pursuant to which we lease the land for our facilities in Cheongju, Korea from SK hynix for an indefinite term. Because we share certain facilities with SK hynix, several services that are essential to our business are provided to us by or through SK hynix under our general service supply agreement with SK hynix. These services include electricity, bulk gases and de-ionized water, campus facilities and housing, wastewater and sewage management, environmental safety and certain utilities and infrastructure support services. The services agreement continues for an indefinite term subject to each party having a right to terminate in the event of an uncured breach by the other party.

### Item 3. Legal Proceedings

We are involved in a variety of legal matters, most of which we consider routine matters that arise in the normal course of business. These routine matters typically fall into broad categories such as those involving customers, employment and labor and intellectual property. Intellectual property litigation and infringement claims, in particular, could cause us to incur significant expenses or prevent us from selling our products. We are currently not involved in any legal proceedings that we believe would have a material adverse effect on our business, financial condition or results of operations.

See also “Item 1A. Risk Factors” and “Item 8. Financial Statements and Supplementary Data—Notes to Consolidated Financial Statements—Note 19” in this Report for additional information.

### 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 Information

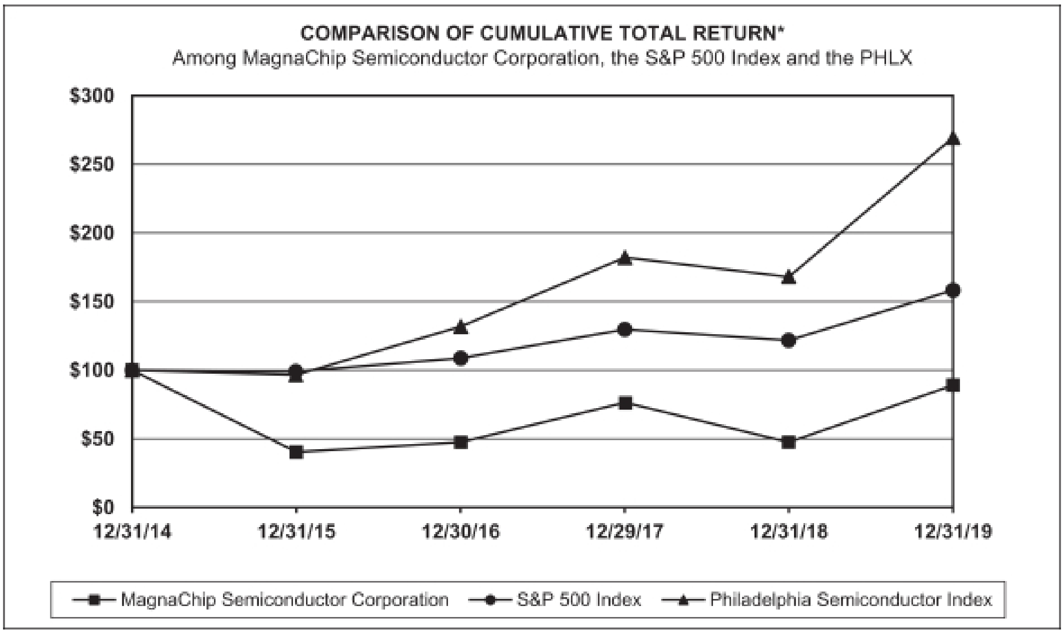
Our common stock is listed on the New York Stock Exchange under the symbol "MX."

### Stock Performance Graph

The graph and table below compare the cumulative total stockholder return of our common shares with the cumulative total return of the S&P 500 Index and the Philadelphia Semiconductor Index (PHLX) from December 31, 2014 (the last trading day before the beginning of our fifth preceding fiscal year) through December 31, 2019. The graph assumes that $100 was invested on December 31, 2014 in our common shares and in each index and that any dividends were reinvested. No cash dividends have been declared on our common shares during the five-year period ended December 31, 2019.

**Comparison of Cumulative Total Return***

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




* The stock performance included in this graph is not necessarily indicative of future stock performance.

### Total Return to Stockholders (Including Reinvestment of Dividends)

### Indexed Returns

| Company/Index | Base Period 12/31/2014 | 12/31/2015 | 12/30/2016 | 12/29/2017 | 12/31/2018 | 12/31/2019 |
|---|---|---|---|---|---|---|
| **MagnaChip Semiconductor Corporation** | 100 | 40.72 | 47.73 | 76.60 | 47.81 | 89.38 |
| **S&P 500 Index** | 100 | 99.27 | 108.74 | 129.86 | 121.76 | 158.23 |
| **Philadelphia Semiconductor Index** | 100 | 96.59 | 131.97 | 182.43 | 168.18 | 269.28 |

### Holders

The approximate number of record holders of our outstanding common stock as of February 14, 2020 was 70. This number does not include beneficial owners for whom shares are held by nominees in street name.

### Dividends

We do not intend to pay any cash dividends on our common stock in the foreseeable future. We anticipate that we will retain all of our future earnings for use in the development of our business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our Board of Directors.

### Issuer Purchases of Equity Securities

None.

### Item 6. Selected Financial Data

The following tables set forth selected historical consolidated financial data of MagnaChip Semiconductor Corporation on or as of the dates and for the periods indicated. The selected historical consolidated financial data presented below should be read together with “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements contained in “Item 8. Financial Statements and Supplementary Data,” including the notes to those consolidated financial statements, appearing elsewhere in this Report.

We have derived the selected consolidated financial data as of December 31, 2019 and 2018 and for the years ended December 31, 2019, 2018 and 2017 from the consolidated financial statements of the Company included in this Report. We have derived the selected consolidated financial data as of December 31, 2017, 2016 and 2015 and for the years ended December 31, 2016 and 2015 from the historical consolidated financial statements of MagnaChip Semiconductor Corporation not included in this Report. The historical financial data of MagnaChip Semiconductor Corporation for any period are not necessarily indicative of the results to be expected in any future period.

| | Year Ended December 31, 2019 | Year Ended December 31, 2018(1) | Year Ended December 31, 2017(1) | Year Ended December 31, 2016(1)(2) | Year Ended December 31, 2015(1) |
|---|---|---|---|---|---|
| | (In millions, except per share data) | | | | |
| **Statements of Operations Data:** | | | | | |
| Net sales | $ 792.2 | $ 750.9 | $ 679.7 | $ 688.0 | $ 633.7 |
| Cost of sales | 611.6 | 552.8 | 491.8 | 531.7 | 498.8 |
| Gross profit | 180.6 | 198.1 | 187.9 | 156.2 | 134.9 |
| Selling, general and administrative expenses | 71.6 | 72.6 | 81.8 | 83.5 | 94.4 |
| Research and development expenses | 75.4 | 78.0 | 70.5 | 72.2 | 83.4 |
| Restructuring and other charges (gains), net | 9.2 | — | (17.0) | (6.5) | — |
| Early termination charges | — | — | 13.4 | 4.2 | — |
| Operating income (loss) from continuing operations | 24.4 | 47.4 | 39.2 | 2.7 | (42.9) |
| Interest expense | (22.6) | (22.3) | (21.6) | (16.2) | (16.3) |
| Foreign currency gain (loss), net | (21.8) | (24.4) | 65.5 | (15.4) | (42.5) |
| Loss on early extinguishment of long-term borrowings, net | (0.0) | (0.2) | — | — | — |
| Others, net | 3.0 | 0.3 | 2.9 | 3.0 | 1.8 |
| | (41.5) | (46.7) | 46.9 | (28.6) | (57.0) |
| Income (loss) from operations before income tax expense | (17.1) | 0.7 | 86.1 | (25.9) | (100.0) |
| Income tax expense (benefit) | 4.7 | 4.6 | 1.2 | 3.7 | (15.1) |
| Net income (loss) | $ (21.8) | $ (3.9) | $ 84.9 | $ (29.6) | $ (84.9) |
| Per share data: | | | | | |
| Earnings (loss) per share | | | | | |
| Basic | $ (0.64) | $ (0.11) | $ 2.50 | $ (0.85) | $ (2.47) |
| Diluted | $ (0.64) | $ (0.11) | $ 2.02 | $ (0.85) | $ (2.47) |
| Weighted average number of shares | | | | | |
| Basic | 34.322 | 34.470 | 33.943 | 34.834 | 34.381 |
| Diluted | 34.322 | 34.470 | 44.755 | 34.834 | 34.381 |

| | Year Ended December 31, 2019 | Year Ended December 31, 2018(1) | Year Ended December 31, 2017(1) | Year Ended December 31, 2016(1)(2) | Year Ended December 31, 2015(1) |
|---|---|---|---|---|---|
| | (In millions, except per share data) | | | | |
| **Balance Sheet Data (at period end):** | | | | | |
| Cash and cash equivalents | $ 151.7 | $ 132.4 | $ 128.6 | $ 83.4 | $ 90.9 |
| Total assets(3)(4) | 595.3 | 583.2 | 558.8 | 442.0 | 474.1 |
| Total indebtedness(3)(5) | 304.7 | 303.6 | 303.4 | 221.1 | 220.4 |
| Stockholders' deficit | (15.0) | (17.3) | (39.6) | (72.1) | (62.3) |
| **Supplemental Data:** | | | | | |
| Adjusted EBITDA(6) | $ 74.5 | $ 84.3 | $ 78.7 | $ 40.7 | $ 0.8 |
| Adjusted Net Income (Loss)(7) | $ 17.1 | $ 27.1 | $ 28.9 | $ (4.5) | $ (26.7) |

(1) The Financial Accounting Standards Board ("FASB") issued the new revenue recognition standard through several Accounting Standards Updates that superseded the legacy revenue recognition requirements. The new revenue recognition standard became effective on January 1, 2018. As we adopted the new revenue standard using the modified retrospective method, which allowed the recognition of the cumulative effect of initially applying the new revenue standard as an adjustment to our equity as of January 1, 2018, the comparative prior period amounts were not restated and continued to be reported under the accounting standards in effect for such periods. For further description of the adoption of the new revenue standard, see "Item 8. Financial Statements and Supplementary Data—Notes to Consolidated Financial Statements—Note 1—Business, Basis of Presentation and Summary of Significant Accounting Policies—Recently Adopted Accounting Pronouncements" in this Report.

(2) Certain charges related to the closure of our 6-inch fab and headcount reduction, previously included in selling, general and administrative expenses in the consolidated statements of operations for the year ended December 31, 2016, have been reclassified to restructuring, impairment and other charges (gain), net and early termination charges, respectively, to conform to the presentation for the year ended December 31, 2017.

(3) In April 2015, the FASB issued Accounting Standards Update No. 2015-03, "Interest—Imputation of Interest"("ASU 2015-03"), which requires that debt issuance costs are presented in the balance sheet as a direct deduction from the carrying amount of debt liability, consistent with debt discounts or premiums. We adopted ASU 2015-03 in 2016 and reclassified all prior periods presented in the table above. As of December 31, 2015, $3.8 million of debt issuance costs was reclassified from total assets to a reduction of total indebtedness. The adoption of ASU 2015-03 did not impact our consolidated statements of operations.

(4) In February 2016, the FASB issued Accounting Standards Update No. 2016-02, "Leases (Topic 842)" ("ASU 2016-02") in order to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet for those leases classified as operating leases under US GAAP. ASU 2016-02 requires that a lessee recognize a liability to make lease payments and a right-of-use asset representing its right to use the underlying asset for the lease term on the balance sheet. We adopted the new lease standard as of January 1, 2019, using the modified retrospective transition method, which requires a cumulative effect adjustment, if any, to our beginning equity to be recognized on the date of adoption. There was no cumulative effect adjustment recorded on January 1, 2019. Accordingly, all periods prior to January 1, 2019, were presented in accordance with the previous FASB Accounting Standards Codification ("ASC") Topic 840, Leases, and no retrospective adjustments were made to the comparative periods presented. For further description of the adoption of the new lease standard, see "Item 8. Financial Statements and Supplementary Data—Notes to Consolidated Financial Statements—Note 1—Business, Basis of Presentation and Summary of Significant Accounting Policies—Recently Adopted Accounting Pronouncements" in this Report.

(5) Total indebtedness represents long-term borrowings.

(6) We define Adjusted EBITDA for the periods indicated as EBITDA (as defined below), adjusted to exclude (i) restructuring and other charges (gains), net, (ii) early termination charges, (iii) equity-based compensation expense, (iv) foreign currency loss (gain), net, (v) derivative valuation loss (gain), net, (vi) restatement related expenses (gain), (vii) secondary offering expense, (viii) loss on early extinguishment

of long-term borrowings, net and (ix) others. EBITDA for the periods indicated is defined as net income (loss) before interest expense, net, income tax expense (benefit) and depreciation and amortization. This is a non-US GAAP financial measure and is discussed under "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Explanation and Reconciliation of Non-US GAAP measures—Adjusted EBITDA and Adjusted Net Income."

(7) We define Adjusted Net Income (Loss) for the periods indicated as net income (loss), adjusted to exclude (i) restructuring and other charges (gains), net, (ii) early termination charges, (iii) equity-based compensation expenses, (iv) foreign currency loss (gain), net, (v) derivative valuation loss (gain), net, (vi) restatement related expenses (gain), (vii) secondary offering expense, (viii) loss on early extinguishment of long-term borrowings, net and (ix) others. This is a non-US GAAP financial measure and is discussed under "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Explanation and Reconciliation of Non-US GAAP measures—Adjusted EBITDA and Adjusted Net Income."

## Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

*The following discussion and analysis should be read in conjunction with the audited consolidated financial statements, together in each case with the related notes, included elsewhere in this Report. This discussion and analysis contains, in addition to historical information, forward-looking statements that include risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of certain factors, including those set forth under the heading "Risk Factors" and elsewhere in this Report.*

### Overview

We are a designer and manufacturer of analog and mixed-signal semiconductor platform solutions for communications, IoT applications, consumer, industrial and automotive applications. We provide technology platforms for analog, mixed-signal, power, high voltage, non-volatile memory, and radio frequency applications. We have a proven record with more than 40 years of operating history, a portfolio of approximately 2,950 registered patents and pending applications and extensive engineering and manufacturing process expertise.

Our business is comprised of two operating segments: Foundry Services Group and Standard Products Group. Our Foundry Services Group provides specialty analog and mixed-signal foundry services mainly for fabless and IDM semiconductor companies that primarily serve communications, IoT, consumer, industrial and automotive applications. Our Standard Products Group includes our Display Solutions and Power Solutions business lines. Our Display Solutions products provide panel display solutions to major suppliers of large and small rigid and flexible panel displays, and mobile, automotive applications and home appliances. Our Power Solutions products include discrete and integrated circuit solutions for power management in communications, consumer and industrial applications.

Our wide variety of analog and mixed-signal semiconductor products and manufacturing services combined with our mature technology platform allow us to address multiple high-growth end markets and to rapidly develop and introduce new products and services in response to market demands. Our design center and substantial manufacturing operations in Korea place us at the core of the global electronics device supply chain. We believe this enables us to quickly and efficiently respond to our customers' needs and allows us to better serve and capture additional demand from existing and new customers.

To maintain and increase our profitability, we must accurately forecast trends in demand for electronics devices that incorporate semiconductor products we produce. We must understand our customers' needs as well as the likely end market trends and demand in the markets they serve. We must balance the likely manufacturing utilization demand of our product businesses and foundry business to optimize our capacity utilization. We must also invest in relevant research and development activities and manufacturing capacity and purchase necessary materials on a timely basis to meet our customers' demand while maintaining our target margins and cash flow.

The semiconductor markets in which we participate are highly competitive. The prices of our products tend to decrease regularly over their useful lives, and such price decreases can be significant as new generations of products are introduced by us or our competitors. We strive to offset the impact of declining selling prices for existing products through cost reductions and the introduction of new products that command selling prices above the average selling price of our existing products. In addition, we seek to manage our inventories and manufacturing capacity so as to mitigate the risk of losses from product obsolescence.

Demand for our products and services is driven by overall demand for communications, IoT, consumer, industrial and automotive products and can be adversely affected by periods of weak consumer and enterprise spending or by market share losses by our customers. In order to mitigate the impact of market volatility on our business, we are diversifying our portfolio of products, customers, and target applications. We also expect that new competitors will emerge in these markets that may place increased pressure on the pricing for our products and services. While we believe we are well positioned competitively to compete in these markets and against these new competitors as a result of our long operating history, existing manufacturing capacity and our worldwide customer base, if we are not effective in competing in these markets our operating results may be adversely affected.

Within our Foundry Services Group, net sales are driven by customers’ decisions on which manufacturing services provider to use for a particular product. Most of our Foundry Services Group customers are fabless, while some are IDM customers. A customer will often have more than one supplier of manufacturing services. In any given period, our net sales depend heavily upon the end-market demand for the goods in which the products we manufacture for customers are used, the inventory levels maintained by our customers and in some cases, allocation of demand for manufacturing services among selected qualified suppliers.

Within our Standard Products Group, net sales are driven by design wins in which we are selected by an electronics original equipment manufacturer (OEM) or other potential customer to supply its demand for a particular product. A customer will often have more than one supplier designed in to multi-source components for a particular product line. Once we have design wins and the products enter into mass production, we often specify the pricing of a particular product for a set period of time, with periodic discussions and renegotiations of pricing with our customers. In any given period, our net sales depend heavily upon the end-market demand for the goods in which our products are used, the inventory levels maintained by our customers and in some cases, allocation of demand for components for a particular product among selected qualified suppliers.

In contrast to completely fabless semiconductor companies, our internal manufacturing capacity provides us with greater control over manufacturing costs and the ability to implement process and production improvements for our internally manufactured products, which can favorably impact gross profit margins. Our internal manufacturing capacity also allows for better control over delivery schedules, improved consistency over product quality and reliability and improved ability to protect intellectual property from misappropriation on these products. However, having internal manufacturing capacity exposes us to the risk of under-utilization of manufacturing capacity that results in lower gross profit margins, particularly during downturns in the semiconductor industry.

Our products and services require investments in capital equipment. Analog and mixed-signal manufacturing facilities and processes are typically distinguished by the design and process implementation expertise rather than the use of the most advanced equipment. Many of these processes also tend to migrate more slowly to smaller geometries due to technological barriers and increased costs. For example, some of our products use high-voltage technology that requires larger geometries and that may not migrate to smaller geometries for several years, if at all. As a result, our manufacturing base and strategy do not require substantial investment in leading edge process equipment for those products, allowing us to utilize our facilities and equipment over an extended period of time with moderate required capital investments. In addition, we are less likely to experience significant industry overcapacity, which can cause product prices to decline significantly. In general, we seek to invest in manufacturing capacity that can be used for multiple high-value applications over an extended period of time. In addition, we outsource manufacturing of those products which do require advanced technology and 12-inch wafer capacity, such as organic light emitting diodes (OLED). We believe this balanced capital investment strategy enables us to optimize our capital investments and facilitates more diversified product and service offerings.

Since 2007, we have designed and manufactured OLED display driver ICs in our internal manufacturing facilities. As we expanded our design capabilities to products that require lower geometries unavailable at our existing manufacturing facilities, we began outsourcing manufacturing of certain OLED display driver ICs to an external 12-inch foundry from the second half of 2015. This additional source of manufacturing is an increasingly important part of our supply chain management. By outsourcing manufacturing of advanced OLED products to external 12-inch foundries, we are able to dynamically adapt to the changing customer requirements and address growing markets without substantial capital investments by us. Both at the internal 8-inch manufacturing facilities and external 12-inch foundries, we apply our unique OLED process patents as well as other intellectual property, proprietary process design kits and custom design-flow methodologies.

Our success going forward will depend upon our ability to adapt to future challenges such as the emergence of new competitors for our products and services or the consolidation of current competitors. Additionally, we must innovate to remain ahead of, or at least rapidly adapt to, technological breakthroughs that may lead to a significant change in the technology necessary to deliver our products and services. We believe that our established relationships and close collaboration with leading customers enhance our awareness of new product opportunities, market and technology trends and improve our ability to adapt and grow successfully. In our Foundry Services Group, we strive to maintain competitiveness by offering high-value added processes, high-flexibility and excellent service by tailoring existing standard processes to meet customers' design needs and porting customers' own process technologies into our fabrication facilities.

**Recent Developments**

***Public Health Risks***

In December 2019, a strain of coronavirus causing a disease known as COVID-19 surfaced in Wuhan, China, resulting in significant disruptions among Chinese manufacturing and other facilities and travel throughout China. While our manufacturing supply chain resides largely outside China, some of the test and packaging services for our Power Solutions business line are outsourced to independent subcontractors located in China. Although the extent of the impact of the current COVID-19 coronavirus outbreak on our future results is uncertain, based on our preliminary assessments, public health measures taken in China to protect the population may affect customer demand for our products. This, together with problems that our subcontractors in China may experience for providing packaging and testing services on a timely and sufficient manner, could adversely affect our operating results. We will continue to closely monitor this public health crisis.

***Strategic Evaluation***

On February 14, 2019, we announced that we have undertaken a strategic evaluation of our Foundry Services Group business and the fabrication facility located in Cheongju ("Fab 4"), the larger of our two 8-inch manufacturing facilities. Fab 4 is an analog and mixed-signal fab that produces approximately 73% of our total capacity, and is used primarily to meet wafer demand from customers of our Foundry Services Group that rely on outside suppliers. Certain customer products of our Foundry Service Group are currently manufactured in our smaller 8-inch fabrication facility in Gumi. We have engaged J.P. Morgan Securities LLC as our financial advisor to assist in the evaluation and we have also retained legal advisors to assist in the evaluation. For the year ended December 31, 2019, we recorded $7.0 million in professional fees and other charges incurred in connection with the strategic evaluation and recorded such costs as restructuring and other charges in our consolidated statements of operations.

***Repurchase of Long-Term Borrowings***

In January and February 2019, we repurchased a principal amount of $0.3 million and $0.9 million of the 2021 Notes and the Exchangeable Notes, respectively. As a result, we recorded a $0.04 million net loss as early extinguishment loss on our consolidated statements of operations for the year ended December 31, 2019.

**Segments**

We report our financial results in two operating segments: Foundry Services Group and Standard Products Group. We identified these segments based on how we allocate resources and assess our performance.

In January 2018, as part of our ongoing portfolio optimization effort to realign business processes and streamline our organizational structure, we transferred a portion of our non-OLED display solutions business from our Standards Products Group to our Foundry Services Group. This portion of our transferred non-OLED display business has technical and business characteristics more closely aligned with our Foundry Services business than with our Standard Products business, which resided within our Display solutions business line primarily as a result of a long standing customer relationship established many years ago. We recast comparative segment financial information to conform to this current period change.

- ***Foundry Services Group:*** Our Foundry Services Group provides specialty analog and mixed-signal foundry services to fabless semiconductor companies and IDMs that serve communications, IoT, consumer, industrial and automotive applications. We manufacture wafers based on our customers' product designs. We do not market these products directly to end customers but rather supply manufactured wafers and products to our customers to market to their end customers. We offer approximately 500 process flows to our foundry services customers. We also often partner with key customers to jointly develop or customize specialized processes that enable our customers to improve their products and allow us to develop unique manufacturing expertise. Our foundry services target customers who require differentiated, specialty analog and mixed-signal process technologies such as high voltage complementary metal-oxide-semiconductor (CMOS), non-volatile memory or bipolar-CMOS-DMOS (BCD). These customers typically serve the consumer, computing, communication, industrial, automotive and IoT applications. For the years ended December 31, 2019 and 2018, our Foundry Services Group business represented 38.8% and 43.3% of our net sales and its gross profit was $64.0 million and $82.6 million, respectively. For the year ended December 31, 2017, our Foundry Services Group business represented, on an adjusted basis after recasting, 51.6% of our net sales and its gross profit was $101.8 million, as adjusted for the segment change described above.
- ***Standard Products Group:*** Our Standard Products Group includes our Display Solutions and Power Solutions business lines. Our Display Solutions products include source, gate drivers, timing controllers, and one-chip integrated solutions that cover a wide range of panel displays used in ultra high definition (UHD), high definition (HD), light emitting diode (LED), 3D and OLED televisions public displays, notebooks, mobile communications, entertainment devices and automotive applications. Our Display Solutions products support the industry's most advanced display technologies, such as OLEDs, and low temperature polysilicons (LTPS), as well as high-volume display technologies such as thin film transistors (TFT). Since 2007, we have designed and manufactured OLED display driver IC products. Our current portfolio of OLED solutions address a wide range of resolutions ranging from HD to Wide Quad High Definition (WQHD) for applications including smartphones, TVs, and other mobile devices. We believe we have a unique intellectual property portfolio and mixed-signal design and manufacturing expertise in the OLED industry. Our Power Solutions business line produces power management semiconductor products including discrete and integrated circuit solutions for power management in high-volume consumer applications. These products include metal oxide semiconductor field effect transistors (MOSFETs), insulated-gate bipolar transistors (IGBTs), AC-DC converters, DC-DC converters, LED drivers, switching regulators and linear regulators for a range of devices, including televisions, smartphones, mobile phones, desktop PCs, notebooks, tablet PCs, other consumer electronics, and industrial applications such as power

suppliers, LED lighting, motor control and home appliances. For the years ended December 31, 2019 and 2018, our Standard Products Group, which includes our Display Solutions and Power Solutions business lines, represented 61.2% and 56.7% of our net sales and its gross profit was $116.3 million and $115.5 million, respectively. For the year ended December 31, 2017, our Standard Products Group business represented, on an adjusted basis after recasting, 48.4% of our net sales and its gross profit was $85.9 million, as adjusted for the segment change described above.

## Explanation and Reconciliation of Non-US GAAP Measures

### *Adjusted EBITDA and Adjusted Net Income*

We use the terms Adjusted EBITDA and Adjusted Net Income throughout this Report. Adjusted EBITDA, as we define it, is a non-US GAAP measure. We define Adjusted EBITDA for the periods indicated as EBITDA (as defined below), adjusted to exclude (i) restructuring and other charges (gains), net, (ii) early termination charges, (iii) equity-based compensation expense, (iv) foreign currency loss (gain), net, (v) derivative valuation loss (gain), net, (vi) restatement related expenses (gain), (vii) secondary offering expense, (viii) loss on early extinguishment of long-term borrowings, net and (ix) others. EBITDA for the periods indicated is defined as net income (loss) before interest expense, net, income tax expense, and depreciation and amortization.

See the footnotes to the table below for further information regarding these items. We present Adjusted EBITDA as a supplemental measure of our performance because:

- we believe that Adjusted EBITDA, by eliminating the impact of a number of items that we do not consider to be indicative of our core ongoing operating performance, provides a more comparable measure of our operating performance from period-to-period and may be a better indicator of future performance;
- we believe that Adjusted EBITDA is commonly requested and used by securities analysts, investors and other interested parties in the evaluation of the Company as an enterprise level performance measure that eliminates the effects of financing, income taxes and the accounting effects of capital spending, as well as other one time or recurring items described above; and
- we believe that Adjusted EBITDA is useful for investors, among other reasons, to assess the Company's period-to-period core operating performance and to understand and assess the manner in which management analyzes operating performance.

We use Adjusted EBITDA in a number of ways, including:

- for planning purposes, including the preparation of our annual operating budget;
- to evaluate the effectiveness of our enterprise level business strategies;
- in communications with our Board of Directors concerning our consolidated financial performance; and
- in certain of our compensation plans as a performance measure for determining incentive compensation payments.

We encourage you to evaluate each adjustment and the reasons we consider them appropriate. In evaluating Adjusted EBITDA, you should be aware that in the future we may incur expenses similar to the adjustments in this presentation. Adjusted EBITDA is not a measure defined in accordance with US GAAP and should not be construed as an alternative to income from continuing operations, cash flows from operating activities or net income, as determined in accordance with US GAAP. A reconciliation of net income to Adjusted EBITDA is as follows:

| | Year Ended December 31, 2019 | Year Ended December 31, 2018 | Year Ended December 31, 2017 |
|---|---|---|---|
| | | (In millions) | |
| Net Income (Loss) | $ (21.8) | $ (3.9) | $ 84.9 |
| Interest expense, net | 19.9 | 20.4 | 20.5 |
| Income tax expense | 4.7 | 4.6 | 1.2 |
| Depreciation and amortization | 32.7 | 32.0 | 28.1 |
| EBITDA | $ 35.6 | $ 53.2 | $ 134.7 |
| Adjustments: | | | |
| Restructuring and other charges (gains), net(a) | 9.2 | — | (17.0) |
| Early termination charges(b) | — | — | 13.4 |
| Equity-based compensation expense(c) | 7.0 | 4.4 | 2.3 |
| Foreign currency loss (gain), net(d) | 21.8 | 24.4 | (65.5) |
| Derivative valuation loss (gain), net(e) | 0.3 | 2.4 | (0.2) |
| Restatement related expenses (gain)(f) | — | (0.8) | 10.3 |
| Secondary offering expenses(g) | — | — | 0.7 |
| Loss on early extinguishment of long-term borrowings, net(h) | 0.0 | 0.2 | — |
| Others(i) | 0.6 | 0.4 | — |
| Adjusted EBITDA | $ 74.5 | $ 84.3 | $ 78.7 |

(a) For the year ended December 31, 2019, this adjustment eliminates the impact of a $2.2 million restructuring related charge to our fab employees, and a $7.0 million in professional fees and other charges incurred in connection with the strategic evaluation. For the year ended December 31, 2017, this adjustment eliminates the $16.6 million restructuring gain on sale of a building in connection with the closure of our 6-inch fab and the $0.4 million gain on sale of our sensor business. As these expenses meaningfully impacted our operating results and are not expected to represent an ongoing operating expense to us, we believe our operating performance results are more usefully compared if these expenses are excluded.

(b) This adjustment eliminates the charges related to the reduction of workforce through the Headcount Reduction Plan in the first half of 2017. As these termination related charges are recorded as a result of implementing the company-wide headcount reduction and are not expected to represent ongoing operating expenses to us, we believe our operating performance results are more usefully compared if these expenses are excluded.

(c) This adjustment eliminates the impact of non-cash equity-based compensation expenses. Although we expect to incur non-cash equity-based compensation expenses in the future, these expenses do not generally require cash settlement, and, therefore, are not used by us to assess the profitability of our operations. We believe that analysts and investors will find it helpful to review our operating performance without the effects of these non-cash expenses as supplemental information.

(d) This adjustment mainly eliminates the impact of non-cash foreign currency translation associated with intercompany debt obligations and foreign currency denominated receivables and payables, as well as the cash impact of foreign currency transaction gains or losses on collection of such receivables and payment of such payables. Although we expect to incur foreign currency translation gains or losses in the future, we believe that analysts and investors will find it helpful to review our operating performance without the effects of these primarily non-cash gains or losses, which we cannot control. Additionally, we believe the isolation of this adjustment provides investors with enhanced comparability to prior and future periods of our operating performance results.

(e) This adjustment eliminates the impact of gain or loss recognized in income on derivatives. For the year ended December 31, 2019, this adjustment represents derivatives value changes excluded from the risk being hedged. For the years ended December 31, 2018 and 2017, this adjustment represents hedge ineffectiveness or derivatives value changes excluded from the risk being hedged. We enter into derivative transactions to mitigate foreign exchange risks. As our derivative transactions are limited to a certain portion of our expected cash flows denominated in US dollars, and we do not enter into derivative transactions for trading or speculative purposes, we do not believe that these charges or gains are indicative of our core operating performance.

(f) This adjustment eliminates expenses in connection with the Audit Committee's independent investigation and related restatement and litigation, primarily comprised of legal, audit and consulting fees, and certain other expenses. For the year ended December 31, 2018, this adjustment eliminates the reversal of a $0.8 million accrual related to certain legal fees incurred in prior periods and reimbursed by insurers in the first quarter of 2018. For the year ended December 31, 2017, this adjustment includes the $3.0 million civil penalty imposed by the SEC and the $4.3 million of the additional tax assessment and associated penalties, primarily related to non-income-based VAT transactions in the Restatement periods, administrative fine and related legal fees. As these expenses meaningfully impacted our operating results and are not expected to represent an ongoing operating expense to us, we believe our operating performance results are more usefully compared if these expenses are excluded.

(g) This adjustment eliminates expenses incurred for the secondary offering by the Selling Stockholders primarily in the third quarter of 2017.

(h) This adjustment eliminates expenses related to the repurchase of a portion of the 2021 Notes and the Exchangeable Notes in the fourth quarter of 2018 and the first quarter of 2019.

(i) For the year ended December 31, 2019, this adjustment eliminates $0.5 million in legal settlement charges related to a dispute with a prior customer and a legal expense related to the indemnification of a former employee, which was borne by us under a negotiated separation agreement. For the year ended December 31, 2018, this adjustment eliminates a $0.4 million legal expense related to the indemnification of a former employee. We do not believe that these charges are indicative of our core operating performance and have been excluded for comparative purposes.

Adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation, or as a substitute for analysis of our results as reported under US GAAP. Some of these limitations are:

- Adjusted EBITDA does not reflect our cash expenditures, or future requirements, for capital expenditures or contractual commitments;
- Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;
- Adjusted EBITDA does not reflect the interest expense, or the cash requirements necessary to service interest or principal payments, on our debt;
- although depreciation and amortization are non-cash charges, the assets being depreciated and amortized will often need to be replaced in the future, and Adjusted EBITDA does not reflect any cash requirements for such replacements;
- Adjusted EBITDA does not consider the potentially dilutive impact of issuing equity-based compensation to our management team and employees;
- Adjusted EBITDA does not reflect the costs of holding certain assets and liabilities in foreign currencies; and
- other companies in our industry may calculate Adjusted EBITDA differently than we do, limiting its usefulness as a comparative measure.

Because of these limitations, Adjusted EBITDA should not be considered as a measure of discretionary cash available to us to invest in the growth of our business. We compensate for these limitations by relying primarily on our US GAAP results and using Adjusted EBITDA only supplementally.

We present Adjusted Net Income as a further supplemental measure of our performance. We prepare Adjusted Net Income by adjusting net income (loss) to eliminate the impact of a number of non-cash expenses and other items that may be either one time or recurring that we do not consider to be indicative of our core ongoing operating performance. We believe that Adjusted Net Income is particularly useful because it reflects the impact of our asset base and capital structure on our operating performance. We present Adjusted Net Income for a number of reasons, including:

- we use Adjusted Net Income in communications with our Board of Directors concerning our consolidated financial performance without the impact of non-cash expenses and the other items as we discussed below since we believe that it is a more consistent measure of our core operating results from period to period; and
- we believe that reporting Adjusted Net Income is useful to readers in evaluating our core operating results because it eliminates the effects of non-cash expenses as well as the other items we discuss below, such as foreign currency gains and losses, which are out of our control and can vary significantly from period to period.

Adjusted Net Income is not a measure defined in accordance with US GAAP and should not be construed as an alternative to income from continuing operations, cash flows from operating activities or net income, as determined in accordance with US GAAP. We encourage you to evaluate each adjustment and the reasons we consider them appropriate. Other companies in our industry may calculate Adjusted Net Income differently than we do, limiting its usefulness as a comparative measure. In addition, in evaluating Adjusted Net Income, you should be aware that in the future we may incur expenses similar to the adjustments in this presentation. We define Adjusted Net Income for the periods indicated as net income (loss), adjusted to exclude (i) restructuring and other charges (gains), net, (ii) early termination charges, (iii) equity-based compensation expense, (iv) foreign currency loss (gain), net, (v) derivative valuation loss (gain), net, (vi) restatement related expenses (gain), (vii) secondary offering expense, (viii) loss on early extinguishment of long-term borrowings, net and (ix) others.

The following table summarizes the adjustments to net income (loss) that we make in order to calculate Adjusted Net Income for the periods indicated:

| | Year Ended December 31, 2019 | Year Ended December 31, 2018 | Year Ended December 31, 2017 |
|---|---|---|---|
| | | (In millions) | |
| Net Income (Loss) | $ (21.8) | $ (3.9) | $ 84.9 |
| Adjustments: | | | |
| Restructuring and other charges (gains), net(a) | 9.2 | — | (17.0) |
| Early termination charges(b) | — | — | 13.4 |
| Equity-based compensation expense(c) | 7.0 | 4.4 | 2.3 |
| Foreign currency loss (gain), net(d) | 21.8 | 24.4 | (65.5) |
| Derivative valuation loss (gain), net(e) | 0.3 | 2.4 | (0.2) |
| Restatement related expenses (gain)(f) | — | (0.8) | 10.3 |
| Secondary offering expenses(g) | — | — | 0.7 |
| Loss on early extinguishment of long-term borrowings, net(h) | 0.0 | 0.2 | — |
| Others(i) | 0.6 | 0.4 | — |
| Adjusted Net Income | $ 17.1 | $ 27.1 | $ 28.9 |

(a) For the year ended December 31, 2019, this adjustment eliminates the impact of a $2.2 million restructuring related charge to our fab employees, and a $7.0 million in professional fees and other charges incurred in connection with the strategic evaluation. For the year ended December 31, 2017, this adjustment eliminates the $16.6 million restructuring gain on sale of a building in connection with the closure of our 6-inch fab and the $0.4 million gain on sale of our sensor business. As these expenses meaningfully impacted our operating results and are not expected to represent an ongoing operating expense to us, we believe our operating performance results are more usefully compared if these expenses are excluded.

(b) This adjustment eliminates the charges related to the reduction of workforce through the Headcount Reduction Plan in the first half of 2017. As these termination related charges are recorded as a result of implementing the company-wide headcount reduction and are not expected to represent ongoing operating expenses to us, we believe our operating performance results are more usefully compared if these expenses are excluded.

(c) This adjustment eliminates the impact of non-cash equity-based compensation expenses. Although we expect to incur non-cash equity-based compensation expenses in the future, these expenses do not generally require cash settlement, and, therefore, are not used by us to assess the profitability of our operations. We believe that analysts and investors will find it helpful to review our operating performance without the effects of these non-cash expenses as supplemental information.

(d) This adjustment mainly eliminates the impact of non-cash foreign currency translation associated with intercompany debt obligations and foreign currency denominated receivables and payables, as well as the cash impact of foreign currency transaction gains or losses on collection of such receivables and payment of such payables. Although we expect to incur foreign currency translation gains or losses in the future, we believe that analysts and investors will find it helpful to review our operating performance without the effects of these primarily non-cash gains or losses, which we cannot control. Additionally, we believe the isolation of this adjustment provides investors with enhanced comparability to prior and future periods of our operating performance results.

(e) This adjustment eliminates the impact of gain or loss recognized in income on derivatives. For the year ended December 31, 2019, this adjustment represents derivatives value changes excluded from the risk being hedged. For the years ended December 31, 2018 and 2017, this adjustment represents hedge ineffectiveness or derivatives value changes excluded from the risk being hedged. We enter into derivative transactions to mitigate foreign exchange risks. As our derivative transactions are limited to a certain portion of our expected cash flows denominated in US dollars, and we do not enter into derivative transactions for trading or speculative purposes, we do not believe that these charges or gains are indicative of our core operating performance.

(f) This adjustment eliminates expenses in connection with the Audit Committee's independent investigation and related restatement and litigation, primarily comprised of legal, audit and consulting fees, and certain other expenses. For the year ended December 31, 2018, this adjustment eliminates the reversal of a $0.8 million accrual related to certain legal fees incurred in prior periods and reimbursed by insurers in the first quarter of 2018. For the year ended December 31, 2017, this adjustment includes the $3.0 million civil penalty imposed by the SEC and the $4.3 million of the additional tax assessment and associated penalties, primarily related to non-income-based VAT transactions in the Restatement periods, administrative fine and related legal fees. As these expenses meaningfully impacted our operating results and are not expected to represent an ongoing operating expense to us, we believe our operating performance results are more usefully compared if these expenses are excluded.

(g) This adjustment eliminates expenses incurred for the secondary offering by the Selling Stockholders primarily in the third quarter of 2017.

(h) This adjustment eliminates expenses related to the repurchase of a portion of the 2021 Notes and the Exchangeable Notes in the fourth quarter of 2018 and the first quarter of 2019.

(i) For the year ended December 31, 2019, this adjustment eliminates $0.5 million in legal settlement charges related to a dispute with a prior customer and a legal expense related to the indemnification of a former employee, which was borne by us under a negotiated separation agreement. For the year ended December 31, 2018, this adjustment eliminates a $0.4 million legal expense related to the indemnification of a former employee. We do not believe that these charges are indicative of our core operating performance and have been excluded for comparative purposes.

There was no tax impact from the adjustments to net income to calculate our Adjusted Net Income for the years ended December 31, 2019, 2018 and 2017 due to net operating loss carry-forwards available to offset taxable income and full allowance for deferred tax assets. We believe that all adjustments to net income (loss) used to calculate Adjusted Net Income was applied consistently to the periods presented.

Adjusted Net Income has limitations as an analytical tool, and you should not consider it in isolation, or as a substitute for analysis of our results as reported under US GAAP. Some of these limitations are:

- Adjusted Net Income does not reflect changes in, or cash requirements for, our working capital needs;
- Adjusted Net Income does not consider the potentially dilutive impact of issuing equity-based compensation to our management team and employees;
- Adjusted Net Income does not reflect the costs of holding certain assets and liabilities in foreign currencies; and
- other companies in our industry may calculate Adjusted Net Income differently than we do, limiting its usefulness as a comparative measure.

Because of these limitations, Adjusted Net Income should not be considered as a measure of profitability of our business. We compensate for these limitations by relying primarily on our US GAAP results and using Adjusted Net Income only as a supplement.

Our Adjusted EBITDA and Adjusted Net Income for the year ended December 31, 2019 were $74.5 million and $17.1 million, respectively. Our Adjusted EBITDA and Adjusted Net Income for the year ended December 31, 2018 were $84.3 million and $27.1 million, respectively. Our Adjusted EBITDA and Adjusted Net Income for the year ended December 31, 2017 were $78.7 million and $28.9 million, respectively.

**Factors Affecting Our Results of Operations**

***Net Sales.*** We derive virtually all of our sales (net of sales returns and allowances) from two segments: our Foundry Services Group and Standard Products Group. Our product inventory is primarily located in Korea and is available for drop shipment globally. Outside of Korea, we maintain limited product inventory, and our sales representatives generally relay orders to our factories in Korea for fulfillment. We have strategically located our sales and technical support offices near concentrations of major customers. Our sales offices are located in Korea, the United States, Japan and Greater China. Our network of authorized agents and distributors is in the United States, Europe and the Asia Pacific region. Our net sales from All other consist principally of the disposal of scrap materials.

Prior to the adoption of the new revenue standard effective on January 1, 2018, we had historically recognized revenue when risk and reward of ownership pass to the customer either upon shipment, upon product delivery at the customer’s location or upon customer acceptance, depending on the terms of the arrangement. After the adoption of the new revenue standard effective on January 1, 2018, we recognize revenue over time for those foundry products without alternative use where we have an enforceable right to payment for the related foundry services completed to date. As we adopted the new revenue standard under the modified retrospective method, we have not changed the comparative information in our consolidated financial statements for the year ended December 31, 2017. Such comparative information continues to be reported under the accounting standards in effect for that period. See “Item 8. Financial Statements and Supplementary Data—Notes to Consolidated Financial Statements—Note 1—Business, Basis of Presentation and Significant Accounting Policies—Basis of Presentation and Recent Accounting Pronouncements” in this Report for further discussion. For the years ended December 31, 2019 and 2018, we sold products to 355 and 370 customers, respectively, and our net sales to our ten largest customers represented 67% and 61% of our net sales, respectively. We have a combined production capacity of approximately 113,000 semiconductor wafers per month. We believe our large-scale, cost-effective fabrication facilities enable us to rapidly adjust our production levels to meet shifts in demand by our end customers.

***Gross Profit.*** Our overall gross profit generally fluctuates as a result of changes in overall sales volumes and in the average selling prices of our products and services. Other factors that influence our gross profit include changes in product mix, the introduction of new products and services and subsequent generations of existing products and services, shifts in the utilization of our manufacturing facilities and the yields achieved by our manufacturing operations, changes in material, labor and other manufacturing costs including outsourced manufacturing expenses, and variation in depreciation expense.

***Average Selling Prices.*** Average selling prices for our products tend to be highest at the time of introduction of new products which utilize the latest technology and tend to decrease over time as such products mature in the market and are replaced by next generation products. We strive to offset the impact of declining selling prices for existing products through our product development activities and by introducing new products that command selling prices above the average selling price of our existing products. In addition, we seek to manage our inventories and manufacturing capacity so as to preclude losses from product and productive capacity obsolescence.

***Material Costs.*** Our cost of material consists of costs of raw materials, such as silicon wafers, chemicals, gases and tape and packaging supplies. We use processes that require specialized raw materials, such as silicon wafers, that are generally available from a limited number of suppliers. If demand increases or supplies decrease, the costs of our raw materials could increase significantly.

***Labor Costs.*** A significant portion of our employees are located in Korea. Under Korean labor laws, most employees and certain executive officers with one or more years of service are entitled to severance benefits upon the termination of their employment based on their length of service and rate of pay. As of December 31, 2019, approximately 98% of our employees were eligible for severance benefits.

***Depreciation Expense.*** We periodically evaluate the carrying values of long-lived assets, including property, plant and equipment and intangible assets, as well as the related depreciation periods. We depreciated our property, plant and equipment using the straight-line method over the estimated useful lives of our assets. Depreciation rates vary from 30-40 years on buildings to 5 to 12 years for certain equipment and assets. Our evaluation of carrying values is based on various analyses including cash flow and profitability projections. If our projections indicate that future undiscounted cash flows are not sufficient to recover the carrying values of the related long-lived assets, the carrying value of the assets is impaired and will be reduced, with the reduction charged to expense so that the carrying value is equal to fair value.

***Selling Expenses.*** We sell our products worldwide through a direct sales force as well as a network of sales agents and representatives to OEMs, including major branded customers and contract manufacturers, and indirectly through distributors. Selling expenses consist primarily of the personnel costs for the members of our direct sales force, a network of sales representatives and other costs of distribution. Personnel costs include base salary, benefits and incentive compensation.

***General and Administrative Expenses.*** General and administrative expenses consist of the costs of various corporate operations, including finance, legal, human resources and other administrative functions. These expenses primarily consist of payroll-related expenses, consulting and other professional fees and office facility-related expenses.

***Research and Development.*** The rapid technological change and product obsolescence that characterize our industry require us to make continuous investments in research and development. Product development time frames vary but, in general, we incur research and development costs one to two years before generating sales from the associated new products. These expenses include personnel costs for members of our engineering workforce, cost of photomasks, silicon wafers and other non-recurring engineering charges related to product design. Additionally, we develop base line process technology through experimentation and through the design and use of characterization wafers that help achieve commercially feasible yields for new products. The majority of research and development expenses of our Foundry Services Group are for process development that serves as a common technology platform for all of our product lines. For our Standard Products Group, the majority of research and development expenses are material-related costs for OLED display driver IC product development involving fine processes.

***Interest Expense.*** Our interest expense was incurred primarily under our 2021 Notes and our Exchangeable Notes.

***Impact of Foreign Currency Exchange Rates on Reported Results of Operations.*** Historically, a portion of our revenues and greater than the majority of our operating expenses and costs of sales have been denominated in non-US currencies, principally the Korean won, and we expect that this will remain true in the future. Because we report our results of operations in US dollars converted from our non-US revenues and expenses based on monthly average exchange rates, changes in the exchange rate between the Korean won and the US dollar could materially impact our reported results of operations and distort period to period comparisons. In particular, because of the difference in the amount of our consolidated revenues and expenses that are in US dollars relative to Korean won, depreciation in the US dollar relative to the Korean won could result in a material increase in reported costs relative to revenues, and therefore could cause our profit margins and operating income (loss) to appear to decline materially, particularly relative to prior periods. The converse is true if the US dollar were to appreciate relative to the Korean won. Moreover, our foreign currency gain or loss would be affected by changes in the exchange rate between the Korean won and the US dollar as a substantial portion of non-cash translation gain or loss is associated with the intercompany long-term loans to our Korean subsidiary, which is denominated in US dollars. As of December 31, 2019, the outstanding intercompany loan balance including accrued interest between our Korean subsidiary and our Dutch subsidiary was $686.5 million. As a result of such foreign currency fluctuations, it could be more difficult to detect underlying trends in our business and results of operations. In addition, to the extent that fluctuations in currency exchange rates cause our results of operations to differ from our expectations or the expectations of our investors, the trading price of our stock could be adversely affected.

From time to time, we may engage in exchange rate hedging activities in an effort to mitigate the impact of exchange rate fluctuations. Our Korean subsidiary enters into foreign currency forward and zero cost collar contracts in order to mitigate a portion of the impact of US dollar-Korean won exchange rate fluctuations on our operating results. Obligations under these foreign currency forward and zero cost collar contracts must be cash collateralized if our exposure exceeds certain specified thresholds. These forward and zero cost collar contracts may be terminated by a counterparty in a number of circumstances, including if our long-term debt rating falls below B-/B3 or if our total cash and cash equivalents is less than $30.0 million at the end of a fiscal quarter unless a waiver is obtained from the counterparty. We cannot assure that any hedging technique we implement will be effective. If our hedging activities are not effective, changes in currency exchange rates may have a more significant impact on our results of operations. See “Note 9. Derivative Financial Instruments” to our consolidated financial statements under “Item 8. Financial Statements and Supplementary Data” for additional information regarding our foreign exchange hedging activities.

***Foreign Currency Gain or Loss.*** Foreign currency translation gains or losses on transactions by us or our subsidiaries in a currency other than our or our subsidiaries’ functional currency are included in foreign currency gain (loss), net in our statements of operations. A substantial portion of this net foreign currency gain or loss relates to non-cash translation gain or loss related to the principal balance of intercompany balances at our Korean subsidiary that are denominated in US dollars. This gain or loss results from fluctuations in the exchange rate between the Korean won and US dollar.

***Income Taxes.*** We record our income taxes in each of the tax jurisdictions in which we operate. This process involves using an asset and liability approach whereby deferred tax assets and liabilities are recorded for differences in the financial reporting bases and tax bases of our assets and liabilities. We exercise significant management judgment in determining our provision for income taxes, deferred tax assets and liabilities. We assess whether it is more likely than not that the deferred tax assets existing at the period-end will be realized in future periods. In such assessment, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent results of operations. In the event we were to determine that we would be able to realize the deferred income tax assets in the future in excess of their net recorded amount, we would adjust the valuation allowance, which would reduce the provision for income taxes.

We are subject to income- or non-income-based tax examinations by tax authorities of the US, Korea and multiple other foreign jurisdictions, where applicable, for all open tax years. Significant estimates and judgments are required in determining our worldwide provision for income- or non-income based taxes. Some of these estimates are based on interpretations of existing tax laws or regulations. The ultimate amount of tax liability may be uncertain as a result. See “Item 8. Financial Statements and Supplementary Data—Notes to Consolidated Financial Statements—Note 17. Income Taxes” included elsewhere in this Report.

***Capital Expenditures.*** We primarily invest in manufacturing equipment, software design tools and other tangible assets mainly for fabrication facility maintenance, capacity expansion and technology improvement. Capacity expansions and technology improvements typically occur in anticipation of increases in demand. We typically pay for capital expenditures in partial installments with portions due on order, delivery and final acceptance. Our capital expenditures mainly include our payments for the purchase of property, plant and equipment.

***Inventories.*** We monitor our inventory levels in light of product development changes and market expectations. We may be required to take additional charges for quantities in excess of demand, cost in excess of market value and product age. Our analysis may take into consideration historical usage, expected demand, anticipated sales price, new product development schedules, the effect new products might have on the sales of existing products, product age, customer design activity, customer concentration and other factors. These forecasts require us to estimate our ability to predict demand for current and future products and compare those estimates with our current inventory levels and inventory purchase commitments. Our forecasts for our inventory may differ from actual inventory use.

### Results of Operations

The following table sets forth, for the periods indicated, certain information related to our operations, expressed in US dollars and as a percentage of our net sales:

| | Year Ended December 31, 2019 | | Year Ended December 31, 2018 | | Year Ended December 31, 2017 (As adjusted) | |
|---|---|---|---|---|---|---|
| | Amount | % of net sales | Amount | % of net sales | Amount | % of net sales |
| | (In millions) | | | | | |
| Consolidated statements of operations data: | | | | | | |
| Net sales | $792.2 | 100.0% | $750.9 | 100.0% | $679.7 | 100.0% |
| Cost of sales | 611.6 | 77.2 | 552.8 | 73.6 | 491.8 | 72.4 |
| Gross profit | 180.6 | 22.8 | 198.1 | 26.4 | 187.9 | 27.6 |
| Selling, general and administrative expenses | 71.6 | 9.0 | 72.6 | 9.7 | 81.8 | 12.0 |
| Research and development expenses | 75.4 | 9.5 | 78.0 | 10.4 | 70.5 | 10.4 |
| Restructuring and other charges (gains), net | 9.2 | 1.2 | — | — | (17.0) | (2.5) |
| Early termination charges | — | — | — | — | 13.4 | 2.0 |
| Operating income | 24.4 | 3.1 | 47.4 | 6.3 | 39.2 | 5.8 |
| Interest expense | (22.6) | (2.9) | (22.3) | (3.0) | (21.6) | (3.2) |
| Foreign currency gain (loss), net | (21.8) | (2.8) | (24.4) | (3.3) | 65.5 | 9.6 |
| Loss on early extinguishment of long-term borrowings, net | (0.0) | (0.0) | (0.2) | (0.0) | — | — |
| Others, net | 3.0 | 0.4 | 0.3 | 0.0 | 2.9 | 0.4 |
| | (41.5) | (5.2) | (46.7) | (6.2) | 46.9 | 6.9 |
| Income (loss) before income tax expense | (17.1) | (2.2) | 0.7 | 0.1 | 86.1 | 12.7 |
| Income tax expense | 4.7 | 0.6 | 4.6 | 0.6 | 1.2 | 0.2 |
| Net income (loss) | $ (21.8) | (2.8)% | $ (3.9) | (0.5)% | $ 84.9 | 12.5% |
| Net Sales: | | | | | | |
| Foundry Services Group | $307.1 | 38.8% | $325.3 | 43.3% | $350.4 | 51.6% |
| Standard Products Group | | | | | | |
| Display Solutions | 308.5 | 38.9 | 256.1 | 34.1 | 179.2 | 26.4 |
| Power Solutions | 176.2 | 22.2 | 169.3 | 22.5 | 149.8 | 22.0 |
| Total Standard Products Group | 484.8 | 61.2 | 425.4 | 56.7 | 329.1 | 48.4 |
| All other | 0.3 | 0.0 | 0.2 | 0.0 | 0.2 | 0.0 |
| Total net sales | $792.2 | 100.0% | $750.9 | 100.0% | $679.7 | 100.0% |

**Results of Operations—Comparison of Years Ended December 31, 2019 and 2018**

The following table sets forth consolidated results of operations for the years ended December 31, 2019 and 2018:

| | Year Ended December 31, 2019 | | Year Ended December 31, 2018 | | |
|---|---|---|---|---|---|
| | Amount | % of Net Sales | Amount | % of Net Sales | Change Amount |
| | | | (In millions) | | |
| Net sales | $792.2 | 100.0% | $750.9 | 100.0% | $ 41.3 |
| Cost of sales | 611.6 | 77.2 | 552.8 | 73.6 | 58.8 |
| Gross profit | 180.6 | 22.8 | 198.1 | 26.4 | (17.5) |
| Selling, general and administrative expenses | 71.6 | 9.0 | 72.6 | 9.7 | (1.0) |
| Research and development expenses | 75.4 | 9.5 | 78.0 | 10.4 | (2.7) |
| Restructuring and other charges | 9.2 | 1.2 | — | — | 9.2 |
| Operating income | 24.4 | 3.1 | 47.4 | 6.3 | (23.0) |
| Interest expense | (22.6) | (2.9) | (22.3) | (3.0) | (0.3) |
| Foreign currency loss, net | (21.8) | (2.8) | (24.4) | (3.3) | 2.6 |
| Loss on early extinguishment of long-term borrowings, net | (0.0) | (0.0) | (0.2) | (0.0) | 0.2 |
| Others, net | 3.0 | 0.4 | 0.3 | 0.0 | 2.7 |
| | (41.5) | (5.2) | (46.7) | (6.2) | 5.2 |
| Income (loss) before income tax expense | (17.1) | (2.2) | 0.7 | 0.1 | (17.8) |
| Income tax expense | 4.7 | 0.6 | 4.6 | 0.6 | 0.1 |
| Net loss | $ (21.8) | (2.8) | $ (3.9) | (0.5) | $ (17.9) |

***Results by segment***

| | Year Ended December 31, 2019 | | Year Ended December 31, 2018 | | |
|---|---|---|---|---|---|
| | Amount | % of Net Sales | Amount | % of Net Sales | Change Amount |
| | | | (In millions) | | |
| ***Net Sales*** | | | | | |
| Foundry Services Group | $307.1 | 38.8% | $325.3 | 43.3% | $ (18.2) |
| Standard Products Group | | | | | |
| Display Solutions | 308.5 | 38.9 | 256.1 | 34.1 | 52.4 |
| Power Solutions | 176.2 | 22.2 | 169.3 | 22.5 | 7.0 |
| Total Standard Products Group | 484.8 | 61.2 | 425.4 | 56.7 | 59.4 |
| All other | 0.3 | 0.0 | 0.2 | 0.0 | 0.1 |
| Total net sales | $792.2 | 100.0% | $750.9 | 100.0% | $ 41.3 |

| | Year Ended December 31, 2019 | | Year Ended December 31, 2018 | | |
|---|---|---|---|---|---|
| | Amount | % of Net Sales | Amount | % of Net Sales | Change Amount |
| | | | (In millions) | | |
| ***Gross Profit*** | | | | | |
| Foundry Services Group | $ 64.0 | 20.8% | $ 82.6 | 25.4% | $ (18.6) |
| Standard Products Group | 116.3 | 24.0 | 115.5 | 27.1 | 0.8 |
| All other | 0.3 | 99.6 | 0.0 | 21.2 | 0.2 |
| Total gross profit | $180.6 | 22.8% | $198.1 | 26.4% | $ (17.5) |

***Net Sales***

Net sales were $792.2 million for the year ended December 31, 2019, a $41.3 million, or 5.5%, increase compared to $750.9 million for the year ended December 31, 2018. This increase was primarily attributable to an increase in revenue from our Standard Products Group, which was offset in part by a decrease in revenue from our Foundry Services Group.

***Foundry Services Group.*** Net sales from our Foundry Services Group segment were $307.1 million for the year ended December 31, 2019, an $18.2 million, or 5.6%, decrease compared to net sales of $325.3 million for the year ended December 31, 2018. The decrease was primarily attributable to weaker demand from our foundry customers during the first half of 2019 as a result of softening global market conditions, including macroeconomic uncertainties, and us being more selective about new business as a result of our strategic evaluation of our Foundry Services Group business and Fab 4. This decrease was offset in part by an increase in sales of certain communication-related products from global power management IC foundry customers and higher sales of certain gate driver ICs for a foundry customer serving the global computing sector.

***Standard Products Group.*** Net sales from our Standard Products Group segment were $484.8 million for the year ended December 31, 2019, a $59.4 million, or 14.0%, increase compared to $425.4 million for the year ended December 31, 2018. This increase was primarily attributable to an increase in revenue related to our mobile OLED display driver ICs due to an increase in new OLED smartphones by Chinese and Korean manufacturers and higher demand for premium power products such as high-end MOSFETs primarily for TV and industrial applications. This increase was offset in part by a strategic reduction of our lower margin LCD business.

***All Other.*** All other net sales were $0.3 million and $0.2 million for the years ended December 31, 2019 and 2018, respectively.

***Gross Profit***

Total gross profit was $180.6 million for the year ended December 31, 2019 compared to $198.1 million for the year ended December 31, 2018, a $17.5 million, or 8.8%, decrease. Gross profit as a percentage of net sales for the year ended December 31, 2019 decreased to 22.8% compared to 26.4% for the year ended December 31, 2018, primarily due to a decrease in gross profit as a percentage of net sales from both of our Foundry Services Group and Standard Products Group segments as described below.

***Foundry Services Group.*** Gross profit from our Foundry Services Group segment was $64.0 million for the year ended December 31, 2019, an $18.6 million, or 22.5%, decrease compared to $82.6 million for the year ended December 31, 2018. Gross profit as a percentage of net sales for the year ended December 31, 2019 decreased to 20.8% compared to 25.4% for the year ended December 31, 2018. The decrease in both gross profit and gross profit margin was primarily attributable to an unfavorable product mix and a significant drop in the utilization rate during the first half of 2019, which was affected in part by a softening of global market conditions, including macroeconomic uncertainties, and by being more selective about new business as a result of the strategic evaluation of our Foundry Services Group business and Fab 4.

***Standard Products Group.*** Gross profit from our Standard Products Group segment was $116.3 million for the year ended December 31, 2019, a $0.8 million, or 0.7%, increase from $115.5 million for the year ended December 31, 2018. Gross profit as a percentage of net sales for the year ended December 31, 2019 decreased to 24.0% compared to 27.1% for the year ended December 31, 2018. The decrease in gross profit margin was primarily attributable to inventory reserves related to certain legacy display products and a significant drop in the utilization rate during the first half of 2019, and an impact from lower yield of a newly introduced mobile display product during an early stage of production during the third quarter of 2019. This decrease was offset in part by a better product mix from an increase in sales of premium power products such as high-end MOSFETs primarily for TV and industrial applications.

***All Other.*** All other gross profit was $0.3 million for the year ended December 31, 2019 and $0.04 million for the year ended December 31, 2018.

***Net Sales by Geographic Region***

We report net sales by geographic region based on the location to which the products are billed. The following table sets forth our net sales by geographic region and the percentage of total net sales represented by each geographic region for the years ended December 31, 2019 and 2018:

| | Year Ended December 31, 2019 | | Year Ended December 31, 2018 | | |
|---|---|---|---|---|---|
| | Amount | % of Net Sales | Amount | % of Net Sales | Change Amount |
| | | | (In millions) | | |
| Korea | $249.4 | 31.5% | $282.5 | 37.6% | $ (33.1) |
| Asia Pacific (other than Korea) | 466.4 | 58.9 | 380.6 | 50.7 | 85.8 |
| United States | 28.1 | 3.5 | 37.5 | 5.0 | (9.4) |
| Europe | 46.4 | 5.9 | 47.8 | 6.4 | (1.4) |
| Others | 1.9 | 0.2 | 2.5 | 0.3 | (0.6) |
| | $792.2 | 100.0% | $750.9 | 100.0% | $ 41.3 |

Net sales in Korea for the year ended December 31, 2019 decreased from $282.5 million to $249.4 million compared to the year ended December 31, 2018, or by $33.1 million, or 11.7%, primarily due to a decrease in revenue related to mobile OLED display driver ICs and a strategic reduction of lower margin LCD business. This decrease was offset in part by higher sales of certain gate driver ICs for a foundry customer in Korea serving the global computing sector and increased sales of our premium power products.

Net sales in the Asia Pacific for the year ended December 31, 2019 increased from $380.6 million to $466.4 million compared to the year ended December 31, 2018, or by $85.8 million, or 22.5%, primarily due to an increase in revenue related to mobile OLED display driver ICs in connection with an increase in new OLED smartphones by Chinese and Korean manufacturers. This increase was offset in part by weaker demand during the first half of 2019 from our foundry customers in part as a result of softening global market conditions, including macroeconomic uncertainties, us being more selective about new business as a result of the strategic evaluation of the Foundry business and Fab 4, and a lower demand for certain of our lower margin power products.

Net sales in the United States for the year ended December 31, 2019 decreased from $37.5 million to $28.1 million compared to the year ended December 31, 2018, or by $9.4 million, or 25.0%, primarily due to a decrease in sales of certain products from a global power management IC foundry customer.

Net sales in Europe for the year ended December 31, 2019 decreased from $47.8 million to $46.4 million compared to the year ended December 31, 2018, or by $1.4 million, or 2.9%, primarily due to a decrease in sales of sensor-related ICs for automotive applications and lower demand from a customer serving the high-end smartphone market, which was offset in part by an increase in sales of certain charger related products in the communications industry.

### *Operating Expenses*

***Selling, General and Administrative Expenses.*** Selling, general and administrative expenses were $71.6 million, or 9.0% of net sales for the year ended December 31, 2019, compared to $72.6 million, or 9.7% of net sales for the year ended December 31, 2018. The decrease of $1.0 million, or 1.4%, was primarily attributable to a decrease in certain employee incentives and legal and consulting service fees. This decrease was offset in part by an increase in equity-based compensation and legal settlement charges relating to a dispute with a prior customer recorded in the first quarter of 2019.

***Research and Development Expenses.*** Research and development expenses were $75.4 million, or 9.5%, of net sales for the year ended December 31, 2019, compared to $78.0 million, or 10.4%, of net sales for the year ended December 31, 2018. The decrease of $2.7 million, or 3.4%, was primarily attributable to a decrease in certain employee incentives and a decrease in outside service fees and various overhead expenses, which was offset in part by an increase in development activities for our 28-nanometer OLED display driver ICs.

***Restructuring and Other Charges.*** For the year ended December 31, 2019, we recorded $7.0 million in professional fees and other charges incurred in connection with the strategic evaluation of our Foundry Services Group business and Fab 4, and recorded such costs as restructuring and other charges in our consolidated statements of operations. We also recorded $2.2 million and $0.1 million restructuring-related charges in the first and the fourth quarter of 2019, respectively.

### *Operating Income*

As a result of the foregoing, operating income decreased by a $23.0 million in the year ended December 31, 2019 compared to the year ended December 31, 2018. As discussed above, the decrease in operating income resulted from a $17.5 million decrease in gross profit and a $9.2 million increase in restructuring and other charges, which were partially offset by a $1.0 million decrease in selling, general and administrative expenses and a $2.7 million decrease in research and development expenses.

### *Other Income (Expense)*

***Interest Expense.*** Interest expenses were $22.6 million and $22.3 million for the years ended December 31, 2019 and December 31, 2018, respectively.

***Foreign Currency Loss, Net.*** Net foreign currency loss for the year ended December 31, 2019 was $21.8 million compared to net foreign currency loss of $24.4 million for the year ended December 31, 2018, which was due to the depreciation in value of the Korean won relative to the US dollar during the period.

A substantial portion of our net foreign currency gain or loss is non-cash translation gain or loss associated with the intercompany long-term loans to our Korean subsidiary, which is denominated in US dollars, and is affected by changes in the exchange rate between the Korean won and the US dollar. As of December 31, 2019, the outstanding intercompany loan balance including accrued interest between our Korean subsidiary and our Dutch subsidiary was $686.5 million. Foreign currency translation loss from intercompany balances was included in determining our consolidated net income since the intercompany balances were not considered long-term investments in nature because management intended to settle these intercompany balances at their respective maturity dates.

***Loss on Early Extinguishment of Long-Term Borrowings, Net.*** Loss on early extinguishment of long-term borrowings for the years ended December 31, 2019 and 2018 were $0.04 million and $0.2 million, respectively.

***Others, Net.*** Others were comprised of gains and losses on the valuation of derivatives which were designated as hedging instruments, rental income and interest income. Others for the years ended December 31, 2019 and 2018 were $3.0 million and $0.3 million, respectively.

### *Income Tax Expense*

We are subject to income taxes in the United States and many foreign jurisdictions and our effective tax rate is affected by changes in the mix of earnings between countries with differing tax rates. Our primary foreign operations are in Korea where the statutory tax rate applicable to us was approximately 24.2%. Statutory tax rates for our foreign subsidiaries except those in Luxembourg, Netherlands and Korea, were less than the US federal statutory rate of 21.0%.

We recorded income tax expenses of $4.7 million and $4.6 million for the years ended December 31, 2019 and 2018, respectively. The income tax expenses for the years ended December 31, 2019 and 2018 were primarily attributable to taxable income generated by our primary operating subsidiary in Korea combined with its ability to utilize net operating carryforwards up to 60% of the taxable income. Our effective tax rate was negative for the year ended December 31, 2019, as compared to 620.6% for the year ended December 31, 2018.

We make an ongoing assessment regarding the realization of US and non-US deferred tax assets. The valuation allowances at December 31, 2019 and 2018 were primarily attributable to deferred tax assets for the uncertainty in taxable income at our Korean subsidiary for which we have recorded a full valuation allowance against the deferred tax assets, net of its deferred tax liabilities, and against certain of our foreign subsidiaries' deferred tax assets pertaining to their related tax loss carry-forwards and tax credits that are not anticipated to generate a tax benefit.

### *Net Loss*

As a result of the foregoing, net loss increased by $17.9 million in the year ended December 31, 2019 compared to the year ended December 31, 2018. As discussed above, the increase primarily resulted from a $23.0 million decrease in operating income, which was partially offset by a $2.6 million decrease in foreign currency loss and a $2.1 million decrease in losses on the valuation of derivatives recorded in others, net.

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**Results of Operations—Comparison of Years Ended December 31, 2018 and 2017**

The following table sets forth consolidated results of operations for the years ended December 31, 2018 and 2017:

| | Year Ended December 31, 2018 | | Year Ended December 31, 2017 | | |
|---|---|---|---|---|---|
| | Amount | % of Net Sales | Amount | % of Net Sales | Change Amount |
| | | | (In millions) | | |
| Net sales | $750.9 | 100.0% | $679.7 | 100.0% | $ 71.2 |
| Cost of sales | 552.8 | 73.6 | 491.8 | 72.4 | 61.0 |
| Gross profit | 198.1 | 26.4 | 187.9 | 27.6 | 10.2 |
| Selling, general and administrative expenses | 72.6 | 9.7 | 81.8 | 12.0 | (9.1) |
| Research and development expenses | 78.0 | 10.4 | 70.5 | 10.4 | 7.5 |
| Restructuring and other gains, net | — | — | (17.0) | (2.5) | 17.0 |
| Early termination charges | — | — | 13.4 | 2.0 | (13.4) |
| Operating income | 47.4 | 6.3 | 39.2 | 5.8 | 8.2 |
| Interest expense | (22.3) | (3.0) | (21.6) | (3.2) | (0.7) |
| Foreign currency gain (loss), net | (24.4) | (3.3) | 65.5 | 9.6 | (90.0) |
| Loss on early extinguishment of long-term borrowings, net | (0.2) | (0.0) | — | — | (0.2) |
| Others, net | 0.3 | 0.0 | 2.9 | 0.4 | (2.6) |
| | (46.7) | (6.2) | 46.9 | 6.9 | (93.5) |
| Income before income tax expense | 0.7 | 0.1 | 86.1 | 12.7 | (85.3) |
| Income tax expense | 4.6 | 0.6 | 1.2 | 0.2 | 3.5 |
| Net income (loss) | $ (3.9) | (0.5) | $ 84.9 | 12.5 | $ (88.8) |

***Results by segment***

| | Year Ended December 31, 2018 | | Year Ended December 31, 2017 (As adjusted) | | |
|---|---|---|---|---|---|
| | Amount | % of Net Sales | Amount | % of Net Sales | Change Amount |
| | | | (In millions) | | |
| ***Net Sales*** | | | | | |
| Foundry Services Group | $325.3 | 43.3% | $350.4 | 51.6% | $ (25.1) |
| Standard Products Group | | | | | |
| Display Solutions | 256.1 | 34.1 | 179.2 | 26.4 | 76.9 |
| Power Solutions | 169.3 | 22.5 | 149.8 | 22.0 | 19.4 |
| Total Standard Products Group | 425.4 | 56.7 | 329.1 | 48.4 | 96.3 |
| All other | 0.2 | 0.0 | 0.2 | 0.0 | (0.0) |
| Total net sales | $750.9 | 100.0% | $679.7 | 100.0% | $ 71.2 |

| | Year Ended December 31, 2018 | | Year Ended December 31, 2017 (As adjusted) | | |
|---|---|---|---|---|---|
| | Amount | % of Net Sales | Amount | % of Net Sales | Change Amount |
| | | | (In millions) | | |
| ***Gross Profit*** | | | | | |
| Foundry Services Group | $ 82.6 | 25.4% | $101.8 | 29.0% | $ (19.2) |
| Standard Products Group | 115.5 | 27.1 | 85.9 | 26.1 | 29.6 |
| All other | 0.0 | 21.2 | 0.2 | 100.0 | (0.2) |
| Total gross profit | $198.1 | 26.4% | $187.9 | 27.6% | $ 10.2 |

***Net Sales***

Net sales were $750.9 million for the year ended December 31, 2018, a $71.2 million, or 10.5%, increase compared to $679.7 million for the year ended December 31, 2017. This increase was primarily attributable to an increase in revenue from our Standard Products Group, which was offset in part by a decrease in revenue from our Foundry Services Group.

***Foundry Services Group.*** Net sales from our Foundry Services Group segment were $325.3 million for the year ended December 31, 2018, a $25.1 million, or 7.2%, decrease compared to net sales of $350.4 million for the year ended December 31, 2017. The decrease was primarily attributable to a decrease in demand of low margin product sales from a global power management IC foundry customer and a decrease in demand from a customer serving the low- to mid-range mobile phone market. This decrease was offset in part by an increase in sales of certain battery charger related products from a global power management IC foundry customer.

***Standard Products Group.*** Net sales from our Standard Products Group segment were $425.4 million for the year ended December 31, 2018, a $96.3 million, or 29.3%, increase compared to $329.1 million for the year ended December 31, 2017. This increase was primarily attributable to an increase in revenue related to an improvement in mobile OLED display driver ICs due to the introduction of new OLED smartphones by Chinese manufacturers and higher demand for premium power products such as high-end MOSFETs and IGBTs primarily for TV and industrial applications. This increase was offset in part by a strategic reduction of our lower margin LCD business.

***All Other.*** All other net sales remained constant at $0.2 million for each of the years ended December 31, 2018 and 2017.

***Gross Profit***

Total gross profit was $198.1 million for the year ended December 31, 2018 compared to $187.9 million for the year ended December 31, 2017, a $10.2 million, or 5.4%, increase. Gross profit as a percentage of net sales for the year ended December 31, 2018 decreased to 26.4% compared to 27.6% for the year ended December 31, 2017, primarily due to a decrease in gross profit as a percentage of net sales from our Foundry Services Group, which was offset in part by an increase in gross profits as a percentage of net sales from our Standard Products Group.

***Foundry Services Group.*** Gross profit from our Foundry Services Group segment was $82.6 million for the year ended December 31, 2018, a $19.2 million, or 18.9%, decrease compared to $101.8 million for the year ended December 31, 2017. Gross profit as a percentage of net sales for the year ended December 31, 2018 decreased to 25.4% compared to 29.0% for the year ended December 31, 2017. The decrease in gross profit as a percentage of net sales was mainly attributable to a lower utilization rate, which was affected in part by a softening global market conditions, including macroeconomic uncertainties, and a strategic reduction of low margin LCD business. This decrease was also attributable to an unfavorable product mix and an increase in raw wafer prices.

***Standard Products Group.*** Gross profit from our Standard Products Group segment was $115.5 million for the year ended December 31, 2018, a $29.6 million, or 34.4%, increase from $85.9 million for the year ended December 31, 2017. Gross profit as a percentage of net sales for the year ended December 31, 2018 increased to 27.1% compared to 26.1% for the year ended December 31, 2017. The increase in both gross profit and gross profit margin was primarily attributable to a favorable product mix from an increase in sales of mobile OLED display driver ICs.

***All Other.*** All other gross profit was $0.04 million for the year ended December 31, 2018 and $0.2 million for the year ended December 31, 2017.

### *Net Sales by Geographic Region*

We report net sales by geographic region based on the location to which the products are billed. The following table sets forth our net sales by geographic region and the percentage of total net sales represented by each geographic region for the years ended December 31, 2018 and 2017:

| | Year Ended December 31, 2018 | | Year Ended December 31, 2017 | | |
|---|---|---|---|---|---|
| | Amount | % of Net Sales | Amount | % of Net Sales | Change Amount |
| | | | (In millions) | | |
| Korea | $282.5 | 37.6% | $279.9 | 41.2% | $ 2.6 |
| Asia Pacific (other than Korea) | 380.6 | 50.7 | 322.6 | 47.5 | 58.0 |
| United States | 37.5 | 5.0 | 35.1 | 5.2 | 2.4 |
| Europe | 47.8 | 6.4 | 41.1 | 6.0 | 6.7 |
| Others | 2.5 | 0.3 | 1.0 | 0.1 | 1.5 |
| | $750.9 | 100.0% | $679.7 | 100.0% | $ 71.2 |

Net sales in Korea for the year ended December 31, 2018 increased from $279.9 million to $282.5 million compared to the year ended December 31, 2017, or by $2.6 million, or 0.9%, primarily due to higher sales of premium power product and an increase in revenue related to the introduction of new OLED display driver ICs, which was offset in part by a strategic reduction of low margin LCD business.

Net sales in the Asia Pacific for the year ended December 31, 2018 increased from $322.6 million to $380.6 million compared to the year ended December 31, 2017, or by $58.0 million, or 18.0%, primarily due to an increase in revenue related to increased sales to mobile OLED display driver ICs in connection with the introduction of new OLED smartphones. This increase was in part offset by a decrease in sales of certain products from a foundry customer serving the low- to mid-range mobile phone market, and a decrease in sales of certain low margin products from a global power management IC foundry customer.

Net sales in the United States for the year ended December 31, 2018 increased from $35.1 million to $37.5 million compared to the year ended December 31, 2017, or by $2.4 million, or 6.8%, primarily due to an increase in sales of certain products from a global power management IC foundry customer.

Net sales in Europe for the year ended December 31, 2018 increased from $41.1 million to $47.8 million compared to the year ended December 31, 2017, or by $6.7 million, or 16.4%, primarily due to an increase in sales of certain battery charger related products from a global power management IC foundry customer, which was offset in part by lower demand from a customer serving the high-end smartphone market.

### *Operating Expenses*

***Selling, General and Administrative Expenses.*** Selling, general and administrative expenses were $72.6 million, or 9.7% of net sales for the year ended December 31, 2018, compared to $81.8 million, or 12.0%

of net sales for the year ended December 31, 2017. The decrease of $9.1 million, or 11.2%, was primarily attributable to a $6.7 million decrease in professional fees, which were mainly comprised of legal and consulting services and a $4.2 million charge related to an additional tax assessment and associated penalties and an administrative fine as a result of the tax audit conducted by the KNTS which concluded in the fourth quarter of 2017. These decreases were offset in part by an increase in employee compensation, including issuance of equity-based compensation.

***Research and Development Expenses.*** Research and development expenses were $78.0 million, or 10.4%, of net sales for the year ended December 31, 2018, compared to $70.5 million, or 10.4%, of net sales for the year ended December 31, 2017. The increase of $7.5 million, or 10.7%, was primarily attributable to an increase in development activities for new OLED products.

***Restructuring and Other Gains.*** Restructuring and other gain of $17.0 million recorded for the year ended December 31, 2017 resulted from a $16.6 million restructuring gain on the sale of the building related to the closure of our 6-inch fab and a $0.4 million gain on sale of our sensor business.

***Early Termination Charges.*** Early termination charges of $13.4 million for the year ended December 31, 2017 were recorded for the termination benefits payable to the employees affected under our Headcount Reduction Plan.

### *Operating Income*

As a result of the foregoing, operating income increased by an $8.2 million in the year ended December 31, 2018 compared to the year ended December 31, 2017. As discussed above, the increase in operating income resulted from a $10.2 million increase in gross profit, a $9.1 million decrease in selling, general and administrative expenses and a $13.4 million decrease in early termination charges, which were partially offset by a $17.0 million decrease in restructuring and other gain and a $7.5 million increase in research development expenses.

### *Other Income (Expense)*

***Interest Expense.*** Interest expenses were $22.3 million and $21.6 million for the year ended December 31, 2018 and December 31, 2017, respectively.

***Foreign Currency Gain (Loss), Net.*** Net foreign currency loss for the year ended December 31, 2018 was $24.4 million compared to net foreign currency gain of $65.5 million for the year ended December 31, 2017. The net foreign currency loss for the year ended December 31, 2018 was due to the depreciation in value of the Korean won relative to the US dollar during the period. The net foreign currency gain for the year ended December 31, 2017 was due to the appreciation in value of the Korean won relative to the US dollar during the period.

A substantial portion of our net foreign currency gain or loss is non-cash translation gain or loss associated with the intercompany long-term loans to our Korean subsidiary, which is denominated in US dollars, and is affected by changes in the exchange rate between the Korean won and the US dollar. As of December 31, 2018, the outstanding intercompany loan balance including accrued interest between our Korean subsidiary and our Dutch subsidiary was $666.6 million. Foreign currency translation gain or loss from intercompany balances was included in determining our consolidated net income since the intercompany balances were not considered long-term investments in nature because management intended to settle these intercompany balances at their respective maturity dates.

***Loss on Early Extinguishment of Long-Term Borrowings, Net.*** In December 2018, we repurchased a principal amount of $0.5 million and $1.6 million of the 2021 Notes and the Exchangeable Notes, respectively. In connection with these repurchases, we recognized a $0.2 million of net loss for the year ended December 31, 2018.

***Others, Net.*** Others were comprised of gains and losses on the valuation of derivatives which were designated as hedging instruments, rental income and interest income. Others for the year ended December 31, 2018 and December 31, 2017 were $0.3 million and $2.9 million, respectively.

### *Income Tax Expenses*

We are subject to income taxes in the United States and many foreign jurisdictions and our effective tax rate is affected by changes in the mix of earnings between countries with differing tax rates. Our primary foreign operations are in Korea where the statutory tax rate applicable to us was approximately 24.2% in each of 2018 and 2017. Statutory tax rates for our foreign subsidiaries except those in Luxembourg, Netherlands and Korea, were less than the US federal statutory rate of 21.0%.

We recorded income tax expenses of $4.6 million and $1.2 million for the years ended December 31, 2018 and 2017, respectively. The increase in income tax expenses for the year ended December 31, 2018 was primarily attributable to taxable income generated by our Korean subsidiary combined with its ability to utilize net operating carryforwards up to 70% of the taxable income, and a decrease in our uncertain tax positions that resulted in a reduction of income tax expense for the year ended December 31, 2017. Our effective tax rate was 620.6% for the year ended December 31, 2018, as compared to 1.3% for the year ended December 31, 2017.

We make an ongoing assessment regarding the realization of US and non-US deferred tax assets. The valuation allowances at December 31, 2018 and 2017 were primarily attributable to deferred tax assets for the uncertainty in taxable income at our Korean subsidiary for which we have recorded a full valuation allowance against the deferred tax assets, net of its deferred tax liabilities, and against certain of our foreign subsidiaries' deferred tax assets pertaining to their related tax loss carry-forwards and tax credits that are not anticipated to generate a tax benefit.

### *Net Income (Loss)*

As a result of the foregoing, net income decreased by $88.8 million in the year ended December 31, 2018 compared to the year ended December 31, 2017. As discussed above, the decrease primarily resulted from a $90.0 million increase in foreign currency loss and a $3.5 million increase in income tax expenses, which was partially offset by an $8.2 million increase in operating income.

## Liquidity and Capital Resources

Our principal capital requirements are to fund sales and marketing, invest in research and development and capital equipment, to make debt service payments and to fund working capital needs. We calculate working capital as current assets less current liabilities.

Our principal sources of liquidity are our cash, cash equivalents, our cash flows from operations and our financing activities. Our ability to manage cash and cash equivalents may be limited, as our primary cash flows are dictated by the terms of our sales and supply agreements, contractual obligations, debt instruments and legal and regulatory requirements. From time to time, we may sell accounts receivable to third parties under factoring agreements or engage in accounts receivable discounting to facilitate the collection of cash. For a description of our factoring arrangements and accounts receivable discounting, please see "Item 8. Financial Statements and Supplementary Data—Notes to Consolidated Financial Statements—Note 3. Accounts Receivable" included elsewhere in this Report. In addition, from time to time, we may make payments to our vendors on extended terms with their consent. As of December 31, 2019, we do not have any accounts payable on extended terms or payment deferment with our vendors.

We currently believe that we will have sufficient cash reserves from cash on hand and expected cash from operations to fund our operations as well as capital expenditures for the next twelve months and the foreseeable future.

As of December 31, 2019, cash and cash equivalents held by our Korean subsidiary were $147.8 million, which represents 97% of our total cash and cash equivalents of $151.7 million on a consolidated basis. We, as a holding company resident in the United States, issued our 2021 Notes. Payments under our outstanding 2021 Notes are currently funded in part by our Korean subsidiary's repayment of its existing loans from our Dutch subsidiary, with our Dutch subsidiary using such repayments in turn to repay the loans owed to us or to our Luxembourg subsidiary, which repays loans owed to us. Our Exchangeable Notes were issued by our Luxembourg subsidiary, and the proceeds from the Exchangeable Notes Offering, were transferred to our Dutch and Korean subsidiaries through intercompany loans. Therefore, we expect payments under the Exchangeable Notes to be funded in part by our Korean subsidiary's repayment of its existing or new loans from our Dutch subsidiary, with our Dutch subsidiary using such repayments in turn to repay loans owed to our Luxembourg subsidiary.

We may, from time to time, repurchase a portion of our outstanding 2021 Notes and our Exchangeable Notes through open market purchases or privately negotiated transactions subject to prevailing market conditions and our available cash reserves.

*Year ended December 31, 2019 compared to year ended December 31, 2018*

As of December 31, 2019, our cash and cash equivalents balance was $151.7 million, a $19.2 million increase, compared to $132.4 million as of December 31, 2018. The increase resulted from a $50.5 million of cash inflow provided by operating activities, which was partially offset by a $28.9 million cash outflow used in investing activities and a $1.8 million of cash outflow used in financing activities.

Cash inflow provided by operating activities totaled $50.5 million for the year ended December 31, 2019, compared to $39.2 million of cash inflow provided by operating activities for the year ended December 31, 2018. The net operating cash inflow for the year ended December 31, 2019 reflects our net loss of $21.8 million, as adjusted favorably by $87.7 million, which mainly consisted of depreciation and amortization, provision for severance benefits and net foreign currency loss, and net unfavorable impact of $15.4 million from changes of operating assets and liabilities.

Our working capital balance as of December 31, 2019 was $245.5 million compared to $220.1 million as of December 31, 2018. The $25.4 million increase was primarily attributable to a $19.2 million increase in cash and cash equivalents, a $15.6 million increase in accounts receivable, net, a $5.1 million decrease in deferred revenue and a $4.0 million increase in hedge collateral, which was offset in part by a $21.1 million decrease in unbilled accounts receivable, net.

Cash outflow used in investing activities totaled $28.9 million for the year ended December 31, 2019, compared to $33.3 million for the year ended December 31, 2018. The $4.4 million decrease in investing activities was attributable to a $10.3 million decrease in purchase of plant, property and equipment, including a $4.3 million payment for the purchase of certain facilities related to a water treatment facility arrangement in 2018. This decrease was offset in part by a $5.7 million net increase in hedge collateral.

Cash outflow used in financing activities totaled $1.8 million for the year ended December 31, 2019, compared to $1.3 million of cash inflow provided by financing activities for the year ended December 31, 2018. The financing cash outflow for the year ended December 31, 2019 was primarily attributable to a payment of $1.2 million for the repurchase of 2021 Notes and Exchangeable Notes in the first quarter of 2019 and a payment of $2.4 million for the repurchase of our common stock in January 2019 pursuant to our stock repurchase plan, which was offset in part by $2.9 million of proceeds received from the issuance of common stock in connection with the exercise of stock options. The financing cash inflow for the year ended December 31, 2018 was primarily attributable to proceeds of $4.3 million in connection with the water treatment facility arrangement and $1.1 million of proceeds received from the issuance of common stock in connection with the exercise of stock options, which was offset in part by a payment of $2.2 million for the repurchases of 2021 Notes and

Exchangeable Notes in December 2018 and $1.6 million for the repurchase of our common stock in December 2018 pursuant to our stock repurchase plan.

We routinely make capital expenditures for fabrication facility maintenance, enhancement of our existing facilities and reinforcement of our global research and development capabilities. For the year ended December 31, 2019, capital expenditures for plant, property and equipment were $23.0 million, a $10.3 million, or 30.9%, decrease from $33.2 million, including a $4.3 million payment for the purchase of certain facilities related to a water treatment facility arrangement, for the year ended December 31, 2018. The capital expenditures for the year ended December 31, 2019 were related to meeting our customer demand and supporting technology and facility improvements at our fabrication facilities.

*Year ended December 31, 2018 compared to year ended December 31, 2017*

As of December 31, 2018, our cash and cash equivalents balance was $132.4 million, a $3.9 million increase, compared to $128.6 million as of December 31, 2017. The increase resulted from a $39.2 million of cash inflow provided by operating activities and a $1.3 million of cash inflow provided by financing activities, which was partially offset by a $33.3 million of cash outflow used in investing activities.

Cash inflow provided by operating activities totaled $39.2 million for the year ended December 31, 2018, compared to $20.3 million of cash outflow used in operating activities for the year ended December 31, 2017. The net operating cash inflow for the year ended December 31, 2018 reflects our net loss of $3.9 million, as adjusted favorably by $86.3 million, which mainly consisted of depreciation and amortization, provision for severance benefits and net foreign currency loss, and net unfavorable impact of $43.1 million from changes of operating assets and liabilities.

Our working capital balance as of December 31, 2018 was $220.1 million compared to $192.1 million as of December 31, 2017. The $28.0 million increase was primarily attributable to a $38.2 million increase in unbilled accounts receivable, which was a new item created in our balance sheet beginning January 1, 2018 to conform with the new revenue recognition standard and represented our contractual right to consideration for manufacturing work performed on a customer contract or an individual purchase order basis, which had not been invoiced to the customer. This increase was offset in part by a $12.0 million decrease in account receivables.

Cash outflow used in investing activities totaled $33.3 million for the year ended December 31, 2018, compared to $35.4 million for the year ended December 31, 2017. The $2.1 million decrease in investing activities was attributable to a $5.7 million net decrease in hedge collateral, which was partially offset by a $3.6 million net increase in guarantee deposits.

Cash inflow generated by financing activities totaled $1.3 million for the year ended December 31, 2018, compared to $72.7 million for the year ended December 31, 2017. The financing cash inflow for the year ended December 31, 2018 was primarily attributable to proceeds of $4.3 million in connection with the water treatment facility arrangement and $1.1 million of proceeds received from the issuance of common stock in connection with the exercise of stock options, which was offset in part by the payment of $2.2 million for the repurchases of 2021 Notes and Exchangeable Notes in December 2018 and $1.6 million for the repurchase of our common stock in December 2018 pursuant to our stock repurchase plan. The financing cash inflow for the year ended December 31, 2017 consisted of $80.3 million of net proceeds received from the issuance of the Exchangeable Notes and $3.7 million of proceeds received from the exercise of stock options, which was partly offset by the payment of $11.4 million for the repurchase of 1,795,444 shares of our common stock in January 2017 pursuant to our stock repurchase plan.

We routinely make capital expenditures for fabrication facility maintenance, enhancement of our existing facilities and reinforcement of our global research and development capability. For the year ended December 31, 2018, capital expenditures for plant, property and equipment were $33.2 million, a $0.6 million, or 1.7%, increase from $32.7 million for the year ended December 31, 2017. The capital expenditures for the year ended December 31, 2018 included a $4.3 million payment for the purchase of the water treatment facility. The remaining expenditures were related to meeting our customer demand, and supporting technology and facility improvements at our fabrication facilities.

**Contractual Obligations**

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

| | Payments Due by Period | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | 2020 | 2021 | 2022 | 2023 | 2024 | Thereafter |
| | (In millions) | | | | | | |
| Exchangeable Notes(1) | $ 90.0 | $ 4.2 | $ 85.8 | $ — | $ — | $ — | $ — |
| Senior Notes(2) | 254.0 | 14.9 | 239.1 | — | — | — | — |
| Operating leases(3) | 18.1 | 2.8 | 1.3 | 1.1 | 1.1 | 1.1 | 10.6 |
| Finance leases(3) | 3.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.1 | 1.5 |
| Water Treatment Services(3)(4) | 47.3 | 8.4 | 8.3 | 8.3 | 5.7 | 3.8 | 12.9 |
| Others(5) | 17.3 | 11.8 | 4.9 | 0.3 | 0.1 | 0.0 | 0.1 |

(1) Interest payments as well as $83.7 million aggregate principal amount of the Exchangeable Notes outstanding as of December 31, 2019, which bear interest at a rate of 5.0% per annum and are scheduled to mature in 2021 if not earlier exchanged at the price of approximately $8.26 per share of common stock.
(2) Interest payments as well as $224.3 million aggregate principal amount of the 2021 Notes outstanding as of December 31, 2019, which bear interest at a rate of 6.625% per annum and are scheduled to mature in 2021 if not earlier redeemed.
(3) Assumes constant currency exchange rate for Korean won to US dollars of 1,157.8:1, the exchange rate as of December 31, 2019.
(4) Includes future payments for water treatment services for our fabrication facilities in Korea based on the contractual terms.
(5) Includes license agreements, funding obligations for the accrued severance benefits and other contractual obligations.

The indentures relating to the Exchangeable Notes and the 2021 Notes contain covenants as detailed in “Item 8. Financial Statements and Supplementary Data—Notes to Consolidated Financial Statements—Note 11. Long-Term Borrowings” in this Report. Those covenants are subject to a number of exceptions and qualifications. Certain of those restrictive covenants will terminate if the Exchangeable Notes or the 2021 Notes are rated investment grade at any time.

We lease land, office space and equipment under various operating lease agreements that expire through 2034.

We are a party to arrangements for the water treatment facilities in Cheongju and Gumi, Korea, which include 5-year and 10-year service agreements, respectively.

Beginning in July 2018, we have contributed a certain percentage of severance benefits, accrued for eligible employees for their services beginning January 1, 2018, to certain severance insurance deposit accounts. These accounts consist of time deposits and other guaranteed principal and interest, and are maintained at insurance companies, banks or security companies for the benefit of employees. We deduct the contributions made to these severance insurance deposit accounts from our accrued severance benefits. As of December 31, 2019, our accrued severance benefits totaled $146.7 million and cumulative contributions to these severance insurance deposit accounts amounted to $4.8 million. Our related cash payments for future contributions are $3.5 million for 2020, to the extent that our obligations are contractual, fixed and reasonably estimable.

We follow US GAAP guidance on uncertain tax positions. Our unrecognized tax benefits totaled $0.4 million as of December 31, 2019. These unrecognized tax benefits have been excluded from the above table because we cannot estimate the period of cash settlement with the respective taxing authorities.

**Off-Balance Sheet Arrangements**

As of December 31, 2019, we did not have any off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of Regulation S-K.

**Critical Accounting Policies and Estimates**

Preparing financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities as of the date of the financial statements, the reported amounts of revenues and expenses during the reporting periods and the related disclosures in our consolidated financial statements and accompanying notes.

We believe that the accounting policies discussed below are critical due to the fact that they involve a high degree of judgment and estimates about the effects of matters that are inherently uncertain. We base these estimates and judgments on historical experience, knowledge of current conditions and other assumptions and information that we believe to be reasonable. Estimates and assumptions about future events and their effects cannot be determined with certainty. Accordingly, these estimates may change as new events occur, as more experience is acquired, as additional information is obtained and as the business environment in which we operate changes.

***Revenue Recognition***

We recognize revenue when it satisfies the performance obligation of transferring control over a product or service to a customer. Revenue is measured based on the consideration specified in a contract with a customer, which consideration is paid in exchange for a product or service.

Our Foundry Services Group manufactures products, which we refer to as foundry products, based on customers' specific product designs. We recognize revenue over time for foundry products that do not have an alternative use when we have an enforceable right to payment. Revenue recognized over time is in proportion of wafer manufacturing costs incurred relative to total estimated costs for completion. However, in certain circumstances, pursuant to a customer contract or an individual purchase order, we may not have an enforceable right to payment for services performed at a given time. In this situation, we recognize revenue at the time when a customer obtains control of the product, which is generally upon product shipment, delivery at the customer's location or upon customer acceptance, depending on the terms of the arrangement.

Our Standards Products Group sells products manufactured based on our design. Our products are either standardized with an alternative use or we do not have an enforceable right to payment for the related manufacturing services completed to date. Therefore, revenue for our Standards Products Group is recognized when a customer obtains control of the product, which is generally upon product shipment, delivery at the customer's location or upon customer acceptance, depending on the terms of the arrangement.

A portion of our sales are made through distributors for which we apply the same revenue recognition guidance described above. We defer the recognition of revenue when a distributor receives consideration from the customers prior to the performance obligation being fulfilled. These amounts are classified as deferred revenue on the consolidated balance sheets.

In accordance with revenue recognition guidance, any tax assessed by a governmental authority that is (i) both imposed on and concurrent with a specific revenue-producing transaction, and (ii) collected by us from a customer, is excluded from revenue and related revenue is presented in the statements of operations on a net basis.

We provide warranty provisions under which customers can return defective products. We also provide allowances for additional products that may have to be provided free of charge to compensate customers for not meeting previously agreed upon yield criteria, which we refer to as the low yield compensation reserve. We estimate the costs related to warranty claims, repair or replacements and low yield compensation reserves, and record them as components of cost of sales.

In addition, we offer sales returns (other than those that relate to defective products under warranty), cash discounts for early payments, sales incentives including discounts and volume rebates, and certain allowances to our customers, including our distributors. We record reserves for those returns, discounts, incentives and allowances as a deduction from sales based on historical experience and other quantitative and qualitative factors.

Substantially all of our contracts are one year or less in duration. The standard payment terms with customers are generally thirty to sixty days from the time of shipment, product delivery to the customer's location or customer acceptance, depending on the terms of the related arrangement.

***Leases***

We determine if an arrangement is a lease at inception of a contract by considering whether the arrangement conveys the right to control the use of an identified asset over the period of use. Control of an underlying asset is conveyed if we have the right to direct the use of, and to obtain substantially all of the economic benefits from the use of, the identified asset. We account for lease transactions as either an operating or a finance lease, depending on the terms of the underlying lease arrangement. Assets related to operating leases are recorded on the balance sheet as operating lease right-of-use assets; the related liabilities are recorded as operating lease liabilities for the current portion and non-current operating lease liabilities for the non-current portion. Finance lease right-of-use assets are included in property and equipment, net and the related lease liabilities are included in other current liabilities and other non-current liabilities on the consolidated balance sheets.

Right-of-use assets represent our right to use an underlying asset during the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Right-of-use assets and liabilities are recognized based on the present value of the future minimum lease payments over the lease term. As most of our leases do not provide a readily determinable implicit rate, we estimate our incremental borrowing rates in determining the present value of future payments based on the lease term of each lease and market information available at commencement date. Finance lease right-of-use assets are amortized on a straight-line basis over the respective lease term with the interest expense on the lease liability recorded using the interest method. The amortization and interest expense are recorded separately in the consolidated statements of operations. Amortization of operating lease right-of-use assets and interest expense on operating lease liabilities are recognized on a straight-line basis over the respective lease term.

An extension or contraction of a lease term is considered if the related option to extend or early terminate the lease is reasonably certain to be exercised by us. Operating lease right-of-use assets may also include any advance lease payments made and exclude lease incentives and initial direct costs incurred. We have lease agreements with lease and non-lease components, which are generally accounted for separately. For certain equipment leases, lease and non-lease components are accounted for as a single lease component.

Variable lease payment amounts that cannot be determined at the commencement of the lease, such as increases in lease payments based on changes in index rates, are not included in the right-of-use assets or liabilities. These variable lease payments are expensed as incurred.

We do not recognize operating lease right-of-use assets and operating lease liabilities that arise from short-term leases but rather recognize fixed lease payments in the statements of operations on a straight-line basis and variable payments in the period in which the related obligations incur.

***Sales of Accounts Receivable***

We account for transfers of financial assets under ASC 860, “Transfers and Servicing,” as either sales or financings. Transfers of financial assets that result in sales accounting are those in which (1) the transfer legally isolates the transferred assets from the transferor, (2) the transferee has the right to pledge or exchange the transferred assets and no condition both constrains the transferee’s right to pledge or exchange the assets and provides more than a trivial benefit to the transferor and (3) the transferor does not maintain effective control over the transferred assets. If the transfer does not meet these criteria, the transfer is accounted for as a financing. Financial assets that are treated as sales are removed from our accounts with any realized gain or loss reflected in earnings during the period of sale.

***Product Warranties***

We record, in other current liabilities, warranty liabilities for the estimated costs that may be incurred under our basic limited warranty. The standard limited warranty period is one to two years for the majority of products. This warranty covers defective products, and related liabilities are accrued when product revenues are recognized. Factors that affect our warranty liabilities include historical and anticipated rates of warranty claims and repair or replacement costs per claim to satisfy our warranty obligation. We also record, in other current liabilities, low yield compensation reserves for our estimated costs for products that may have to be provided free of charge to compensate customers for not meeting previously agreed upon yield criteria. Factors that affect our low yield compensation reserves include historical and anticipated rates of claims for not meeting previously agreed upon yield criteria. We periodically assess the adequacy of our recorded warranty liabilities and low yield compensation reserves, and adjust our estimates when necessary.

***Inventories***

Inventories are stated at the lower of cost or net realizable value, using the first in, first out method (“FIFO”). If net realizable value is less than cost at the balance sheet date, the carrying amount is reduced to the realizable value, and the difference is recognized as a loss on valuation of inventories within cost of sales. Inventory reserves are established when conditions indicate that the net realizable value is less than costs due to physical deterioration, obsolescence, changes in price levels, or other causes based on individual facts and circumstances. We evaluate the sufficiency of inventory reserves and take into consideration historical usage, expected demand, anticipated sales price, new product development schedules, the effect new products might have on the sale of existing products, product age and other factors. Reserves are also established for excess inventory based on our current inventory levels and projected demand and our ability to sell those specific products. Situations that could cause these inventory reserves include a decline in business and economic conditions, decline in consumer confidence caused by changes in market conditions, sudden and significant decline in demand for our products, inventory obsolescence because of rapidly changing technology and consumer requirements, or failure to estimate end customer demand properly. A reduction of these inventory reserves may be recorded if previously reserved items are subsequently sold as a result of unexpected changes to certain aforementioned situations.

The gross amount of inventory reserves charged to cost of sales totaled $13.9 million, $8.3 million and $7.0 million in the fiscal years ended December 31, 2019, 2018 and 2017, respectively. The new cost base related to the sale of inventory that was previously written down totaled $3.1 million, $4.1 million and $6.0 million in the fiscal years ended December 31, 2019, 2018 and 2017, respectively.

As prescribed in ASC 330, “Inventory,” once a reserve is established for a particular item based on our assessment as described above, it is maintained until the related item is sold or scrapped as a new cost basis has been established that cannot subsequently be marked up. In addition, the cost of inventories is determined based on the normal capacity of each fabrication facility. In case the capacity utilization is lower than a certain level that management believes to be normal, the fixed overhead costs per production unit which exceed those under normal capacity are charged to cost of sales rather than capitalized as inventories.

***Impairment of Long-Lived Assets***

We review property, plant and equipment and other long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable in accordance with ASC 360, "Property, Plant and Equipment". Recoverability is measured by comparing its carrying amount with the future net undiscounted cash flows the assets are expected to generate. If such assets are considered to be impaired, the impairment is measured as the difference between the carrying amount of the assets and the fair value of assets using the present value of the future net cash flows generated by the respective long-lived assets.

***Intangible Assets***

Intangible assets other than intellectual property include technology and customer relationships which are amortized on a straight-line basis over periods ranging from one to five years. Intellectual property assets acquired represent rights under patents, trademarks and property use rights and are amortized over their respective periods of benefit, ranging up to ten years, on a straight-line basis.

***Income Taxes***

We account for income taxes in accordance with ASC 740, "Income Taxes" ("ASC 740"). ASC 740 requires recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in a company's financial statements or tax returns. Under this method, deferred tax assets and liabilities are determined based upon the difference between the financial statement carrying amounts and the tax bases of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. Valuation allowances are established when it is necessary to reduce deferred tax assets to the amount expected to be realized. Income tax expense is the tax payable for the period and the change during the period in deferred tax assets and liabilities.

We recognize and measure uncertain tax positions taken or expected to be taken in a tax return utilizing a two-step process. In the first step, recognition, we determine whether it is more-likely-than-not that a tax position will be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The second step addresses measurement of a tax position that meets the more-likely-than-not criteria. The tax position is measured at the largest amount of benefit that has a likelihood of greater than 50 percent of being realized upon ultimate settlement.

***Derivative Financial Instruments***

We apply the provisions of ASC 815, which requires the recognition of all derivative instruments as either assets or liabilities measured at fair value.

Under the provisions of ASC 815, we may designate a derivative instrument as hedging the exposure to variability in expected future cash flows that are attributable to a particular risk (a "cash flow hedge") or hedging the exposure to changes in the fair value of an asset or a liability (a "fair value hedge"). Special accounting for qualifying hedges allows the effective portion of a derivative instrument's gains and losses to offset related results on the hedged item in the consolidated statements of operations and requires that a company formally document, designate and assess the effectiveness of the transactions that receive hedge accounting treatment. Both at the inception of a hedge and on an ongoing basis, a hedge must be expected to be highly effective in achieving offsetting changes in cash flows or fair value attributable to the underlying risk being hedged. If we determine that a derivative instrument is no longer highly effective as a hedge, it discontinues hedge accounting prospectively and future changes in the fair value of the derivative are recognized in current earnings. We assess hedge effectiveness at the end of each quarter.

In accordance with ASC 815, changes in the fair value of derivative instruments that are cash flow hedges are recognized in accumulated other comprehensive income (loss) and reclassified into earnings in the period in which the hedged item affects earnings. Derivative instruments that do not qualify, or cease to qualify, as hedges must be adjusted to fair value and the adjustments are recorded through net income (loss).

The cash flows from derivative instruments receiving hedge accounting treatment are classified in the same categories as the hedged items in the consolidated statements of cash flows.

### Recent Accounting Pronouncements

See Note 1 "Business, Basis of Presentation and Summary of Significant Accounting Policies" in the Notes to the Consolidated Financial Statements in Item 8 of Part II of this Report, for a full description of recent accounting pronouncements, including the expected dates of adoption, which is incorporated herein by reference.

## Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to the market risk that the value of a financial instrument will fluctuate due to changes in market conditions, primarily from changes in foreign currency exchange rates and interest rates. In the normal course of our business, we are subject to market risks associated with interest rate movements and currency movements on our assets and liabilities.

### Foreign Currency Exposures

We have exposure to foreign currency exchange rate fluctuations on net income from our subsidiaries denominated in currencies other than US dollars, as our foreign subsidiaries in Korea, Taiwan, China, Japan and Hong Kong use local currency as their functional currency. From time to time these subsidiaries have cash and financial instruments in local currency. The amounts held in Japan, Taiwan, Hong Kong and China are not material in regards to foreign currency movements. However, based on the cash and financial instruments balance at December 31, 2019 for our Korean subsidiary, a 10% devaluation of the Korean won against the US dollar would have resulted in a decrease of $0.3 million in our US dollar financial instruments and cash balances.

See "Note 9. Derivative Financial Instruments" to our consolidated financial statements under "Item 8. Financial Statements and Supplementary Data" and "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Factors Affecting Our Results of Operations—Impact of Foreign Currency Exchange Rates on Reported Results of Operations" for additional information regarding our foreign exchange hedging activities.

### Interest Rate Exposures

As of December 31, 2019, $83.7 million aggregate principal amount of our Exchangeable Notes were outstanding. Interest on the Exchangeable Notes accrues at a fixed rate of 5.0% per annum and is paid semi-annually every March 1 and September 1 of each year until the Exchangeable Notes mature on March 1, 2021. As of December 31, 2019, $224.3 million aggregate principal amount of our 2021 Notes were also outstanding. Interest on the 2021 Notes accrues at a fixed rate of 6.625% per annum and is paid semi-annually every January 15 and July 15 of each year until the 2021 Notes mature on July 15, 2021. Since the interest rates are fixed, we have no market risk related to the Exchangeable Notes and the 2021 Notes.

**Item 8. Financial Statements and Supplementary Data**

## INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

## Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
MagnaChip Semiconductor Corporation

### *Opinions on the Financial Statements and Internal Control over Financial Reporting*

We have audited the accompanying consolidated balance sheets of MagnaChip Semiconductor Corporation and its subsidiaries (the "Company") as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive income / (loss), changes in 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 revenue 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.

/s/ Samil PricewaterhouseCoopers

Seoul, Korea

February 21, 2020

We have served as the Company’s auditor since 2004.

## MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES

## CONSOLIDATED BALANCE SHEETS

| | December 31, 2019 | December 31, 2018 |
|---|---|---|
| | (In thousands of US dollars, except share data) | |
| **Assets** | | |
| Current assets | | |
| Cash and cash equivalents | $ 151,657 | $ 132,438 |
| Accounts receivable, net | 95,641 | 80,003 |
| Unbilled accounts receivable, net | 17,094 | 38,181 |
| Inventories, net | 73,267 | 71,611 |
| Other receivables | 10,254 | 3,702 |
| Prepaid expenses | 12,250 | 11,133 |
| Hedge collateral (Note 9) | 9,820 | 5,810 |
| Other current assets (Notes 1 and 2) | 9,382 | 9,867 |
| Total current assets | 379,365 | 352,745 |
| Property, plant and equipment, net (Notes 5 and 7) | 182,574 | 202,171 |
| Operating lease right-of-use assets | 11,482 | — |
| Intangible assets, net | 4,014 | 3,953 |
| Long-term prepaid expenses | 8,834 | 15,598 |
| Other non-current assets | 9,059 | 8,729 |
| Total assets | $ 595,328 | $ 583,196 |
| **Liabilities and Stockholders' Equity** | | |
| Current liabilities | | |
| Accounts payable | $ 60,879 | $ 55,631 |
| Other accounts payable | 10,293 | 15,168 |
| Accrued expenses | 55,076 | 46,250 |
| Deferred revenue (Note 1) | 1,422 | 6,477 |
| Operating lease liabilities | 2,036 | — |
| Other current liabilities (Note 1) | 4,127 | 9,133 |
| Total current liabilities | 133,833 | 132,659 |
| Long-term borrowings, net | 304,743 | 303,577 |
| Non-current operating lease liabilities | 9,446 | — |
| Accrued severance benefits, net | 146,728 | 146,031 |
| Other non-current liabilities | 15,559 | 18,239 |
| Total liabilities | 610,309 | 600,506 |
| Commitments and contingencies (Note 19) | | |
| Stockholders' equity | | |
| Common stock, $0.01 par value, 150,000,000 shares authorized, 43,851,991 shares issued and 34,800,312 outstanding at December 31, 2019 and 43,054,458 shares issued and 34,441,232 outstanding at December 31, 2018 | 439 | 431 |
| Additional paid-in capital | 152,404 | 142,600 |
| Accumulated deficit | (58,131) | (36,305) |
| Treasury stock, 9,051,679 shares at December 31, 2019 and 8,613,226 shares at December 31, 2018, respectively | (107,033) | (103,926) |
| Accumulated other comprehensive loss | (2,660) | (20,110) |
| Total stockholders' deficit | (14,981) | (17,310) |
| Total liabilities and stockholders' equity | $ 595,328 | $ 583,196 |

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

## MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF OPERATIONS

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| | (In thousands of US dollars, except share data) | | |
| Net sales | $ 792,195 | $ 750,898 | $ 679,672 |
| Cost of sales | 611,584 | 552,802 | 491,779 |
| Gross profit | 180,611 | 198,096 | 187,893 |
| Operating expenses | | | |
| Selling, general and administrative expenses | 71,637 | 72,639 | 81,775 |
| Research and development expenses | 75,356 | 78,039 | 70,523 |
| Restructuring and other charges (gains) | 9,195 | — | (17,010) |
| Early termination charges | — | — | 13,369 |
| Total operating expenses | 156,188 | 150,678 | 148,657 |
| Operating income | 24,423 | 47,418 | 39,236 |
| Interest expense | (22,627) | (22,282) | (21,559) |
| Foreign currency gain (loss), net | (21,813) | (24,445) | 65,516 |
| Loss on early extinguishment of long-term borrowings, net | (42) | (206) | — |
| Other income, net | 2,980 | 264 | 2,898 |
| Income (loss) before income tax expense | (17,079) | 749 | 86,091 |
| Income tax expense | 4,747 | 4,649 | 1,155 |
| Net income (loss) | $ (21,826) | $ (3,900) | $ 84,936 |
| Earnings (loss) per common share— | | | |
| Basic | $ (0.64) | $ (0.11) | $ 2.50 |
| Diluted | $ (0.64) | $ (0.11) | $ 2.02 |
| Weighted average number of shares— | | | |
| Basic | 34,321,888 | 34,469,921 | 33,943,264 |
| Diluted | 34,321,888 | 34,469,921 | 44,755,137 |

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

**MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES**

**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME / (LOSS)**

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| | (In thousands of US dollars) | | |
| Net income (loss) | $(21,826) | $ (3,900) | $ 84,936 |
| Other comprehensive income (loss) | | | |
| Foreign currency translation adjustments | 15,856 | 18,352 | (52,873) |
| Derivative adjustments | | | |
| Fair valuation of derivatives | (2,894) | (1,589) | 7,736 |
| Reclassification adjustment for loss (gain) on derivatives included in net income (loss) | 4,488 | (3,759) | (2,001) |
| Total other comprehensive income (loss) | 17,450 | 13,004 | (47,138) |
| Total comprehensive income (loss) | $ (4,376) | $ 9,104 | $ 37,798 |

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

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## MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

| (In thousands of US dollars, except share data) | Common Stock Shares | Common Stock Amount | Additional Paid-In Capital | Accumulated Deficit | Treasury Stock | Accumulated Other Comprehensive Income (Loss) | Total |
|---|---|---|---|---|---|---|---|
| **Balance at January 1, 2017** | 35,048,338 | $ 416 | $ 130,189 | $ (125,825) | $ (90,918) | $ 14,024 | $(72,114) |
| Stock-based compensation | — | — | 2,336 | — | — | — | 2,336 |
| Exercise of stock options | 539,183 | 6 | 3,738 | — | — | — | 3,744 |
| Settlement of restricted stock units | 397,522 | 4 | (4) | — | — | — | — |
| Acquisition of treasury stock | (1,795,444) | — | — | — | (11,401) | — | (11,401) |
| Other comprehensive loss, net | — | — | — | — | — | (47,138) | (47,138) |
| Net income | — | — | — | 84,936 | — | — | 84,936 |
| **Balance at December 31, 2017, as previously reported** | 34,189,599 | $ 426 | $ 136,259 | $ (40,889) | $(102,319) | $ (33,114) | $(39,637) |
| Impact of adopting the new revenue standard | — | — | — | 8,484 | — | — | 8,484 |
| **Balance at January 1, 2018, as adjusted** | 34,189,599 | $ 426 | $ 136,259 | $ (32,405) | $(102,319) | $ (33,114) | $(31,153) |
| Stock-based compensation | — | — | 5,213 | — | — | — | 5,213 |
| Exercise of stock options | 162,341 | 2 | 1,131 | — | — | — | 1,133 |
| Settlement of restricted stock units | 328,309 | 3 | (3) | — | — | — | — |
| Acquisition of treasury stock | (239,017) | — | — | — | (1,607) | — | (1,607) |
| Other comprehensive income, net | — | — | — | — | — | 13,004 | 13,004 |
| Net loss | — | — | — | (3,900) | — | — | (3,900) |
| **Balance at December 31, 2018** | 34,441,232 | $ 431 | $ 142,600 | $ (36,305) | $(103,926) | $ (20,110) | $(17,310) |
| Stock-based compensation | — | — | 6,952 | — | — | — | 6,952 |
| Exercise of stock options | 452,819 | 4 | 2,856 | — | — | — | 2,860 |
| Settlement of restricted stock units | 344,714 | 4 | (4) | — | — | — | — |
| Acquisition of treasury stock | (438,453) | — | — | — | (3,107) | — | (3,107) |
| Other comprehensive income, net | — | — | — | — | — | 17,450 | 17,450 |
| Net loss | — | — | — | (21,826) | — | — | (21,826) |
| **Balance at December 31, 2019** | 34,800,312 | $ 439 | $ 152,404 | $ (58,131) | $(107,033) | $ (2,660) | $(14,981) |

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

## MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF CASH FLOWS

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| | (In thousands of US dollars) | | |
| **Cash flows from operating activities** | | | |
| Net income (loss) | $ (21,826) | $ (3,900) | $ 84,936 |
| Adjustments to reconcile net loss to net cash provided by (used in) operating activities | | | |
| Depreciation and amortization | 32,729 | 32,048 | 28,146 |
| Provision for severance benefits | 17,139 | 17,644 | 24,373 |
| Amortization of debt issuance costs and original issue discount | 2,299 | 2,183 | 1,987 |
| Loss (gain) on foreign currency, net | 24,692 | 30,215 | (77,600) |
| Restructuring and other charges (gains) | 3,598 | — | (17,010) |
| Stock-based compensation | 6,952 | 4,409 | 2,336 |
| Loss on early extinguishment of long-term borrowings, net | 42 | 206 | — |
| Other | 247 | (1,235) | 49 |
| Changes in operating assets and liabilities | | | |
| Accounts receivable, net | (19,824) | 8,294 | (22,210) |
| Unbilled accounts receivable, net | 19,274 | (1,284) | — |
| Inventories, net | (4,210) | (30,675) | (8,077) |
| Other receivables | (6,200) | 1,260 | 2,218 |
| Other current assets | 11,984 | 9,942 | 2,318 |
| Accounts payable | 7,375 | (8,389) | 10,320 |
| Other accounts payable | (8,518) | (11,183) | (12,141) |
| Accrued expenses | 5,279 | (3,926) | (12,020) |
| Deferred revenue | (4,768) | 2,891 | (3,949) |
| Other current liabilities | (4,460) | 2,123 | (1,281) |
| Other non-current liabilities | (306) | 2,346 | (760) |
| Payment of severance benefits | (9,288) | (11,688) | (21,506) |
| Other | (1,713) | (2,045) | (382) |
| Net cash provided by (used in) operating activities | 50,497 | 39,236 | (20,253) |
| **Cash flows from investing activities** | | | |
| Proceeds from settlement of hedge collateral | 13,583 | 14,342 | 10,615 |
| Payment of hedge collateral | (17,833) | (12,907) | (14,839) |
| Proceeds from disposal of property, plant and equipment | 202 | 1,685 | 1,209 |
| Purchase of property, plant and equipment | (22,955) | (28,948) | (32,661) |
| Payment for property related to water treatment facility arrangement | — | (4,283) | — |
| Payment for intellectual property registration | (1,103) | (961) | (1,207) |
| Collection of guarantee deposits | 549 | 801 | 1,462 |
| Payment of guarantee deposits | (1,349) | (3,016) | (41) |
| Other | 9 | (19) | 94 |
| Net cash used in investing activities | (28,897) | (33,306) | (35,368) |
| **Cash flows from financing activities** | | | |
| Proceeds from issuance of senior notes | — | — | 86,250 |
| Payment of debt issuance costs | — | — | (5,902) |
| Repurchase of long-term borrowings | (1,175) | (2,228) | — |
| Proceeds from exercise of stock options | 2,860 | 1,132 | 3,744 |
| Acquisition of treasury stock | (2,702) | (1,607) | (11,401) |
| Proceeds from property related to water treatment facility arrangement (Note 5) | — | 4,283 | — |
| Repayment of financing related to water treatment facility arrangement (Note 5) | (552) | (286) | — |
| Repayment of principal portion of finance lease liabilities | (233) | — | — |
| Net cash provided by (used in) financing activities | (1,802) | 1,294 | 72,691 |
| Effect of exchange rates on cash, cash equivalents and restricted cash | (579) | (3,361) | 9,899 |
| Net increase in cash, cash equivalents and restricted cash | 19,219 | 3,863 | 26,969 |
| **Cash, cash equivalents and restricted cash** | | | |
| Beginning of the period | 132,438 | 128,575 | 101,606 |
| End of the period | $ 151,657 | $ 132,438 | $ 128,575 |
| **Supplemental cash flow information** | | | |
| Cash paid for interest | $ 19,071 | $ 19,255 | $ 17,590 |
| Cash paid for income taxes | $ 2,081 | $ 920 | $ 1,027 |
| **Non-cash investing and financing activities** | | | |
| Property, plant and equipment additions in other accounts payable | $ 2,542 | $ 5,249 | $ 2,520 |
| Acquisition of treasury stock to satisfy the tax withholding obligations in connection with equity-based compensation | $ (405) | $ — | $ — |

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

MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)

## 1. Business, Basis of Presentation and Summary of Significant Accounting Policies

### *Business*

MagnaChip Semiconductor Corporation (together with its subsidiaries, the “Company”) is a designer and manufacturer of analog and mixed-signal semiconductor platform solutions for communications, Internet of Things (“IoT”) applications, consumer, industrial and automotive applications. The Company provides technology platforms for analog, mixed signal, power, high voltage, non-volatile memory and Radio Frequency (“RF”) applications. The Company’s business is comprised of two operating segments: Foundry Services Group and Standard Products Group. The Company’s Foundry Services Group provides specialty analog and mixed-signal foundry services mainly for fabless and Integrated Device Manufacturer (“IDM”) semiconductor companies that primarily serve communications, IoT, consumer, industrial and automotive applications. The Company’s Standard Products Group is comprised of two business lines: Display Solutions and Power Solutions. The Company’s Display Solutions products provide panel display solutions to major suppliers of large and small rigid and flexible panel displays, and mobile, automotive applications and home appliances. The Company’s Power Solutions products include discrete and integrated circuit solutions for power management in communications, consumer and industrial applications.

### *Basis of Presentation*

The consolidated financial statements are presented in accordance with accounting principles generally accepted in the United States of America (“US GAAP”).

Significant accounting policies followed by the Company in the preparation of the accompanying consolidated financial statements are summarized below.

### *Principles of Consolidation*

The consolidated financial statements include the accounts of the Company including its wholly-owned subsidiaries. All intercompany transactions and balances are eliminated in consolidation.

### *Use of Estimates*

The preparation of financial statements in accordance with US GAAP requires management to make estimates and assumptions about future events. These estimates and the underlying assumptions affect the amounts of assets and liabilities reported, disclosures about contingent assets and liabilities, and reported amounts of revenue and expenses. Such estimates include the valuation of accounts receivable, unbilled accounts receivable, inventories, stock based compensation, property plant and equipment, intangible assets, leases, other long-lived assets, long-term employee benefits, contingencies liabilities, estimated future cash flows and other assumptions used in long-lived asset impairment tests and calculation of income taxes and deferred tax valuation allowances, and assumptions used in the calculation of sales incentives, among others. Although these estimates and assumptions are based on management’s best knowledge of current events and actions that the Company may undertake in the future, actual results may be significantly different from the estimates.

### *Foreign Currency Translation*

The Company has assessed in accordance with Accounting Standards Codification (ASC) 830, “Foreign Currency Matters” (“ASC 830”), the functional currency of each of its subsidiaries in Luxembourg and the

Netherlands and has designated the US dollar to be their respective functional currencies. The Korean Won is the functional currency for the Company's Korean subsidiary, which is the primary operating subsidiary of the Company. The Company and its other subsidiaries are utilizing their local currencies as their functional currencies. The financial statements of the subsidiaries in functional currencies other than the US dollar are translated into the US dollar in accordance with ASC 830. All the assets and liabilities are translated to the US dollar at the end-of-period exchange rates. Capital accounts are determined to be of a permanent nature and are therefore translated using historical exchange rates. Revenues and expenses are translated using average exchange rates for the respective periods. Foreign currency translation adjustments arising from differences in exchange rates from period to period are included in the foreign currency translation adjustment account in accumulated other comprehensive loss of stockholders' equity. Foreign currency translation gains or losses on transactions by the Company or its subsidiaries in a currency other than its or its subsidiaries' functional currency are included in foreign currency gain (loss), net in its statements of operations.

***Cash and Cash Equivalents***

Cash equivalents consist of highly liquid investments with an original maturity date of three months or less when purchased.

***Accounts Receivable Reserves***

An allowance for doubtful accounts is provided based on the aggregate estimated uncollectability of the Company's accounts receivable. The Company also records an estimate for sales returns, included within accounts receivable, net, based on the historical experience of the amount of goods that will be returned and refunded or replaced. In addition, the Company also includes in accounts receivable, net, an allowance for volume discounts offered to certain customers and distributors for meeting agreed upon levels of sales volume.

***Sales of Accounts Receivable***

The Company accounts for transfers of financial assets under ASC 860, "Transfers and Servicing," as either sales or financings. Transfers of financial assets that result in sales accounting are those in which (1) the transfer legally isolates the transferred assets from the transferor, (2) the transferee has the right to pledge or exchange the transferred assets and no condition both constrains the transferee's right to pledge or exchange the assets and provides more than a trivial benefit to the transferor, and (3) the transferor does not maintain effective control over the transferred assets. If the transfer does not meet these criteria, the transfer is accounted for as a financing. Financial assets that are treated as sales are removed from the Company's accounts with any realized gain or loss reflected in earning during the period of sale.

***Inventories***

Inventories are stated at the lower of cost or net realizable value, using the first in, first out method ("FIFO"). If net realizable value is less than cost at the balance sheet date, the carrying amount is reduced to the realizable value, and the difference is recognized as a loss on valuation of inventories within cost of sales. Inventory reserves are established when conditions indicate that the net realizable value is less than costs due to physical deterioration, obsolescence, changes in price levels, or other causes based on individual facts and circumstances. The Company evaluates the sufficiency of inventory reserves and takes into consideration historical usage, expected demand, anticipated sales price, new product development schedules, the effect new products might have on the sale of existing products, product age and other factors. Reserves are also established for excess inventory based on the Company’s current inventory levels and projected demand and its ability to sell those specific products. Situations that could cause these inventory reserves include a decline in business and economic conditions, decline in consumer confidence caused by changes in market conditions, sudden and significant decline in demand for our products, inventory obsolescence because of rapidly changing technology and consumer requirements, or failure to estimate end customer demand properly. A reduction of these inventory reserves may be recorded if previously reserved items are subsequently sold as a result of unexpected changes to certain aforementioned situations.

(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)

In addition, as prescribed in ASC 330, “Inventory,” once a reserve is established for a particular item based on the Company’s assessment as described above, it is maintained until the related item is sold or scrapped as a new cost basis has been established that cannot subsequently be marked up. In addition, the cost of inventories is determined based on the normal capacity of each fabrication facility. In case the capacity utilization is lower than a certain level that management believes to be normal, the fixed overhead costs per production unit which exceeds those under normal capacity are charged to cost of sales rather than capitalized as inventories.

### *Advances to Suppliers*

The Company, from time to time, may make advances in form of prepayments or deposits to suppliers to procure materials to meet its planned production. The Company recorded advances of $6,593 thousand and $8,132 thousand as other current assets as of December 31, 2019 and 2018, respectively.

### *Property, Plant and Equipment*

Property, plant and equipment are stated at cost, less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets as set forth below.

| | |
|---|---|
| Buildings | 30 - 40 years |
| Building related structures | 10 - 20 years |
| Machinery and equipment | 10 - 12 years |
| Others | 3 - 10 years |

Routine maintenance and repairs are charged to expense as incurred. Expenditures that enhance the value or significantly extend the useful lives of the related assets are capitalized.

### *Impairment of Long-Lived Assets*

The Company reviews property, plant and equipment and other long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable in accordance with ASC 360, “Property, Plant and Equipment.” Recoverability is measured by comparing its carrying amount with the future net undiscounted cash flows the assets are expected to generate. If such assets are considered to be impaired, the impairment is measured as the difference between the carrying amount of the assets and the fair value of assets using the present value of the future net cash flows generated by the respective long-lived assets.

### *Restructuring Charges*

The Company recognizes restructuring charges in accordance with ASC 420, “Exit or Disposal Cost Obligations.” Certain costs and expenses related to exit or disposal activities are recorded as restructuring charges when liabilities for those costs and expenses are incurred.

***Leases***

The Company determines if an arrangement is a lease at inception of a contract considering whether the arrangement conveys the right to control the use of an identified asset over the period of use. Control of an underlying asset is conveyed if the Company has the right to direct the use of, and to obtain substantially all of the economic benefits from the use of, the identified asset. The Company accounts for lease transactions as either an operating or a finance lease, depending on the terms of the underlying lease arrangement. Assets related to operating leases are recorded on the balance sheet as operating lease right-of-use assets; the related liabilities are recorded as operating lease liabilities for the current portion and non-current operating lease liabilities for the non-current portion. Finance lease right-of-use assets are included in property and equipment, net and the related lease liabilities are included in other current liabilities and other non-current liabilities on the consolidated balance sheets.

Right-of-use assets represent the Company’s right to use an underlying asset during the lease term and lease liabilities represent the Company’s obligation to make lease payments arising from the lease. Right-of-use assets and liabilities are recognized based on the present value of the future minimum lease payments over the lease term. As most of the Company’s leases do not provide a readily determinable implicit rate, the Company estimates its incremental borrowing rates in determining the present value of future payments based on the lease term of each lease and market information available at commencement date. Finance lease right-of-use assets are amortized on a straight-line basis over the respective lease term with the interest expense on the lease liability recorded using the interest method. The amortization and interest expense are recorded separately in the consolidated statements of operations. Amortization of operating lease right-of-use assets and interest expense on operating lease liabilities are recognized on a straight-line basis over the respective lease term.

An extension or contraction of a lease term is considered if the related option to extend or early terminate the lease is reasonably certain to be exercised by the Company. Operating lease right-of-use assets may also include any advance lease payments made and exclude lease incentives and initial direct costs incurred. The Company has lease agreements with lease and non-lease components, which are generally accounted for separately. For certain equipment leases, lease and non-lease components are accounted for as a single lease component.

Variable lease payment amounts that cannot be determined at the commencement of the lease such as increases in lease payments based on changes in index rates are not included in the right-of-use assets or liabilities. These variable lease payments are expensed as incurred.

The Company does not recognize operating lease right-of-use assets and operating lease liabilities that arise from short-term leases but rather recognizes fixed lease payments in the statements of operations on a straight-line basis and variable payments in the period in which the related obligations incur.

***Intangible Assets***

Intangible assets other than intellectual property include technology and customer relationships that are amortized on a straight-line basis over periods ranging from one to five years. Intellectual property assets acquired represent rights under patents, trademarks and property use rights and are amortized over their respective periods of benefit, ranging up to ten years, on a straight-line basis.

***Fair Value Disclosures of Financial Instruments***

The Company follows ASC 820, “Fair Value Measurements and Disclosures” (“ASC 820”) for measurement and disclosures about fair value of its financial instruments. ASC 820 establishes a framework for measuring fair value in US GAAP, and expands disclosures about fair value measurements. To increase consistency and comparability in fair value measurements and related disclosures, ASC 820 establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The fair value hierarchy gives the highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. The three levels of fair value hierarchy defined by ASC 820 are:

Level 1—Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2—Inputs (other than quoted market prices included in Level 1) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level 3—Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model. Valuation of instruments includes unobservable inputs to the valuation methodology that are significant to the measurement of fair value of assets or liabilities.

As defined by ASC 820, the fair value of a financial instrument is the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale, which was further clarified as the price that would be received to sell an asset or paid to transfer a liability ("an exit price") in an orderly transaction between market participants at the measurement date. The carrying amounts of the Company's financial assets and liabilities, such as cash equivalents, accounts receivable, other receivables, accounts payable and other accounts payable approximate their fair values because of the short maturity of these instruments.

***Accrued Severance Benefits***

The majority of accrued severance benefits are for employees in the Company's Korean subsidiary, MagnaChip Semiconductor Ltd. Pursuant to the Employee Retirement Benefit Security Act of Korea, eligible employees and executive officers with one or more years of service are entitled to severance benefits upon the termination of their employment based on their length of service and rate of pay. As of December 31, 2019, 98% of all employees of the Company were eligible for severance benefits.

Accrued severance benefits are funded through a group severance insurance plan. The amounts funded under this insurance plan are classified as a reduction of the accrued severance benefits. Subsequent accruals are to be funded at the discretion of the Company.

In accordance with the National Pension Act of the Republic of Korea, a certain portion of accrued severance benefits is deposited with the National Pension Fund and deducted from the accrued severance benefits. The contributed amount is paid to employees from the National Pension Fund upon their retirement.

Beginning in July 2018, the Company began contributing a percentage of severance benefits, which may be adjusted from time to time, accrued for eligible employees for their services beginning January 1, 2018, to certain severance insurance deposit accounts. These accounts consist of time deposits and other guaranteed principal and interest accounts, and are maintained at insurance companies, banks or security companies for the benefit of the Company's employees.

***Revenue Recognition***

The Company recognizes revenue when it satisfies the performance obligation of transferring control over a product or service to a customer. Revenue is measured based on the consideration specified in a contract with a customer, which consideration is paid in exchange for a product or service.

The Foundry Services Group of the Company manufactures products, which the Company refers to as foundry products, based on customers' specific product designs. The Company recognizes revenue over time for foundry products that do not have an alternative use when the Company has an enforceable right to payment. Revenue recognized over time is in proportion of wafer manufacturing costs incurred relative to total estimated costs for completion. However, in certain circumstances, pursuant to a customer contract or an individual purchase order, the Company may not have an enforceable right to payment for services performed at a given time. In this situation, the Company recognizes revenue at the time when a customer obtains control of the product, which is generally upon product shipment, delivery at the customer's location or upon customer acceptance, depending on the terms of the arrangement.

The Standards Products Group of the Company sells products manufactured based on the Company's design. The Standard Products Group's products are either standardized with an alternative use or the Company does not have an enforceable right to payment for the related manufacturing services completed to date. Therefore, revenue for the Standards Products Group's products is recognized when a customer obtains control of the product, which is generally upon product shipment, delivery at the customer's location or upon customer acceptance, depending on the terms of the arrangement.

A portion of the Company's sales are made through distributors for which the Company applies the same revenue recognition guidance described above. The Company defers the recognition of revenue when it receives consideration from the customers prior to the fulfillment of performance obligations. These amounts are classified as deferred revenue on the consolidated balance sheets. Of the recorded deferred revenue of $6,477 thousand as of December 31, 2018, $1,885 thousand was recognized as revenue during the year ended December 31, 2019 and $4,428 thousand was refunded to a certain customer as the relevant advance payment agreement was terminated. Of the recorded deferred revenue of $8,335 thousand as of January 1, 2018, $3,496 thousand was recognized as revenue during the year ended December 31, 2018, and $4,671 thousand was reclassified to other current liabilities as the relevant advance payment agreement with a certain customer was terminated.

In accordance with revenue recognition guidance, any tax assessed by a governmental authority that is both imposed on and concurrent with a specific revenue-producing transaction, and that is collected by the Company from a customer, is excluded from revenue and related revenue is presented in the statements of operations on a net basis.

The Company provides warranties under which customers can return defective products. The Company also provides allowances for additional products that may have to be provided free of charge to compensate customers for not meeting previously agreed upon yield criteria, which the Company refers to as the low yield compensation reserve. The Company estimates the costs related to warranty claims, repair or replacements and low yield compensation reserves, and records them as components of cost of sales.

In addition, the Company offers sales returns (other than those that relate to defective products under warranty), cash discounts for early payments, sales incentives including discounts and volume rebates, and certain allowances to the Company's customers, including the Company's distributors. The Company records reserves for those returns, discounts, incentives and allowances as a deduction from sales, based on historical experience and other quantitative and qualitative factors.

MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(CONTINUED)
(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)

Substantially all of the Company's contracts are one year or less in duration. The standard payment terms with customers are generally thirty to sixty days from the time of shipment, product delivery to the customer's location or customer acceptance, depending on the terms of the related arrangement.

Unbilled accounts receivable represents the Company's contractual right to consideration for manufacturing work performed on a customer contract or an individual purchase order that has not been invoiced to the customer. As of December 31, 2019 and 2018, the Company recorded unbilled accounts receivable of $17,094, net of an allowance of $627 thousand, and $38,181 thousand, net of an allowance of nil, respectively. Of the recorded unbilled accounts receivable of $38,181 thousand as of December 31, 2018, $34,910 thousand were billed to customers upon shipment, upon product delivery or upon customer acceptance, depending on the terms of the related arrangement, during the year ended December 31, 2019.

All amounts billed to a customer related to shipping and handling are classified as sales while all costs incurred by the Company for shipping and handling are classified as selling, general and administrative expenses. The amounts charged to selling, general and administrative expenses were $1,769 thousand, $1,861 thousand, and $1,652 thousand for the years ended December 31, 2019, 2018 and 2017, respectively.

***Derivative Financial Instruments***

The Company applies the provisions of ASC 815, "Derivatives and Hedging" ("ASC 815"). This Statement requires the recognition of all derivative instruments as either assets or liabilities measured at fair value.

Under the provisions of ASC 815, the Company may designate a derivative instrument as hedging the exposure to variability in expected future cash flows that are attributable to a particular risk (a "cash flow hedge") or hedging the exposure to changes in the fair value of an asset or a liability (a "fair value hedge"). Special accounting for qualifying hedges allows the effective portion of a derivative instrument's gains and losses to offset related results on the hedged item in the consolidated statements of operations and requires that a company formally document, designate and assess the effectiveness of the transactions that receive hedge accounting treatment. Both at the inception of a hedge and on an ongoing basis, a hedge must be expected to be highly effective in achieving offsetting changes in cash flows or fair value attributable to the underlying risk being hedged. If the Company determines that a derivative instrument is no longer highly effective as a hedge, it discontinues hedge accounting prospectively and future changes in the fair value of the derivative are recognized in current earnings. The Company assesses hedge effectiveness at the end of each quarter.

In accordance with ASC 815, changes in the fair value of derivative instruments that are cash flow hedges are recognized in accumulated other comprehensive income (loss) and reclassified into earnings in the period in which the hedged item affects earnings. Derivative instruments that do not qualify, or cease to qualify, as hedges must be adjusted to fair value and the adjustments are recorded through net income (loss).

The cash flows from derivative instruments receiving hedge accounting treatment are classified in the same categories as the hedged items in the consolidated statements of cash flows.

***Advertising***

The Company expenses advertising costs as incurred. Advertising expense was approximately $134 thousand, $121 thousand and $95 thousand for the years ended December 31, 2019, 2018 and 2017, respectively.

***Product Warranties***

The Company records, in other current liabilities, warranty liabilities for the estimated costs that may be incurred under its basic limited warranty. The standard limited warranty period is one to two years for the majority of products. This warranty covers defective products, and related liabilities are accrued when product revenues are recognized. Factors that affect the Company's warranty liabilities include historical and anticipated rates of warranty claims and repair or replacement costs per claim to satisfy the Company's warranty obligation. The Company also records, in other current liabilities, low yield compensation reserves for its estimated costs for products that may have to be provided free of charge to compensate customers for not meeting previously agreed upon yield criteria. Factors that affect the Company's low yield compensation reserves include historical and anticipated rates of claims for not meeting previously agreed upon yield criteria. The Company periodically assesses the adequacy of those recorded warranty liabilities and low yield compensation reserves, and adjusts its estimates when necessary.

***Research and Development***

Research and development expenses are expensed as incurred and include wafers, masks, employee expenses, contractor fees, building costs, utilities and administrative expenses.

***Licensed Patents and Technologies***

The Company has entered into a number of royalty agreements to license patents and technology used in the design of its products. The Company carries two types of royalties: lump-sum and running basis. Lump-sum royalties, which require initial payments, usually paid in installments, represent a non-refundable commitment, such that the total present value of these payments is recorded as a prepaid expense and a liability upon execution of the agreements and the costs are amortized over the contract period using the straight-line method and charged to research and development expenses in the consolidated statements of operations.

Running royalties are paid based on the revenue of related products sold by the Company.

***Stock-Based Compensation***

The Company follows the provisions of ASC 718, "Compensation-Stock Compensation" ("ASC 718"). Under ASC 718, stock-based compensation cost is measured at the grant date, based on the fair value of the award, and is recognized as expense, net of the estimated forfeiture rate, over the requisite service period. As permitted under ASC 718, the Company elected to recognize compensation expense for all options with graded vesting based on the graded attribution method.

The Company uses the Black-Scholes option-pricing model to measure the grant-date-fair-value of options. The Black-Scholes model requires certain assumptions to determine an option's fair value, including expected term, risk free interest rate and expected volatility. The expected term of each option grant was based on employees' expected exercises and post-vesting employment termination behavior and the risk free interest rate was based on the US Treasury yield curve for the period corresponding with the expected term at the time of grant. No dividends were assumed for this calculation of option value.

***Earnings Per Share***

In accordance with ASC 260, "Earnings Per Share", the Company computes basic earnings per share by dividing net income (loss) available to common stockholders by the weighted average number of common shares outstanding during the period. Diluted earnings per share reflect the dilution of potential common stock outstanding during the period including stock options and restricted stock units, using the treasury stock method (by using the average stock price for the period to determine the number of shares assumed to be purchased from the exercise of stock options and restricted stock units), and convertibles, using the if-converted method. In determining the hypothetical shares repurchased, the Company uses the average share price for the period. In the case that earnings are negative, any potential common stock equivalents would have the effect of being anti-dilutive in the computation of net loss per share.

***Income Taxes***

The Company accounts for income taxes in accordance with ASC 740, “Income Taxes” (“ASC 740”). ASC 740 requires recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in a company’s financial statements or tax returns. Under this method, deferred tax assets and liabilities are determined based upon the difference between the financial statement carrying amounts and the tax bases of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. Valuation allowances are established when it is necessary to reduce deferred tax assets to the amount expected to be realized. Income tax expense is the tax payable for the period and the change during the period in deferred tax assets and liabilities.

The Company recognizes and measures uncertain tax positions taken or expected to be taken in a tax return utilizing a two-step process. In the first step, recognition, the Company determines whether it is more-likely-than-not that a tax position will be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The second step addresses measurement of a tax position that meets the more-likely-than-not criteria. The tax position is measured at the largest amount of benefit that has a likelihood of greater than 50 percent of being realized upon ultimate settlement.

***Concentration of Credit Risk***

The Company performs periodic credit evaluations of its customers’ financial condition and generally does not require collateral for customers on accounts receivable. The Company maintains reserves for potential credit losses, which are periodically reviewed.

***Recent Accounting Pronouncements Not Yet Adopted***

In December 2019, the FASB issued Accounting Standards Update No. ASU 2019-12, “Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes” (“ASU 2019-12”). ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and improves consistent application of and simplifies GAAP for other areas of Topic 740 by clarifying and amending existing guidance. ASU 2019-12 is effective for fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. The Company does not expect the adoption of ASU 2019-12 to have a material effect on the Company’s consolidated financial statements.

In June 2016, the FASB issued Accounting Standards Update No. 2016-13, “Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments” (“ASU 2016-13”). ASU 2016-13 amends the impairment model by requiring entities to use a forward-looking approach based on expected losses to estimate credit losses on certain types of financial instruments, including trade receivables. In April 2019, the FASB issued Accounting Standards Update No. 2019-04, “Codification Improvements to Topic 326, Financial Instruments—Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments” (“ASU

2019-04”), and in November 2019, the FASB issued Accounting Standards Update No. 2019-11, “Codification Improvements to Topic 326, Financial Instruments—Credit Losses” (“ASU 2019-11”) to clarify and address certain items related to the amendments in ASU 2016-13. ASU 2016-13, ASU 2019-04 and ASU 2019-11 are effective for fiscal years beginning after December 15, 2019, with early adoption permitted. The Company does not expect the adoption of ASU 2016-13, ASU 2019-04 and 2019-11 to have a material effect on the Company’s consolidated financial statements.

In August 2018, the FASB issued Accounting Standards Update No. 2018-13 “Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement” (“ASU 2018-13”). ASU 2018-13 amends existing fair value measurement disclosure requirements by adding, changing, or removing certain disclosures. ASU 2018-13 is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years, with early adoption permitted for any eliminated or modified disclosures. The Company does not expect that the adoption will have an impact on the Company’s consolidated financial statements.

***Recently Adopted Accounting Pronouncements***

In February 2018, the FASB issued Accounting Standards Update No. 2018-02, Income Statement – Reporting Comprehensive Income (Topic 220) Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, which allows for a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Reform. The Company adopted ASU 2018-02 in the first quarter of 2019, and the adoption did not impact the Company’s consolidated financial statements and related disclosures.

In August 2017, the FASB issued Accounting Standards Update No. 2017-12, “Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities” (“ASU 2017-12”). ASU 2017-12 provides new guidance about income statement classification and eliminates the requirement to separately measure and report hedge ineffectiveness. The entire change in fair value for qualifying hedge instruments included in the effectiveness will be recorded in other comprehensive income (“OCI”) and amounts deferred in OCI will be reclassified to earnings in the same income statement line item in which the earnings effect of the hedged item is reported. The Company adopted ASU 2017-12 in the first quarter of 2019, and the adoption of ASU 2017-12 did not have a material impact to the Company’s consolidated financial statements.

In July 2017, the FASB issued Accounting Standards Update No. 2017-11, “Earnings Per Share (Topic 260): Distinguishing Liabilities from Equity (Topic 480): Derivatives and Hedging (Topic 815)” (“ASU 2017-11”), which addresses the complexity of accounting for certain financial instruments with down round features. Down round features are features of certain equity-linked instruments (or embedded features) that result in the strike price being reduced on the basis of the pricing of future equity offerings. Current accounting guidance creates cost and complexity for entities that issue financial instruments (such as warrants and convertible instruments) with down round features that require fair value measurement of the entire instrument or conversion option. The Company adopted ASU 2017-11 in the first quarter of 2019, and the adoption did not impact the Company’s consolidated financial statements.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, “Leases (Topic 842)” (“ASU 2016-02”) in order to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet for those leases classified as operating leases under US GAAP. ASU 2016-02 requires that a lessee recognize a liability to make lease payments and a right-of-use asset representing its right to use the underlying asset for the lease term on the balance sheet. The FASB issued Accounting Standards Update No 2018-01, "Leases (Topic 842) Land Easement Practical Expedient for Transition to Topic 842" ("ASU 2018-01"). ASU 2018-01 permits an entity to elect an optional transition practical expedient not to evaluate land easements that exist or expired before the entity's adoption of ASU 2016-02 and that were not accounted for as leases under previous lease guidance. In July 2018, the FASB issued Accounting Standards Update No 2018-10, "Codification Improvements to Topic 842 Leases" ("ASU 2018-10"). ASU 2018-10 provides narrow amendments to clarify how to apply certain aspects of the new lease standard. In July 2018, the FASB also issued Accounting Standards Update No 2018-11, "Leases (Topic 842) Targeted Improvements" ("ASU 2018-11"). ASU 2018-11 allows an entity to recognize a cumulative-effect adjustment to the opening balance of retained earnings upon adoption of ASU 2016-02 (the "modified retrospective transition method"). In December 2018, the FASB issued Accounting Standards Update No 2018-20, "Leases (Topic 842) Narrow Scope Improvements for Lessors" ("ASU 2018-20"). ASU 2018-20 provides certain amendments that affect narrow aspects of the guidance issued in ASU 2016-02. In March 2019, the FASB issued Accounting Standards Update No 2019-01 "Codification Improvements" ("ASU 2019-01"). The effective date and transition requirements for ASU 2016-02, ASU 2018-01, ASU 2018-10, ASU 2018-11, ASU 2018-20 and ASU 2019-01 are the same. The Company adopted the new lease standard as of January 1, 2019, using the modified retrospective transition method, which requires a cumulative effect adjustment, if any, to the Company's beginning equity to be recognized on the date of adoption. There was no cumulative effect adjustment recorded on January 1, 2019. Accordingly, all periods prior to January 1, 2019, were presented in accordance with the previous FASB Accounting Standards Codification ("ASC") Topic 840, Leases, and no retrospective adjustments were made to the comparative periods presented. The impact from the adoption was the balance sheet recognition of right-of-use assets and lease liabilities for operating and finance leases as a lessee, which resulted in an increase of $16,387 thousand in the total assets and liabilities of the Company's consolidated balance sheets as of January 1, 2019. The Company used hindsight for determining a remaining lease term and assessing the likelihood of whether a renewal option is reasonably certain to be exercised by the Company. In addition, the adoption did not materially impact the Company's consolidated statements of operations or cash flows for the year ended December 31, 2019. For further information regarding these impacts, see Note 7, "Leases."

In May 2014, the FASB issued ASU 2014-09. ASU 2014-09 supersedes the revenue recognition requirements in "Revenue Recognition (Topic 605)", and requires entities to recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. ASU 2014-09 is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. The new guidance allows for the amendments to be applied either retrospectively to each prior reporting period presented (the "full retrospective method") or retrospectively as a cumulative-effect adjustment as of the date of adoption (the "modified retrospective method"). In March 2016, the FASB issued ASU 2016-08, which clarifies the implementation guidance on principal versus agent considerations. In April 2016, the FASB issued ASU 2016-10, which clarifies identifying performance obligations and the licensing implementation guidance. In May 2016, the FASB issued ASU 2016-12, which improves certain aspects of ASC Topic 606 "Revenue from Contracts with Customers." In December 2016, the FASB issued ASU 2016-20, which improves certain aspects of ASC Topic 606 "Revenue from Contracts with Customers." The effective date and transition requirements for ASU 2016-08, ASU 2016-10, ASU 2016-12 and ASU 2016-20 are the same as the effective date and transition requirements of ASU 2014-09 (collectively, the "new revenue standard").

Prior to the adoption of the new revenue standard effective on January 1, 2018, the Company had historically recognized revenue when risk and reward of ownership passed to the customer either upon shipment, upon product delivery at the customer's location or upon customer acceptance, depending on the terms of the related arrangement. After the adoption of the new revenue standard effective on January 1, 2018, the Company recognizes revenue over time for foundry products that do not have an alternative use when the Company has an enforceable right to payment. As the Company adopted the new revenue standard using the modified retrospective method, it recognized the cumulative effect of initially applying the new revenue standard as an adjustment to the Company's equity as of January 1, 2018, while prior period amounts are not adjusted and continue to be reported under the accounting standards in effect for such periods. The cumulative effect of the adjustments increased unbilled accounts receivable by $38,307 thousand and decreased inventories, net by $29,823 thousand, resulting in a net increase of $8,484 thousand in the Company's beginning equity as of January 1, 2018. There was no net income tax impact from those cumulative effect adjustments due to full allowance on deferred tax assets.

## 2. Fair Value Measurements

ASC 820 defines fair value, establishes a consistent framework for measuring fair value and expands disclosure requirements about fair value measurements. ASC 820 requires, among other things, the Company's valuation techniques used to measure fair value to maximize the use of observable inputs and minimize the use of unobservable inputs.

*Fair Value of Financial Instruments*

As of December 31, 2019, the following table represents the Company's assets measured at fair value on a recurring basis and the basis for that measurement (in thousands):

| | Carrying Value December 31, 2019 | Fair Value Measurement December 31, 2019 | Quoted Prices in Active Markets for Identical Asset (Level 1) | Significant Other Observable Inputs (Level 2) | Significant Unobservable Inputs (Level 3) |
|---|---|---|---|---|---|
| Assets: | | | | | |
| Derivative assets (other current assets) | $ 1,456 | $ 1,456 | — | $ 1,456 | — |

As of December 31, 2018, the following table represents the Company's liabilities measured at fair value on a recurring basis and the basis for that measurement (in thousands):

| | Carrying Value December 31, 2018 | Fair Value Measurement December 31, 2018 | Quoted Prices in Active Markets for Identical Asset (Level 1) | Significant Other Observable Inputs (Level 2) | Significant Unobservable Inputs (Level 3) |
|---|---|---|---|---|---|
| Liabilities: | | | | | |
| Derivative liabilities (other current liabilities) | $ 724 | $ 724 | — | $ 724 | — |

Items not reflected in the table above include cash equivalents, accounts receivable, other receivables, accounts payable, and other accounts payable, fair value of which approximate carrying values due to the short-term nature of these instruments. The fair value of assets and liabilities whose carrying value approximates fair value is determined using Level 2 inputs.

MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(CONTINUED)
(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)

*Fair Value of Long-Term Borrowings*

| | December 31, 2019 | | December 31, 2018 | |
|---|---|---|---|---|
| | Carrying Value | Fair Value | Carrying Value | Fair Value |
| | (In thousands of US dollars) | | | |
| Long-Term Borrowings: | | | | |
| 5.0% Exchangeable Senior Notes due March 2021 (Level 2) | $ 81,959 | $ 116,078 | $ 81,418 | $ 86,835 |
| 6.625% Senior Notes due July 2021 (Level 2) | $ 222,784 | $ 224,250 | $ 222,159 | $ 202,046 |

On January 17, 2017, the Company's wholly-owned subsidiary, MagnaChip Semiconductor S.A., closed an offering (the "Exchangeable Notes Offering") of 5.0% Exchangeable Senior Notes due March 1, 2021 (the "Exchangeable Notes"), of $86,250 thousand, which represents the principal amount, excluding $5,902 thousand of debt issuance costs. In December 2018 and February 2019, MagnaChip Semiconductor S.A. repurchased a principal amount equal to $1,590 thousand and $920 thousand, respectively, of the Exchangeable Notes in the open market. The Company estimates the fair value of the Exchangeable Notes using the market approach, which utilizes quoted market prices that fall under Level 2. For further description of the Exchangeable Notes, see Note 11, "Long-Term Borrowings."

On July 18, 2013, the Company issued 6.625% Senior Notes due July 15, 2021 (the "2021 Notes") of $225,000 thousand, which represents the principal amount, excluding $1,125 thousand of original issue discount and $5,039 thousand of debt issuance costs. In December 2018 and January 2019, the Company repurchased a principal amount equal to $500 thousand and $250 thousand, respectively, of the 2021 Notes in the open market. The Company estimates the fair value of the 2021 Notes using the market approach, which utilizes quoted market prices that fall under Level 2. For further description of the 2021 Notes, see Note 11, "Long-Term Borrowings."

*Fair Values Measured on a Non-recurring Basis*

The Company's non-financial assets, such as property, plant and equipment, and intangible assets are recorded at fair value upon acquisition and are remeasured at fair value only if an impairment charge is recognized.

## 3. Accounts Receivable

Accounts receivable as of December 31, 2019 and 2018 consisted of the following (in thousands):

| | December 31, | |
|---|---|---|
| | 2019 | 2018 |
| Accounts receivable | $92,685 | $80,155 |
| Notes receivable | 3,706 | 856 |
| Less: | | |
| Allowances for doubtful accounts | (87) | (90) |
| Sales return reserves | (387) | (439) |
| Volume discounts | (276) | (479) |
| Accounts receivable, net | $95,641 | $80,003 |

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Changes in allowance for doubtful accounts for the years ended December 31, 2019, 2018 and 2017 are as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Beginning balance | $ (90) | $ (94) | $ (83) |
| Translation adjustments | 3 | 4 | (11) |
| Ending balance | $ (87) | $ (90) | $ (94) |

Changes in sales return reserves for the years ended December 31, 2019, 2018 and 2017 are as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Beginning balance | $ (439) | $ (628) | $ (1,107) |
| Provision | (136) | (245) | (40) |
| Usage | 170 | 414 | 626 |
| Translation adjustments | 18 | 20 | (107) |
| Ending balance | $ (387) | $ (439) | $ (628) |

Changes in low yield compensation reserve for the year ended December 31, 2017 are as follows (in thousands):

| | Year Ended December 31, 2017 |
|---|---|
| Beginning balance | $ (432) |
| Provision | (362) |
| Usage | 22 |
| Translation adjustments | (72) |
| Ending balance | $ (844) |

Beginning in the first quarter of 2018, the Company recognized the low yield compensation reserves as a component of cost of sales, which were previously recorded as a deduction of sales.

Changes in volume discounts for the years ended December 31, 2019 and 2018 are as follows (in thousands):

| | Year Ended December 31, | |
|---|---|---|
| | 2019 | 2018 |
| Beginning balance | $ (479) | $ — |
| Provision | (1,852) | (1,378) |
| Usage | 2,040 | 892 |
| Translation adjustments | 15 | 7 |
| Ending balance | $ (276) | $ (479) |

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The Company has entered into an agreement to sell selected trade accounts receivable to a financial institution from time to time since March 2012. After the sale, the Company does not retain any interest in the receivables and the applicable financial institution collects these accounts receivable directly from the customer. The proceeds from the sales of these accounts receivable totaled $14,474 thousand, $25,266 thousand and $18,973 for the years ended December 31, 2019, 2018 and 2017, respectively, and these sales resulted in pre-tax losses of $45 thousand, $63 thousand and $55 thousand for the years ended December 31, 2019, 2018 and 2017, respectively, which are included in selling, general and administrative expenses in the consolidated statements of operations. Net proceeds of the accounts receivable sale program are recognized in the consolidated statements of cash flows as part of operating cash flows.

The Company uses receivable discount programs with certain customers. These discount arrangements allow the Company to accelerate collection of customers' receivables.

## 4. Inventories

Inventories as of December 31, 2019 and 2018 consist of the following (in thousands):

| | Year Ended December 31, | |
|---|---|---|
| | 2019 | 2018 |
| Finished goods | 17,489 | 14,334 |
| Semi-finished goods and work-in-process | 44,040 | 39,135 |
| Raw materials | 17,702 | 21,150 |
| Materials in-transit | — | 1,890 |
| Less: inventory reserve | (5,964) | (4,898) |
| Inventories, net | $ 73,267 | $ 71,611 |

Changes in inventory reserve for the years ended December 31, 2019, 2018 and 2017 are as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Beginning balance | $ (4,898) | $(6,391) | $(7,177) |
| Change in reserve | | | |
| Inventory reserve charged to costs of sales | (13,855) | (8,269) | (7,017) |
| Sale of previously reserved inventory | 3,067 | 4,098 | 6,003 |
| | (10,788) | (4,171) | (1,014) |
| Write off | 9,189 | 5,479 | 2,641 |
| Translation adjustments | 533 | 185 | (841) |
| Ending balance | $ (5,964) | $(4,898) | $(6,391) |

Inventory reserve represents the Company's best estimate in value lost due to excessive inventory level, physical deterioration, obsolescence, changes in price levels, or other causes based on individual facts and circumstances. Inventory reserve relates to inventory items including finished goods, semi-finished goods, work-in-process and raw materials. Write off of this reserve is recognized only when the related inventory has been disposed or scrapped.

During the first half of 2019, the Company recorded inventory reserves of $5,475 thousand related to certain legacy display products.

## 5. Property, Plant and Equipment

Property, plant and equipment as of December 31, 2019 and 2018 are comprised of the following (in thousands):

| | December 31, 2019 | December 31, 2018 |
|---|---|---|
| Buildings and related structures | $ 68,828 | $ 70,665 |
| Machinery and equipment | 327,677 | 323,325 |
| Finance lease right-of-use assets | 2,457 | — |
| Others | 42,681 | 44,724 |
| | 441,643 | 438,714 |
| Less: accumulated depreciation | (273,959) | (251,962) |
| Land | 14,890 | 15,419 |
| Property, plant and equipment, net | $ 182,574 | $ 202,171 |

Aggregate depreciation expenses totaled $31,820, thousand $31,229 thousand and $27,498 thousand for the years ended December 31, 2019, 2018 and 2017, respectively.

As of June 29, 2018, the Company's Korean subsidiary entered into an arrangement whereby it (i) acquired a water treatment facility from SK hynix for $4,172 thousand to support its fab in Gumi, Korea, and (ii) subsequently sold the water treatment facility for $4,172 thousand to a third party management company that the Company engaged to run the facility for a 10-year term. This arrangement is accounted for as a financing due to the Company's Korean subsidiary's continuing involvement with the facility. As a result, on the acquisition date, the Company recorded $4,172 thousand as property, plant and equipment, net, which is depreciated over the water treatment facility's estimated useful life. The Company also recorded the related liabilities of $553 thousand as other current liabilities and $3,619 thousand as other non-current liabilities, which relate to the financing and service portions, respectively, of the arrangement and are amortized using the effective interest method over the 10-year contract period.

## 6. Intangible Assets

Intangible assets as of December 31, 2019 and 2018 are comprised of the following (in thousands):

| | December 31, 2019 | | |
|---|---|---|---|
| | Gross amount | Accumulated amortization | Net amount |
| Technology | $18,688 | $ (18,688) | $ — |
| Customer relationships | 26,838 | (26,838) | — |
| Intellectual property assets | 12,278 | (8,264) | 4,014 |
| Intangible assets, net | $57,804 | $ (53,790) | $4,014 |

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| | December 31, 2018 | | |
|---|---|---|---|
| | Gross amount | Accumulated amortization | Net amount |
| Technology | $19,350 | $ (19,350) | $ — |
| Customer relationships | 27,791 | (27,791) | — |
| Intellectual property assets | 11,571 | (7,618) | 3,953 |
| Intangible assets, net | $58,712 | $ (54,759) | $3,953 |

Aggregate amortization expense for intangible assets totaled $909 thousand, $819 thousand and $648 thousand for the years ended December 31, 2019, 2018 and 2017, respectively. The aggregate amortization expense of intangible assets for the next five years are estimated to be $943 thousand, $908 thousand, $809 thousand, $622 thousand and $394 thousand, for the years ended December 31, 2020, 2021, 2022, 2023 and 2024, respectively.

**7. Leases**

The Company has operating and finance leases for land, buildings and other assets such as vehicles and office equipment. The Company's leases have remaining lease terms ranging from 1 year to 15 years. For certain leases, the Company has options to extend the lease term for additional periods ranging from 1 year to 10 years.

The Company's land lease payment is subject to a biennial adjustment (based on change of the Consumer Price Index), the impact of which is treated as a variable lease payment.

The Company adopted the new lease accounting standard as of January 1, 2019, using the modified retrospective transition method. The tables below present financial information related to the Company's leases.

Supplemental balance sheet information related to leases is as follows (in thousands):

| Leases | Classification | As of December 31, 2019 |
|---|---|---|
| **Assets** | | |
| Operating lease | Operating lease right-of-use assets | $ 11,482 |
| Finance lease | Property, plant and equipment, net | 2,151 |
| **Total leased assets** | | $ 13,633 |
| **Liabilities** | | |
| Current | | |
| Operating | Operating lease liabilities | $ 2,036 |
| Finance | Other current liabilities | 252 |
| Non-current | | |
| Operating | Non-current operating lease liabilities | 9,446 |
| Finance | Other non-current liabilities | 1,971 |
| **Total lease liabilities** | | $ 13,705 |

The components of lease cost included in the Company's consolidated statements of operations, are as follows (in thousands):

| | Year Ended December 31, 2019 |
|---|---|
| Operating lease cost | $ 3,154 |
| Finance lease cost | |
| Amortization of right-of-use assets | 303 |
| Interest on lease liabilities | 178 |
| Total lease cost | $ 3,635 |

The above table does not include an immaterial cost of short-term leases and a variable lease payment during the year ended December 31, 2019.

Other lease information is as follows (in thousands):

| | Year Ended December 31, 2019 |
|---|---|
| **Cash paid for amounts included in the measurement of lease liabilities** | |
| Operating cash flows from operating leases | $ 3,154 |
| Operating cash flows from finance leases | 178 |
| Financing cash flows from finance leases | 233 |

| | As of December 31, 2019 |
|---|---|
| **Weighted average remaining lease term** | |
| Operating leases | 12.5 years |
| Finance leases | 10.4 years |
| **Weighted average remaining lease rate** | |
| Operating leases | 7.95% |
| Finance leases | 7.95% |

The aggregate future lease payments for operating and finance leases as of December 31, 2019 are as follows (in thousands):

| | Operating Leases | Finance Leases |
|---|---|---|
| 2020 | $ 2,843 | $ 413 |
| 2021 | 1,355 | 413 |
| 2022 | 1,096 | 413 |
| 2023 | 1,088 | 413 |
| 2024 | 1,088 | 150 |
| Thereafter | 10,618 | 1,463 |
| Total future lease payments | 18,088 | 3,265 |
| Less: Imputed interest | (6,606) | (1,042) |
| Present value of future payments | $ 11,482 | $ 2,223 |

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As of December 31, 2018, the minimum aggregate rental payments due under non-cancelable operating lease contracts are as follows (in thousands):

| | |
|---|---|
| 2019 | $ 4,319 |
| 2020 | 3,569 |
| 2021 | 1,570 |
| 2022 | 1,319 |
| 2023 | 1,309 |
| 2024 and thereafter | 13,978 |
| | $ 26,064 |

### 8. Accrued Expenses

Accrued expenses as of December 31, 2019 and 2018 are comprised of the following (in thousands):

| | December 31, | |
|---|---|---|
| | 2019 | 2018 |
| Payroll, benefits and related taxes, excluding severance benefits | $ 16,505 | $ 14,548 |
| Withholding tax attributable to intercompany interest income | 23,371 | 20,879 |
| Interest on senior notes | 8,205 | 8,226 |
| Outside service fees | 898 | 935 |
| Restructuring and others | 3,549 | — |
| Others | 2,548 | 1,662 |
| Accrued expenses | $ 55,076 | $ 46,250 |

### 9. Derivative Financial Instruments

The Company's Korean subsidiary from time to time has entered into zero cost collar and forward contracts to hedge the risk of changes in the functional-currency-equivalent cash flows attributable to currency rate changes on US dollar denominated revenues.

Details of derivative contracts as of December 31, 2019 are as follows (in thousands):

| Date of transaction | Type of derivative | Total notional amount | Month of settlement |
|---|---|---|---|
| August 13, 2019 | Zero cost collar | $ 60,000 | January 2020 to June 2020 |
| September 27, 2019 | Zero cost collar | $ 42,000 | January 2020 to June 2020 |
| December 4, 2019 | Zero cost collar | $ 30,000 | July 2020 to December 2020 |

Details of derivative contracts as of December 31, 2018 are as follows (in thousands):

| Date of transaction | Type of derivative | Total notional amount | Month of settlement |
|---|---|---|---|
| June 27, 2018 | Zero cost collar | $ 18,000 | January 2019 to June 2019 |
| June 27, 2018 | Forward | $ 36,000 | January 2019 to June 2019 |

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The zero cost collar and forward contracts qualify as cash flow hedges under ASC 815, "Derivatives and Hedging," since at both the inception of the contracts and on an ongoing basis, the hedging relationship was and is expected to be highly effective in achieving offsetting cash flows attributable to the hedged risk during the term of the contracts.

The fair values of the Company's outstanding zero cost collar and forward contracts recorded as assets and liabilities as of December 31, 2019 and 2018 are as follows (in thousands):

| Derivatives designated as hedging instruments: | | December 31, 2019 | December 31, 2018 |
|---|---|---|---|
| Asset Derivatives: | | | |
| Zero cost collars | Other current assets | $ 1,456 | $ — |
| Liability Derivatives: | | | |
| Zero cost collars | Other current liabilities | $ — | $ 117 |
| Forward | Other current liabilities | $ — | $ 607 |

Offsetting of derivative assets as of December 31, 2019 is as follows (in thousands):

| As of December 31, 2019 | Gross amounts of recognized assets | Gross amounts offset in the balance sheets | Net amounts of assets presented in the balance sheets | Gross amounts not offset in the balance sheets: Financial instruments | Gross amounts not offset in the balance sheets: Cash collateral pledged | Net amount |
|---|---|---|---|---|---|---|
| Asset Derivatives: | | | | | | |
| Zero cost collars | $ 1,456 | $ — | $ 1,456 | $ — | $ 1,070 | $ 2,526 |

Offsetting of derivative liabilities as of December 31, 2018 is as follows (in thousands):

| As of December 31, 2018 | Gross amounts of recognized liabilities | Gross amounts offset in the balance sheets | Net amounts of liabilities presented in the balance sheets | Gross amounts not offset in the balance sheets: Financial instruments | Gross amounts not offset in the balance sheets: Cash collateral pledged | Net amount |
|---|---|---|---|---|---|---|
| Liability Derivatives: | | | | | | |
| Zero cost collars | $ 117 | $ — | $ 117 | $ — | $ (360) | $ (243) |
| Forward | $ 607 | $ — | $ 607 | $ — | $ (1,450) | $ (843) |

For derivative instruments that are designated and qualify as cash flow hedges, gains or losses on the derivative aside from components excluded from the assessment of effectiveness are reported as a component of accumulated other comprehensive income ("AOCI") and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Gains and losses on the derivative, representing hedge components excluded from the assessment of effectiveness, are recognized in current earnings.

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**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(CONTINUED)**
**(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)**

The following table summarizes the impact of derivative instruments on the consolidated statements of operations for the years ended December 31, 2019 and 2018 (in thousands):

| Derivatives in ASC 815 Cash Flow Hedging Relationships | Amount of Loss Recognized in AOCI on Derivatives (Effective Portion) | | Location/Amount of Gain (Loss) Reclassified from AOCI Into Statement of Operations (Effective Portion) | | | Location/Amount of Loss Recognized in Statement of Operations on Derivatives (Ineffective Portion)(1) | | |
|---|---|---|---|---|---|---|---|---|
| | 2019 | 2018 | | 2019 | 2018 | | 2019 | 2018 |
| Zero cost collars | $ (1,096) | $ (747) | Net sales | $ (2,738) | $ 2,103 | Other income, net | $ (193) | $ (276) |
| Forwards | $ (1,798) | $ (842) | Net sales | $ (1,750) | $ 1,656 | Other income, net | $ (125) | $ (190) |
| Forwards—excluded time value(1) | | | | | | Other income, net | $ — | $ (1,904) |
| | $ (2,894) | $ (1,589) | | $ (4,488) | $ 3,759 | | $ (318) | $ (2,370) |

(1) The FASB issued the new guidance about hedging activities (ASU 2017-12), which provides new rules about income statement classification and eliminates the requirement to separately measure and report hedge ineffectiveness. In addition, under the same guidance, excluded time value for forward contracts is presented in earnings in the same income statement line item that is used to present the earnings effect of the hedged item. The Company adopted the new guidance in the first quarter of 2019 and recorded $98 thousand as a reduction of net sales for the same period, and the comparative prior period amounts were not restated and continued to be reported under the accounting standards in effect for such period.

As of December 31, 2019, the amount expected to be reclassified from accumulated other comprehensive loss into income within the next twelve months is $1,545 thousand.

The Company set aside $8,750 thousand and $4,000 thousand of cash deposits to the counterparties, Nomura Financial Investment (Korea) Co., Ltd. (“NFIK”) and Deutsche Bank AG, Seoul Branch (“DB”), as required for the zero cost collar and forward contracts outstanding as of December 31, 2019 and 2018, respectively. These cash deposits are recorded as hedge collateral on the consolidated balance sheets.

The Company is required to deposit additional cash collateral with NFIK and DB for any exposure in excess of $500 thousand, and $1,070 thousand and $1,810 thousand of additional cash collateral were required and recorded as hedge collateral on the consolidated balance sheets as of December 31, 2019 and December 31, 2018, respectively.

These forward and zero cost collar contracts may be terminated by the counterparty in a number of circumstances, including if the Company’s long-term debt rating falls below B-/B3 or if the Company’s total cash and cash equivalents is less than $30,000 thousand at the end of a fiscal quarter, unless a waiver is obtained from the counterparty.

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(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)

## 10. Product Warranties

Changes in accrued warranty liabilities for the years ended December 31, 2019, 2018 and 2017 are as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Beginning balance | $ 610 | $1,060 | $ 466 |
| Change in provision (reversal) | 2,357 | 222 | (224) |
| Usage | (1,315) | (636) | (65) |
| Translation adjustments | (6) | (36) | 39 |
| Ending balance | $ 1,646 | $ 610 | $ 216 |

Beginning in the first quarter of 2018, the Company recognized low yield compensation reserves as a component of cost of sales. Low yield compensation reserves were previously recorded as a deduction of sales.

The Company accounted for this change prospectively as a change in accounting estimate, which resulted in an increase of $844 thousand in current liabilities, as of January 1, 2018.

## 11. Long-Term Borrowings

Long-term borrowings as of December 31, 2019 and 2018 are as follows (in thousands):

| | December 31, | |
|---|---|---|
| | 2019 | 2018 |
| 5.0% Exchangeable Senior Notes due March 2021 | $ 83,740 | $ 84,660 |
| 6.625% Senior Notes due July 2021 | $224,250 | $224,500 |
| Less: unamortized discount and debt issuance costs | (3,247) | (5,583) |
| Long-term borrowings, net of unamortized discount and debt issuance costs | $304,743 | $303,577 |

### *5.0% Exchangeable Senior Notes*

On January 17, 2017, MagnaChip Semiconductor S.A. closed the Exchangeable Notes Offering of $86,250 thousand aggregate principal amount of 5.0% Exchangeable Notes. Interest on the Exchangeable Notes accrues at a rate of 5.0% per annum, payable semi-annually on March 1 and September 1 of each year, beginning on March 1, 2017. The Exchangeable Notes will mature on March 1, 2021, unless earlier repurchased or converted. Holders may convert their notes at their option at any time prior to the close of business on the business day immediately preceding the stated maturity date.

The Company used a portion of the net proceeds from the issuance to repurchase 1,795,444 shares of common stock under its stock repurchase program at an aggregate cost of $11,401 thousand.

Upon conversion, the Company will deliver for each $1,000 principal amount of converted notes a number of shares equally to the exchange rate, which will initially be 121.1387 shares of common stock per $1,000 principal amount of Exchangeable Notes, equivalent to an initial exchange price of approximately $8.26 per share of common stock. The exchange rate will be subject to adjustment in some circumstances, but will not be adjusted for any accrued and unpaid interest. In addition, if a "make-whole fundamental change" (as defined in the Exchangeable Notes indenture (the "Exchangeable Notes Indenture")) occurs prior to the stated maturity date, the Company will increase the exchange rate for a holder who elects to convert its notes in connection with such make-whole fundamental change in certain circumstances. MagnaChip Semiconductor S.A. may also, under certain circumstances, be required to pay additional amounts to holders of Exchangeable Notes if withholding or deduction is required in a relevant tax jurisdiction.

If the Company undergoes a fundamental change, subject to certain conditions, holders may require the Company to repurchase for cash all or part of their notes at a purchase 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 purchase date. In addition, upon certain events of default described in the Exchangeable Notes Indenture, the trustee or holders of at least 25% principal amount of the Exchangeable Notes may declare 100% of the then outstanding Exchangeable Notes due and payable in full, together with all accrued and unpaid interest thereon. Payment of principal on the Exchangeable Notes may also accelerate and become automatically due and payable upon certain events of default involving bankruptcy or insolvency proceedings involving the Company, MagnaChip Semiconductor S.A. and their significant subsidiaries. The Exchangeable Notes are not redeemable at the option of MagnaChip Semiconductor S.A. prior to the maturity date.

The Exchangeable Notes Indenture contains covenants that limit the ability of the Company, MagnaChip Semiconductor S.A. and the Company's other restricted subsidiaries to: (i) declare or pay any dividend or make any payment or distribution on account of or purchase or redeem the Company's capital stock or equity interests of the restricted subsidiaries; (ii) make any principal payment on, or redeem or repurchase, prior to any scheduled repayment or maturity, any subordinated indebtedness; (iii) make certain investments; (iv) incur additional indebtedness and issue certain types of capital stock; (v) create or incur any lien (except for permitted liens) that secures obligations under any indebtedness; (vi) merge with or into or sell all or substantially all of the Company's assets to other companies; (vii) enter into certain types of transactions with affiliates; (viii) guarantee the payment of any indebtedness; and (ix) designate unrestricted subsidiaries.

These covenants are subject to a number of exceptions and qualifications. Certain of these restrictive covenants will terminate if the Exchangeable Notes are rated investment grade at any time.

The Company incurred debt issuance costs of $5,902 thousand related to the issuance of the Exchangeable Notes. The debt issuance costs are recorded as a direct deduction from the long-term borrowings in the consolidated balance sheets and amortized to interest expense using the effective interest method over the term of the Exchangeable Notes. Interest expense related to the Exchangeable Notes for year ended December 31, 2019 and 2018 was $5,618 thousand and $5,678 thousand, respectively.

In December 2018, the Company repurchased a principal amount equal to $1,590 thousand of the Exchangeable Notes in the open market, resulting in a loss of $234 thousand, which was recorded as loss on early extinguishment of long-term borrowings, net in the consolidated statements of operations for the year ended December 31, 2018. In February 2019, the Company repurchased a principal amount equal to $920 thousand of the Exchangeable Notes in the open market, resulting in a loss of $63 thousand, which was recorded as loss on early extinguishment of long-term borrowings, net in the consolidated statements of operations for the year ended December 31, 2019.

***6.625% Senior Notes***

On July 18, 2013, the Company issued a $225,000,000 aggregate principal amount of the 2021 Notes at a price of 99.5%. Interest on the 2021 Notes accrues at a rate of 6.625% per annum, payable semi-annually on January 15 and July 15 of each year, beginning on January 15, 2014.

On or after July 15, 2019, the Company can optionally redeem all or a part of the 2021 Notes at a redemption price equal to 100% of the principal amount of the notes plus accrued and unpaid interest and special interest, if any, on the notes redeemed, to the applicable date of redemption.

The Indenture relating to the 2021 Notes contains covenants that limit the ability of the Company and its restricted subsidiaries to: (i) declare or pay any dividend or make any payment or distribution on account of or purchase or redeem the Company’s capital stock or equity interests of the restricted subsidiaries; (ii) make any principal payment on, or redeem or repurchase, prior to any scheduled repayment or maturity, any subordinated indebtedness; (iii) make certain investments; (iv) incur additional indebtedness and issue certain types of capital stock; (v) create or incur any lien (except for permitted liens) that secures obligations under any indebtedness; (vi) merge with or into or sell all or substantially all of the Company’s assets to other companies; (vii) enter into certain types of transactions with affiliates; (viii) guarantee the payment of any indebtedness; (ix) enter into sale-leaseback transactions; (x) enter into agreements that would restrict the ability of the restricted subsidiaries to make distributions with respect to their equity to the Company or other restricted subsidiaries, to make loans to the Company or other restricted subsidiaries or to transfer assets to the Company or other restricted subsidiaries; and (xi) designate unrestricted subsidiaries.

These covenants are subject to a number of exceptions and qualifications. Certain of these restrictive covenants will terminate if the 2021 Notes are rated investment grade at any time.

The Company incurred original issue discount of $1,125 thousand and debt issuance costs of $5,039 thousand related to the issuance of the 2021 Notes. The original issue discount and the debt issuance costs are recorded as a direct deduction from the long-term borrowings in the consolidated balance sheets and amortized to interest expense using the effective interest method over the term of the 2021 Notes. Interest expense related to the 2021 Notes for the year ended December 31, 2019 and 2018 were $15,730 thousand and $15,719 thousand, respectively.

In December 2018, the Company repurchased a principal amount equal to $500 thousand of the 2021 Notes in the open market, resulting in a net gain of $28 thousand, which was recorded as loss on early extinguishment of long-term borrowings, net in the consolidated statements of operations for the year ended December 31, 2018. In January 2019, the Company repurchased a principal amount equal to $250 thousand of the 2021 Notes in the open market, resulting in a net gain of $21 thousand, which was recorded as loss on early extinguishment of long-term borrowings, net in the consolidated statements of operations for the year ended December 31, 2019.

## 12. Accrued Severance Benefits

The majority of accrued severance benefits are for employees in the Company’s Korean subsidiary. Pursuant to the Employee Retirement Benefit Security Act of Korea, eligible employees and executive officers with one or more years of service are entitled to severance benefits upon the termination of their employment based on their length of service and rate of pay. As of December 31, 2019, 98% of all employees of the Company were eligible for severance benefits.

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Changes in accrued severance benefits are as follows (in thousands):

| | Year Ended December 31, 2019 | 2018 |
|---|---|---|
| Beginning balance | $149,408 | $149,796 |
| Provisions | 17,139 | 17,644 |
| Severance payments | (9,288) | (11,688) |
| Translation adjustments | (4,967) | (6,344) |
| | 152,292 | 149,408 |
| Less: Cumulative contributions to severance insurance deposit accounts | (4,781) | (2,549) |
| The National Pension Fund | (215) | (230) |
| Group severance insurance plan | (568) | (598) |
| Accrued severance benefits, net | $146,728 | $146,031 |

The severance benefits funded through the Company's National Pension Fund and group severance insurance plan will be used exclusively for payment of severance benefits to eligible employees. These amounts have been deducted from the accrued severance benefit balance.

Beginning in July 2018, the Company contributes to certain severance insurance deposit accounts a certain percentage of severance benefits that are accrued for eligible employees for their services from January 1, 2018. These accounts consist of time deposits and other guaranteed principal and interest, and are maintained at insurance companies, banks or security companies for the benefit of employees. The Company deducts the contributions made to these severance insurance deposit accounts from its accrued severance benefits.

The Company is liable to pay the following future benefits to its non-executive employees upon their normal retirement age (in thousands):

| | Severance Benefit |
|---|---|
| 2020 | $ 1,066 |
| 2021 | 1,546 |
| 2022 | 1,349 |
| 2023 | 1,776 |
| 2024 | 2,630 |
| 2025 – 2029 | 35,442 |

The above amounts were determined based on the non-executive employees' current salary rates and the number of service years that will be accumulated upon their retirement dates. These amounts do not include amounts that might be paid to non-executive employees that will cease working with the Company before their normal retirement ages.

Korea's mandatory retirement age is 60 under the Employment Promotion for the Aged Act.

### 13. Equity Incentive Plans

The Company adopted its 2009 Common Unit Plan, or the 2009 Plan, effective December 8, 2009, which is administered by the Compensation Committee of the Company's Board of Directors (the "Compensation

Committee"). The 2009 Plan terminated in connection with the Company's initial public offering in March 2011, and no additional options or other equity awards may be granted under the 2009 Plan. However, options granted under the 2009 Plan prior to its termination will remain outstanding until they are either exercised or expired. The Company adopted its 2011 Equity Incentive Plan, or the 2011 Plan, in March 2010. The Company amended and restated the 2011 Plan in February 2011, and the Company's stockholders approved the amendment in March 2011 to reflect that it became effective in 2011 in connection with the Company's initial public offering in March 2011. The 2011 Plan was amended on October 23, 2017, to revise the clawback policy of the 2011 Plan. The 2011 Plan was amended on April 26, 2018 to amend the tax withholding provisions as they relate to directed sales of shares. Awards may be granted under the 2011 Plan to the Company's employees, officers, directors, or consultants or those of any present or future parent or subsidiary corporation or other affiliated entity. While the Company may grant incentive stock options only to employees, the Company may grant nonstatutory stock options, stock appreciation rights, restricted stock purchase rights or bonuses, restricted stock units, performance shares, performance units and cash-based awards or other stock-based awards to any eligible participant, subject to terms and conditions determined by the Compensation Committee. The term of options shall not exceed ten years from the date of grant. Restricted stock purchase rights shall be exercisable within a period established by the Compensation Committee, which shall in no event exceed thirty days from the effective date of the grant. As of December 31, 2019 an aggregate maximum of 9,347 thousand shares were authorized and 987 thousand shares were reserved for all future grants.

Stock options and stock appreciation rights must have exercise prices at least equal to the fair market value of the stock at the time of their grant pursuant to the 2011 Plan. The requisite service period, or the period during which a grantee is required to provide service in exchange for option grants, coincides with the vesting period. Stock options typically vest over one to three years following grant.

Restricted stock units granted under the 2011 Plan represent a right to receive shares of the Company's common stock when the restricted stock unit vests. No monetary payment (other than applicable tax withholding) shall be required as a condition of receiving shares pursuant to a restricted stock unit, the consideration for which shall be services actually rendered to a participating company or for its benefit. Stock issued pursuant to any restricted stock unit may (but need not) be made subject to vesting conditions based upon the satisfaction of such service requirements, conditions, restrictions or performance criteria as shall be established by the Compensation Committee and set forth in the award agreement evidencing such award. Restricted stock units typically vest over one to three years following grant.

The purchase price for shares issuable under each restricted stock purchase right shall be established by the Compensation Committee in its discretion. No monetary payment (other than applicable tax withholding) shall be required as a condition of receiving shares pursuant to a restricted stock bonus, the consideration for which shall be services actually rendered to a participating company or for its benefit. Stock issued pursuant to any restricted stock award may (but need not) be made subject to vesting conditions based upon the satisfaction of such service requirements, conditions, restrictions or performance criteria as shall be established by the Compensation Committee and set forth in the award agreement evidencing such award. During any period in which stock acquired pursuant to a restricted stock award remain subject to vesting conditions, such stock may not be sold, exchanged, transferred, pledged, assigned or otherwise disposed of other than pursuant to an ownership change event or transfer by will or the laws of descent and distribution. The grantee shall have all of the rights of a stockholder of the Company holding stock, including the right to vote such stock and to receive all dividends and other distributions paid with respect to such stock; provided, however, that if so determined by the Compensation Committee and provided by the award agreement, such dividends and distributions shall be subject to the same vesting conditions as the stock subject to the restricted stock award with respect to which such dividends or distributions were paid. If a grantee's service terminates for any reason, whether voluntary or involuntary (including the grantee's death or disability), then (a) the Company (or its assignee) has the option to repurchase for the purchase price paid by the grantee any stock acquired by the grantee pursuant to a restricted stock purchase right which remains subject to vesting conditions as of the date of the grantee's termination of service and (b) the grantee shall forfeit to the Company any stock acquired by the grantee pursuant to a restricted stock bonus which remains subject to vesting conditions as of the date of the grantee's termination of service. The Company has the right to assign at any time any repurchase right it may have, whether or not such right is then exercisable, to one or more persons as may be selected by the Company.

(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)

The following summarizes restricted stock unit activities for the years ended December 31, 2019, 2018 and 2017.

| | Number of Restricted Stock Units | Weighted Average Grant-Date Fair Value of Restricted Stock Units |
|---|---|---|
| Outstanding at January 1, 2017 | 566,389 | $ 6.03 |
| Granted | 172,716 | 11.15 |
| Vested | (368,555) | 5.72 |
| Settled of previous year vesting | (28,967) | 8.00 |
| Forfeited | (830) | 8.33 |
| Outstanding at December 31, 2017 | 340,753 | $ 8.80 |
| Granted | 739,231 | 9.64 |
| Vested | (373,620) | 9.24 |
| Unsettled | 45,311 | 9.22 |
| Forfeited | (33,462) | 10.31 |
| Outstanding at December 31, 2018 | 718,213 | $ 9.39 |
| Granted | 711,719 | 11.85 |
| Vested | (528,740) | 11.00 |
| Unsettled | 226,215 | 12.16 |
| Settled of previous year vesting | (42,189) | 9.22 |
| Forfeited | (41,915) | 10.00 |
| Outstanding at December 31, 2019 | 1,043,303 | $ 10.83 |

Total compensation expenses recorded for the restricted stock units were $6,939 thousand, $4,096 thousand and $1,601 thousand for the years ended December 31, 2019, 2018 and 2017, respectively. As of December 31, 2019, there was $4,289 thousand of total unrecognized compensation cost related to unvested restricted stock units, which is expected to be recognized over a weighted average future period of 0.5 year. Total fair value of restricted stock units vested were $5,817 thousand, $2,647 thousand and $2,107 thousand for the years ended December 31, 2019, 2018 and 2017, respectively.

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The following summarizes stock option activities for the years ended December 31, 2019, 2018 and 2017. At the date of grant, all options had an exercise price not less than the fair value of common stock (aggregate intrinsic value in thousands):

| | Number of Options | Weighted Average Exercise Price of Stock Options | Aggregate Intrinsic Value of Stock Options | Weighted Average Remaining Contractual Life of Stock Options |
|---|---|---|---|---|
| Outstanding at January 1, 2017 | 3,428,665 | $ 9.23 | $ 525 | 6.7 years |
| Granted | 70,865 | 10.43 | — | — |
| Forfeited | (88,443) | 12.77 | — | — |
| Exercised | (539,183) | 6.94 | 1,540 | — |
| Outstanding at December 31, 2017 | 2,871,904 | $ 9.59 | $ 6,073 | 6.2 years |
| Vested and expected to vest at December 31, 2017 | 2,865,475 | 9.59 | 6,050 | 6.2 years |
| Exercisable at December 31, 2017 | 2,395,979 | 10.11 | 4,603 | 5.7 years |
| Outstanding at January 1, 2018 | 2,871,904 | $ 9.59 | $ 6,073 | 6.2 years |
| Forfeited | (34,807) | 10.97 | — | — |
| Exercised | (162,341) | 6.97 | 737 | — |
| Outstanding at December 31, 2018 | 2,674,756 | $ 9.73 | $ 395 | 5.2 years |
| Vested and expected to vest at December 31, 2018 | 2,674,266 | 9.73 | 394 | 5.2 years |
| Exercisable at December 31, 2018 | 2,544,565 | 9.94 | 306 | 5.1 years |
| Outstanding at January 1, 2019 | 2,674,756 | $ 9.73 | $ 395 | 5.2 years |
| Forfeited | (44,892) | 10.29 | — | — |
| Exercised | (452,819) | 6.31 | 2,404 | — |
| Outstanding at December 31, 2019 | 2,177,045 | $ 10.42 | $ 6,259 | 4.7 years |
| Vested and Exercisable at December 31, 2019 | 2,177,045 | $ 10.42 | $ 6,259 | 4.7 years |

Total compensation expenses recorded for the stock options were $13 thousand, $313 thousand and $734 thousand for the years ended December 31, 2019, 2018 and 2017, respectively. There was no unrecognized compensation cost related to stock options expected to vest as of December 31, 2019. Total weighted average grant-date fair value of vested options was $165 thousand, $786 thousand and $794 thousand for the years ended December 31, 2019, 2018 and 2017, respectively.

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The Company utilizes the Black-Scholes option-pricing model to measure the fair value of each option grant. There were no grants of stock options during the years ended December 31, 2019 and 2018. The following summarizes the grant-date fair value of options granted for the year ended December 31, 2017 and assumptions used in the Black-Scholes option-pricing model on a weighted average basis. For the year ended December 31, 2017, the expected volatility was estimated using historical volatility of the Company's share prices.

| | Year Ended December 31, 2019 | 2018 | 2017 |
|---|---|---|---|
| Grant-date fair value of option | — | — | $ 5.02 |
| Expected term | — | — | 2.5 Years |
| Risk-free interest rate | — | — | 1.2% |
| Expected volatility | — | — | 81.7% |
| Expected dividends | — | — | — |

The number and weighted average grant-date fair value of the unvested stock options are as follows:

| | Year Ended December 31, 2019 | | 2018 | | 2017 | |
|---|---|---|---|---|---|---|
| | Number | Weighted Average Grant-Date Fair Value | Number | Weighted Average Grant-Date Fair Value | Number | Weighted Average Grant-Date Fair Value |
| Unvested options at the beginning of the period | 130,191 | $ 1.54 | 475,925 | $ 2.19 | 897,421 | $ 1.72 |
| Granted options during the period | — | — | — | — | 70,865 | 5.02 |
| Vested options during the period | (107,100) | 1.54 | (313,160) | 2.51 | (455,301) | 1.74 |
| Forfeited options during the period | (345) | 1.54 | (14,738) | 1.73 | (19,031) | 1.77 |
| Exercised options during the period | (22,746) | 1.54 | (17,836) | 1.66 | (18,029) | 1.59 |
| Unvested options at the end of the period | 0 | — | 130,191 | $ 1.54 | 475,925 | $ 2.19 |

## 14. Restructuring and Other Charges (Gains)

On February 14, 2019, the Company announced that the Company has undertaken a strategic evaluation of the Company's Foundry Services Group business and the fabrication facility located in Cheongju ("Fab 4"), the larger of the Company two 8-inch manufacturing facilities. The Company has engaged J.P. Morgan Securities LLC as the Company's financial advisor to assist in the evaluation and the Company has also retained legal advisors to assist in the evaluation. For the year ended December 31, 2019, the Company recorded $6,991 thousand in professional fees and other charges incurred in connection with the strategic evaluation and recorded such costs as restructuring and other charges in the Company's consolidated statements of operations. The Company also recorded $2,151 thousand and $53 thousand restructuring-related charges in the first and the fourth quarter of 2019, respectively.

As of December 21, 2016, the Company entered into a purchase and sale agreement to sell a building located in Cheongju, South Korea. The building has historically been used to house the Company's six-inch fabrication facility in Cheongju, South Korea (the "6-inch fab") and became vacant upon the closure of the fabrication facility in February 2016. As of December 31, 2015, the building was fully impaired. The Company received proceeds of $18,204 thousand, including a $1,655 thousand value-added tax, for the sale of the building in December 2016. As the Company was obligated to perform certain removal construction work, it recorded the $18,204 thousand proceeds as restricted cash and $16,549 thousand as deposits received in its consolidated balance sheets as of December 31, 2016. During the first quarter of 2017, the Company completed all removal construction work necessary to transfer the title of the building, and the $18,204 thousand of restricted cash was fully released. Accordingly, the Company recorded $16,635 thousand as restructuring gain in the consolidated statements of operations for the three months ended March 31, 2017.

In March 2017, the Company sold its sensor product business, which was included in and reported as part of Display Solutions line of its Standard Products Group, to a third party for proceeds of $1,295 thousand, in an effort to improve our overall profitability. The Company recorded $375 thousand net gain from this sale after deducting the book values of certain assets transferred to the buyer.

### 15. Early Termination Charges

As of February 22, 2017, the Company's Board of Directors approved the implementation of a new headcount reduction plan (the "Headcount Reduction Plan"). As of June 30, 2017, 352 employees elected to resign from the Company during the period in which the Headcount Reduction Plan was offered. The total cash cost of approximately $31 million has been fully paid. The Company recorded in its consolidated statement of operations $13,369 thousand in termination related charges as early termination charges for the year ended December 31, 2017. The remaining total estimated cost relates to statutory severance benefits, which are required by law and have already been fully accrued in the Company's consolidated financial statements.

### 16. Foreign Currency Gain (Loss), Net

Net foreign currency gain or loss includes non-cash translation gain or loss associated with intercompany balances. A substantial portion of the Company's net foreign currency gain or loss is non-cash translation gain or loss associated with intercompany long-term loans to our Korean subsidiary. The loans are denominated in US dollars and are affected by changes in the exchange rate between the Korean won and the US dollar. As of December 31, 2019, 2018 and 2017, the outstanding intercompany loan balances including accrued interest between the Korean subsidiary and the Dutch subsidiary were $686,485 thousand, $666,597 thousand and $677,267 thousand, respectively. The Korean won to US dollar exchange rates were 1,157.8:1, 1,118.1:1 and 1,071.4:1 using the first base rate as of December 31, 2019, 2018 and 2017, respectively, as quoted by the KEB Hana Bank.

### 17. Income Taxes

The Company's income tax expense is composed of domestic and foreign income taxes depending on the relevant tax jurisdictions. Domestic income (loss) before taxes and income tax expense is generated or incurred in the United States, where the parent company resides.

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The components of income tax expense are as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Income (loss) before income tax expense | | | |
| Domestic | $(27,758) | $ 3,492 | $27,461 |
| Foreign | 10,679 | (2,743) | 58,630 |
| | $(17,079) | $ 749 | $86,091 |
| Current income tax expense (benefit) | | | |
| Domestic | $ 20 | $ (383) | $ (359) |
| Foreign | 4,679 | 5,010 | 3,680 |
| Uncertain tax position liability (domestic) | (1) | (2) | (476) |
| Uncertain tax position liability (foreign) | 13 | (46) | (1,635) |
| | 4,711 | 4,579 | 1,210 |
| Deferred income taxes expense (benefit) | | | |
| Foreign | 36 | 70 | (55) |
| Total income tax expense | $ 4,747 | $ 4,649 | $ 1,155 |
| Effective tax rate | — | 620.6% | 1.3% |

The Company's effective tax rates were negative for the year ended December 31, 2019, as compared to 620.6% and 1.3% for the years ended December 31, 2018 and 2017, respectively. The differences between the annual effective tax rates and the US federal statutory rate of 21.0% in 2019 and 2018 and 35% in 2017 primarily relate to the non-income based withholding tax attributable to intercompany interest income of the Company's Dutch subsidiary, application of different tax rates associated with certain earnings from the Company's operations outside the US, the parent Company's interest income, which is non-taxable for US tax purposes, and the change of deferred tax assets and valuation allowance. The statutory income tax rate of the Company's Korean operating subsidiary was approximately 24.2%.

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The provision for domestic and foreign income taxes incurred is different from the amount calculated by applying the statutory tax rate to the net income before income taxes. The significant items causing this difference are as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Provision computed at statutory rate | $ (3,587) | $ 157 | $ 30,223 |
| State income taxes, net of federal effect | (1,068) | 46 | 5,445 |
| Change in statutory tax rates | 2,329 | 1 | 13,438 |
| Difference in foreign tax rates | 3,302 | 377 | (17,789) |
| Permanent differences | | | |
| Derivative assets adjustment | 315 | (1,111) | 1,937 |
| TPECs, hybrid and other interest | 7,812 | (5,555) | (7,526) |
| Thin capitalization | 988 | 1,262 | 1,888 |
| Permanent foreign currency gain (loss) | (1,734) | (2,490) | 15,237 |
| Penalty | 151 | 436 | 4,001 |
| Global intangible low-taxed income (GILTI) | 5,112 | 328 | — |
| Other permanent differences | 411 | 117 | 633 |
| Withholding tax | 3,043 | 3,270 | 3,339 |
| Change in valuation allowance | 4,382 | 6,260 | (56,744) |
| Tax credits claimed | (419) | (416) | (659) |
| Tax credits expired | 168 | 817 | 2,638 |
| Uncertain tax positions liability | 12 | (48) | (2,111) |
| Change in net operating loss carry-forwards from tax audit | — | — | 6,878 |
| NOL expired | 3,780 | — | — |
| Intercompany debt restructuring | (18,435) | — | — |
| Others | (1,815) | 1,198 | 327 |
| Income tax expense | $ 4,747 | $ 4,649 | $ 1,155 |

The permanent differences included in Tracking Preferred Equity Certificates (TPECs), hybrid and other interest primarily relate to non-taxable hybrid instruments treated as debt in one country and equity in another. The permanent difference of $5,112 thousand in connection with GILTI in 2019 was primarily attributable to the incomes earned by certain subsidiaries of the Company.

During 2019, the Company completed a restructuring of its intercompany borrowings between the Company and the other entities within the group of the Company (the “Intercompany Debt Restructuring”). The main purpose of the Intercompany Debt Restructuring is to simplify the intercompany debt structure of the group in order to align with the anti-hybrid mismatch provision mandated by the Organization for Economic Co-operation and Development (OECD). A portion of hybrid instruments issued by the Company’s Luxembourg subsidiary to its parent in the US were subject to the Intercompany Debt Restructuring. The Company recorded a net deferred tax asset of $18,435 thousand related to the unrealized foreign exchange translation loss, which was attributable to the changes in the balances of hybrid instruments that are denominated in Euros. However, there was no impact on the provision for income taxes due to a full valuation allowance against the deferred tax assets of the Company’s Luxembourg subsidiary.

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(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)

A summary of the composition of net deferred income tax assets (liabilities) as of December 31, 2019 and 2018 are as follows (in thousands):

| | Year Ended December 31, 2019 | Year Ended December 31, 2018 |
|---|---|---|
| **Deferred tax assets** | | |
| Inventory reserves | $ 4,869 | $ 8,274 |
| Derivative liabilities | — | 175 |
| Accrued expenses | 3,384 | 3,210 |
| Product warranties | 190 | 67 |
| Other reserves | 303 | 187 |
| Property, plant and equipment | 7,979 | 8,797 |
| Intangible assets | 5 | 12 |
| Accumulated severance benefits | 36,841 | 36,166 |
| Foreign currency translation loss | 20,544 | 28,718 |
| NOL carry-forwards | 150,954 | 164,824 |
| Tax credit | 17,054 | 18,352 |
| Other long-term payable | 3,023 | 3,634 |
| Interest expense deduction limitation | 5,244 | 4,026 |
| Others | 4,240 | 3,455 |
| Total deferred tax assets | 254,630 | 279,897 |
| Less: Valuation allowance | (246,224) | (248,633) |
| | 8,406 | 31,264 |
| **Deferred tax liabilities** | | |
| Derivative assets | 352 | — |
| Foreign currency translation gain | — | 17,777 |
| Prepaid expense | 3,090 | 3,612 |
| Others | 4,810 | 9,660 |
| Total deferred tax liabilities | 8,252 | 31,049 |
| Net deferred tax assets | $ 154 | $ 215 |
| **Net deferred tax assets reported in** | | |
| Other non-current assets | $ 154 | $ 215 |

The valuation allowances at December 31, 2019 and 2018 are primarily attributable to deferred tax assets for the uncertainty in taxable income at certain of the Company's foreign subsidiaries, including its Korean operating subsidiary.

Changes in valuation allowance for deferred tax assets for the years ended December 31, 2019, 2018 and 2017 are as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Beginning balance | $248,633 | $251,132 | $281,473 |
| Charged to expense | 7,912 | 7,653 | (54,816) |
| NOL/tax credit claimed/expired | (3,529) | (1,393) | (1,928) |
| Translation adjustments | (6,792) | (8,759) | 26,403 |
| Ending balance | $246,224 | $248,633 | $251,132 |

The evaluation of the recoverability of the deferred tax asset and the need for a valuation allowance requires the Company to weigh all positive and negative evidence to reach a conclusion that it is more likely than not that all or some portion of the deferred tax asset will not be realized. The weight given to the evidence is commensurate with the extent to which it can be objectively verified. The more negative evidence that exists, the more positive evidence is necessary and the more difficult it is to support a conclusion that a valuation allowance is not needed. Realization of the future tax benefits related to the deferred tax assets is dependent on many factors, including the Company's ability to generate future taxable income within the period during which the temporary differences reverse, the outlook for the economic environment in which the Company operates and the overall future industry outlook.

As of December 31, 2019 and 2018, the Company had net deferred tax assets of $154 thousand and $215 thousand, respectively, mainly related to the Company's Japanese subsidiary. As of December 31, 2019, 2018 and 2017, the Company recorded a valuation allowance of $246,224 thousand, $248,633 thousand and $251,132 thousand on its deferred tax assets related to temporary differences, net operating loss carry-forwards and tax credits of domestic and foreign subsidiaries. The Company recorded these valuation allowances on deferred tax assets based on its assessment that the negative evidence of expected losses in early future years outweighs the positive evidence of historical income.

As of December 31, 2019, the Company had approximately $708,885 thousand of net operating loss carry-forwards available to offset future taxable income, of which $204,248 thousand is associated with the Company's Korean subsidiary, which expires from 2024 through 2026. The net operating loss of $295,171 thousand associated with the Company's Luxembourg subsidiary is mainly attributable to certain expenses incurred in connection with its shareholding in the Company's Dutch subsidiary. Although this net operating loss amount is carried forward indefinitely, it will be recaptured on future capital gain. The remaining net operating loss mainly relates to the US parent company and its domestic subsidiary and substantially most of the net operating loss expires at various dates through 2039. The Company utilized net operating loss of $30,945 thousand, $24,123 thousand and $3,217 thousand for the years ended December 31, 2019, 2018 and 2017, respectively. The Company also has Korean, Dutch and U.S. tax credit carry-forwards of approximately $3,028 thousand, $14,018 thousand and $9 thousand, respectively, as of December 31, 2019. The Korean tax credits expire at various dates starting from 2020 to 2024 and the Dutch tax credits are carried forward to be used for an indefinite period of time.

### United States Tax Reform

On December 22, 2017, H.R. 1, originally known as the Tax Cuts and Jobs Act in the US was enacted (the "Tax Reform"). The Tax Reform reduced the US federal statutory rate to 21.0% from 35.0% effective January 1,

2018. The Tax Reform contains several key provisions that affect the Company's assessment on its deferred taxes, which include the remeasurement of deferred taxes, recognition of liabilities for taxes on mandatory deemed repatriations and certain other foreign income, and reassessment of the realizability of deferred tax assets. As of December 31, 2017, the Company remeasured its deferred tax assets and liabilities at the reduced rate of 21%, assessed the realizability of remeasured deferred tax assets and reduced its net deferred tax assets by $13,438 thousand in 2017.

The Company reviewed the tax impact of the Tax Reform, including guidance and proposed regulations issued in 2019, resulting in an inclusion of GILTI of $24,344 thousand for US income tax purposes. The Company elected to account for the tax on GILTI as a period cost and not record the deferred tax. Therefore, the inclusion of GILTI did not impact the Company's consolidated financial statements for the year ended December 31, 2019 due to the net operating loss carry-forwards available for the Company.

**Uncertainty in Income Taxes**

The Company and its subsidiaries file income tax returns in Korea, Japan, Taiwan, the US and in various other jurisdictions. The Company is subject to income- or non-income tax examinations by tax authorities of these jurisdictions for all open tax years.

As of December 31, 2019, 2018 and 2017, the Company recorded $445 thousand, $426 thousand and $475 thousand of unrecognized tax benefits, respectively.

A tabular reconciliation of the total amounts of unrecognized tax benefits at the beginning and end of each period is as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Unrecognized tax benefits, balance at the beginning | $ 426 | $ 475 | $ 1,768 |
| Additions based on tax positions related to the current year | 13 | 10 | 10 |
| Reductions for tax positions of prior years | (1) | — | (676) |
| Lapse of statute of limitations | — | (51) | (735) |
| Translation adjustments | 7 | (8) | 108 |
| Unrecognized tax benefits, balance at the ending | $ 445 | $ 426 | $ 475 |

The accrued interest and penalties totaled $0, $0 and $8 thousand as of December 31, 2019, 2018 and 2017, respectively.

The Company is currently unaware of any uncertain tax positions that could result in significant additional payments, accruals, or other material deviations from this estimate over the next 12 months.

**Other Matter**

In September 2017, the Company's Korean subsidiary was notified that the Korean National Tax Service (the "KNTS") would be examining its income- and non-income-based taxes for its 2012 to 2014 tax years. The KNTS conducted its audit, primarily focusing on non-income-based VAT transactions associated with the periods with respect to which the Company previously restated the Company's consolidated financial statements as a result of the independent investigation commenced by the Company's Audit Committee in January 2014 (the "Restatement").

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**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(CONTINUED)**
**(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)**

As a result, the aggregate tax and penalty assessment by the KNTS was $6,030 thousand, of which $3,336 thousand had already been accrued by the Company in its 2015 consolidated financial statements in connection with the Restatement filed in 2015. Such amount also included $548 thousand related to employee withholding amounts and associated penalties, and to the extent any such tax obligation was that of the Company's Korean subsidiary's employees, the Company expects to seek reimbursement of the applicable amounts from those employees. In addition, the KNTS assessed an administrative fine of $2,034 thousand in connection with the above-described tax audit.

During the fourth quarter of 2017, the Company recorded the $4,179 thousand related to this additional tax assessment and associated penalties and administrative fine as selling, general and administrative expenses in its consolidated statements of operations for the year ended December 31, 2017 and recorded the $548 thousand related to employee withholding amounts as other receivables in the consolidated balance sheets as of December 31, 2017 as the Company expects to seek reimbursement of the applicable amounts from those employees. Of the $548 thousand, the Company has collected $118 thousand and established an allowance of $430 thousand, which it has recorded as a selling, general and administrative expense for the three months ended September 30, 2018.

## 18. Geographic and Segment Information

The Company has two operating segments: its Foundry Services Group and Standard Products Group. The Company's chief operating decision maker is its Chief Executive Officer, who allocates resources and assesses performance of the business and other activities based on gross profit.

In January 2018, as part of the Company's ongoing portfolio optimization effort to realign business processes and streamline the Company's organizational structure, the Company transferred a portion of its non-OLED Display business from its Standard Products Group to its Foundry Services Group. The transferred non-OLED Display business has technical and business characteristics more closely aligned with the Company's Foundry Services Group business than with the Company's Standard Products Group business. The transferred non-OLED Display business previously resided within the Company's Display Solutions business line primarily as a result of a long standing customer relationship established in the past. The Company has recast comparative segment financial information to conform to this current period change. For the year ended December 31, 2017, $30,306 thousand of net sales and $6,322 thousand of gross profit were reclassified from the Display Solutions business line in the Standard Products Group to the Foundry Services Group.

The following sets forth information relating to the operating segments (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 *As Adjusted* |
| **Net Sales** | | | |
| Foundry Services Group | $ 307,144 | $ 325,312 | $ 350,395 |
| Standard Products Group | | | |
| Display Solutions | 308,531 | 256,113 | 179,233 |
| Power Solutions | 176,245 | 169,284 | 149,836 |
| Total Standard Products Group | 484,776 | 425,397 | 329,069 |
| All other | 275 | 189 | 208 |
| Total net sales | $ 792,195 | $ 750,898 | $ 679,672 |

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**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(CONTINUED)**
**(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)**

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 *As Adjusted* |
| **Gross Profit** | | | |
| Foundry Services Group | $ 64,010 | $ 82,578 | $ 101,780 |
| Standard Products Group | 116,327 | 115,478 | 85,905 |
| All other | 274 | 40 | 208 |
| Total gross profit | $ 180,611 | $ 198,096 | $ 187,893 |

Upon the adoption of the new revenue standard, the Company's revenue for Foundry Services Group is disaggregated depending on the timing of revenue recognition (in thousands):

| | Year Ended December 31, 2019 | | |
|---|---|---|---|
| | Revenue recognized at the time of shipment or delivery | Revenue recognized over time | Total |
| **Net Sales** | | | |
| Foundry Services Group | $ 157,272 | $149,872 | $307,144 |

| | Year Ended December 31, 2018 | | |
|---|---|---|---|
| | Revenue recognized at the time of shipment or delivery | Revenue recognized over time | Total |
| **Net Sales** | | | |
| Foundry Services Group | $ 80,578 | $244,734 | $325,312 |

The following is a summary of net sales by geographic region, based on the location to which the products are billed (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Korea | $ 249,385 | $ 282,516 | $ 279,883 |
| Asia Pacific (other than Korea) | 466,380 | 380,598 | 322,595 |
| United States | 28,109 | 37,483 | 35,089 |
| Europe | 46,421 | 47,831 | 41,109 |
| Others | 1,900 | 2,470 | 996 |
| Total | $ 792,195 | $ 750,898 | $ 679,672 |

For the years ended December 31, 2019, 2018 and 2017, the Company's net sales in Greater China (China, Hong Kong and Macau) represented 75.4%, 66.6% and 49.7%, respectively, and net sales in Taiwan represented 20.9%, 26.2% and 36.4%, respectively, of the Company's net sales in the Asia Pacific (other than Korea).

Net sales from the Company's top ten largest customers accounted for 67%, 61% and 57% for the years ended December 31, 2019, 2018 and 2017, respectively.

For the year ended December 31, 2019, the Company had one customer that represented 32.9% of its net sales. For the year ended December 31, 2018, the Company had two customers that represented 19.3% and

13.3% of its net sales. For the year ended December 31, 2017, the Company had one customer that represented 15.6% of its net sales.

98% of the Company's property, plant and equipment are located in Korea as of December 31, 2019.

## 19. Commitments and Contingencies

***Operating Agreements with SK hynix***

In connection with the acquisition of the non-memory semiconductor business from SK hynix on October 4, 2004 (the "Original Acquisition"), the Company entered into several agreements with SK hynix, including a non-exclusive cross license that provides the Company with access to certain of SK hynix's intellectual property for use in the manufacture and sale of non-memory semiconductor products. The Company also agreed to provide certain utilities and infrastructure support services to SK hynix.

Upon the closing of the Original Acquisition, the Company's Korean subsidiary and SK hynix also entered into lease agreements under which the Company's Korean subsidiary leases space to SK hynix in several buildings, primarily warehouses and utility facilities, in Cheongju, Korea. These leases are generally for an initial term of 20 years plus an indefinite number of renewal terms of 10 years each. Each of the leases is cancelable upon 90 days' notice by the lessee. The Company also leases certain land from SK hynix located in Cheongju, Korea. The term of this lease is indefinite unless otherwise agreed by the parties, and as long as the buildings remain on the lease site and are owned and used by the Company for permitted uses.

***Long-term Purchase Agreements***

The Company purchases raw materials from a variety of vendors. During the normal course of business, in order to manage manufacturing lead times and help assure adequate supply, the Company from time to time may enter into multi-year purchase agreements, which specify future quantities and pricing of materials to be supplied by the vendors. The Company reviews the terms of the long-term supply agreements and assesses the need for any accrual for estimated losses, such as lower of cost or net realizable value that will not be recovered by future sales prices. No such accrual was required as of December 31, 2019 or 2018.

***SEC Enforcement Staff Review***

In March 2014, the Company voluntarily reported to the Securities and Exchange Commission, or the SEC, that the Company's Audit Committee had determined that the Company incorrectly recognized revenue on certain transactions and as a result would restate its financial statements, and that the Audit Committee had commenced an independent investigation. Over the course of 2014 and the first two quarters of 2015, the Company voluntarily produced documents to the SEC regarding the various accounting issues identified during the independent investigation, and whether the Company's hiring of an accountant from the Company's independent registered public accounting firm impacted that accounting firm's independence. On July 22, 2014, the Staff of the SEC's Division of Enforcement obtained a Formal Order of Investigation. On March 12, 2015, the SEC issued a subpoena for documents to the Company in connection with its investigation. On May 1, 2017, the SEC announced that it had reached a final settlement with the Company, resolving the SEC's investigation. In that connection, the Company has consented, without admitting or denying the SEC's findings, to the entry of an administrative order by the SEC directing that the Company cease and desist from committing or causing any violations of certain provisions of the federal securities laws and related SEC regulations. The SEC's administrative order was entered on May 1, 2017. The SEC imposed a monetary penalty of $3,000 thousand on the Company. In the first quarter ended March 31, 2017, the Company established a reserve in that amount for the potential settlement of this matter. The reserved monetary penalty of $3,000 thousand was paid to the SEC during the second quarter of 2017. The Company also agreed to an undertaking to cooperate fully with the SEC in any and all investigations, litigations or other proceedings relating to or arising from the matters described in the SEC's order. In connection with the settlement, the SEC considered remedial acts promptly undertaken by the Company and its cooperation with the SEC staff during the course of the investigation. Among other things, as previously disclosed in the Company's filings with the SEC, the Audit Committee of the Company self-investigated and self-reported the accounting errors, selected new management and implemented various additional controls designed to prevent similar errors going forward.

## 20. Accumulated Other Comprehensive Loss

Accumulated other comprehensive loss consists of the following at December 31, 2019 and 2018, respectively (in thousands):

| | Year Ended December 31, | |
|---|---|---|
| | 2019 | 2018 |
| Foreign currency translation adjustments | $(4,205) | $(20,061) |
| Derivative adjustments | 1,545 | (49) |
| Total | $(2,660) | $(20,110) |

Changes in accumulated other comprehensive loss for the years ended December 31, 2019, 2018 and 2017 are as follows (in thousands):

| Year Ended December 31, 2019 | Foreign currency translation adjustments | Derivative adjustments | Total |
|---|---|---|---|
| Beginning balance | $ (20,061) | $ (49) | $(20,110) |
| Other comprehensive income (loss) before reclassifications | 15,856 | (2,894) | 12,962 |
| Amounts reclassified from accumulated other comprehensive loss | — | 4,488 | 4,488 |
| Net current-period other comprehensive income | 15,856 | 1,594 | 17,450 |
| Ending balance | $ (4,205) | $ 1,545 | $ (2,660) |

| Year Ended December 31, 2018 | Foreign currency translation adjustments | Derivative adjustments | Total |
|---|---|---|---|
| Beginning balance | $ (38,413) | $ 5,299 | $(33,114) |
| Other comprehensive income (loss) before reclassifications | 18,352 | (1,589) | 16,763 |
| Amounts reclassified from accumulated other comprehensive income | — | (3,759) | (3,759) |
| Net current-period other comprehensive income (loss) | 18,352 | (5,348) | 13,004 |
| Ending balance | $ (20,061) | $ (49) | $(20,110) |

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(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)

| Year Ended December 31, 2017 | Foreign currency translation adjustments | Derivative adjustments | Total |
|---|---|---|---|
| Beginning balance | $ 14,460 | $ (436) | $ 14,024 |
| Other comprehensive income (loss) before reclassifications | (52,873) | 7,736 | (45,137) |
| Amounts reclassified from accumulated other comprehensive income | — | (2,001) | (2,001) |
| Net current-period other comprehensive income (loss) | (52,873) | 5,735 | (47,138) |
| Ending balance | $ (38,413) | $ 5,299 | $ (33,114) |

## 21. Earnings (Loss) Per Share

The following table illustrates the computation of basic and diluted earnings (loss) per common share:

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| | (In thousands of US dollars, except share data) | | |
| **Basic earnings (loss) per share** | | | |
| Net income (loss) | $ (21,826) | $ (3,900) | $ 84,936 |
| Basic weighted average common stock outstanding | 34,321,888 | 34,469,921 | 33,943,264 |
| Basic earnings (loss) per share | $ (0.64) | $ (0.11) | $ 2.50 |
| **Diluted earnings (loss) per share** | | | |
| Net income (loss) | $ (21,826) | $ (3,900) | $ 84,936 |
| Add back: Interest expense on Exchangeable Notes | — | — | 5,349 |
| Net income (loss) allocated to common stockholders | $ (21,826) | $ (3,900) | $ 90,285 |
| Basic weighted average common stock outstanding | 34,321,888 | 34,469,921 | 33,943,264 |
| Net effect of dilutive equity awards | — | — | 821,664 |
| Net effect of assumed conversion of 5.0% Exchangeable Notes to common stock | — | — | 9,990,209 |
| Diluted weighted average common stock outstanding | 34,321,888 | 34,469,921 | 44,755,137 |
| Diluted earnings (loss) per share | $ (0.64) | $ (0.11) | $ 2.02 |

The following outstanding instruments were excluded from the computation of diluted loss per share, as they would have an anti-dilutive effect on the calculation:

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2019 | 2018 | 2017 |
| Options | 2,177,045 | 2,674,756 | 835,572 |
| Restricted Stock Units | 1,043,303 | 718,213 | — |

For the years ended December 31, 2019 and 2018, respectively, 10,153,620 shares and 10,438,187 shares of potential common stock from the assumed conversion of Exchangeable Notes were excluded from the computation of diluted loss per share as the effect were anti-dilutive for the period.

MAGNACHIP SEMICONDUCTOR CORPORATION AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(CONTINUED)
(TABULAR DOLLARS IN THOUSANDS, EXCEPT SHARE DATA)

### 22. Unaudited Quarterly Financial Results

The following tables present selected unaudited Consolidated Statements of Operations for each quarter of the years ended December 31, 2019 and 2018.

| | Fiscal Year 2019 | | | |
|---|---|---|---|---|
| | First Quarter | Second Quarter | Third Quarter | Fourth Quarter |
| | (In thousands of US dollars, except share data) | | | |
| Net sales | $ 157,380 | $ 205,145 | $ 229,677 | $ 199,993 |
| Gross profit | 22,701 | 43,840 | 60,866 | 53,204 |
| Operating income (loss) | $ (18,281) | 6,746 | 25,923 | 10,035 |
| Net income (loss) | $ (34,125) | $ (9,520) | $ (1,607) | $ 23,426 |
| Earnings (loss) per share: | | | | |
| Basic | $ (1.00) | $ (0.28) | $ (0.05) | $ 0.68 |
| Diluted | $ (1.00) | $ (0.28) | $ (0.05) | $ 0.54 |
| Weighted average common stock outstanding: | | | | |
| Basic | 34,194,878 | 34,245,127 | 34,357,745 | 34,542,415 |
| Diluted | 34,194,878 | 34,245,127 | 34,357,745 | 46,078,768 |

| | Fiscal Year 2018 | | | |
|---|---|---|---|---|
| | First Quarter | Second Quarter | Third Quarter | Fourth Quarter |
| | (In thousands of US dollars, except share data) | | | |
| Net sales | $ 165,819 | $ 199,685 | $ 206,000 | $ 179,394 |
| Gross profit | 44,581 | 53,854 | 55,749 | 43,912 |
| Operating income | 7,379 | 13,914 | 18,265 | 7,860 |
| Net income (loss) | $ 2,763 | $ (21,505) | $ 17,222 | $ (2,380) |
| Earnings (loss) per share: | | | | |
| Basic | $ 0.08 | $ (0.62) | $ 0.50 | $ (0.07) |
| Diluted | $ 0.08 | $ (0.62) | $ 0.41 | $ (0.07) |
| Weighted average common stock outstanding: | | | | |
| Basic | 34,253,111 | 34,420,654 | 34,573,377 | 34,627,292 |
| Diluted | 35,154,693 | 34,420,654 | 46,021,610 | 34,627,292 |

### 23. Subsequent Events

*Derivative contracts*

In January 2020, the Company and DB entered into a derivative contract of zero cost collars for the period from July 2020 to December 2020. The total notional amounts are $30,000 thousand. In connection with this contract, the Company paid $1,800 thousand in cash deposits to DB in February 2020.

In February 2020, the Company and NFIK entered into derivative contracts of zero cost collars for the period from July 2020 to December 2020. The total notional amounts are $48,000 thousand.

## 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 that are designed to ensure that information required to be disclosed in our periodic reports filed or submitted 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.

Management of the Company, with the participation of our Principal Executive Officer and our Principal Financial Officer, conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as such term is defined under Rules 13a-15(e) and 15d-15(e) promulgated under the Exchange Act, as of December 31, 2019. Based on this evaluation, our Principal Executive Officer and our Principal Financial Officer have concluded that our disclosure controls and procedures were effective as of December 31, 2019.

***(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 Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control over financial reporting is a process designed under the supervision of our Principal Executive Officer and our Principal Financial Officer, and effected by our Board, management and other personnel, 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.

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.

Under the supervision and with the participation of our Principal Executive Officer and our Principal Financial Officer, we conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of December 31, 2019, based on the criteria set forth in *Internal Control—Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on our assessment, we concluded that our internal control over financial reporting was effective as of December 31, 2019.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2019 has been audited by Samil PricewaterhouseCoopers, an independent registered public accounting firm, as stated in their report which appears in Item 8 of this Report.

***(c) Changes in Internal Control Over Financial Reporting***

There were no changes in internal control over financial reporting during the quarter ended December 31, 2019 that have materially affected, or are 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 relating to our executive officers is included in “Item 1. Business—Executive Officers of the Company.” The other information required by this item is incorporated by reference to our definitive proxy statement relating to our 2020 annual meeting of stockholders or will be included by amendment to this Report within 120 days after the end of the fiscal year to which this Report relates.

## Item 11. Executive Compensation

The information required by this item is incorporated by reference to our definitive proxy statement relating to our 2020 annual meeting of stockholders or will be included by amendment to this Report within 120 days after the end of the fiscal year to which this Report relates.

## Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated by reference to our definitive proxy statement relating to our 2020 annual meeting of stockholders or will be included by amendment to this Report within 120 days after the end of the fiscal year to which this Report relates.

## Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference to our definitive proxy statement relating to our 2020 annual meeting of stockholders or will be included by amendment to this Report within 120 days after the end of the fiscal year to which this Report relates.

## Item 14. Principal Accounting Fees and Services.

The information required by this item is incorporated by reference to our definitive proxy statement relating to our 2020 annual meeting of stockholders or will be included by amendment to this Report within 120 days after the end of the fiscal year to which this Report relates.

## PART IV

### Item 15. Exhibits and Financial Statement Schedules

1. Financial Statements

The information required by this item is included in Item 8 of Part II of this Report.

2. Financial Statement Schedules

Financial Statement Schedules are omitted because of the absence of the conditions under which they are required or because the information required by such omitted schedules is set forth in the financial statements or the notes thereto.

3. Exhibits

| Exhibit No. | Exhibit Description |
|---|---|
| 3.1 | Certificate of Conversion of MagnaChip Semiconductor LLC (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed on March 11, 2011). |
| 3.2 | Certificate of Incorporation of MagnaChip Semiconductor Corporation (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed on March 11, 2011). |
| 3.3 | Amended and Restated Bylaws of MagnaChip Semiconductor Corporation (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed on May 6, 2016). |
| 3.4 | Form of Plan of Conversion of MagnaChip Semiconductor LLC (incorporated by reference to Exhibit 3.6 to our Amendment No. 2 to Registration Statement on Form S-1 filed on May 11, 2010 (Registration No. 333-165467)). |
| 3.5 | Certificate of Designation, Preferences and Rights of Series A Junior Participating Preferred Stock of MagnaChip Semiconductor Corporation, as filed with the Secretary of the State of Delaware on March 6, 2015 (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed on March 6, 2015). |
| 4.1 | Indenture, dated as of July 18, 2013, between MagnaChip Semiconductor Corporation, as issuer, and Wilmington Trust, National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed on July 18, 2013). |
| 4.2 | First Supplemental Indenture, dated as of March 27, 2014, to Indenture, dated as of July 18, 2013, between MagnaChip Semiconductor Corporation, as issuer, and Wilmington Trust, National Association, as trustee (incorporated by reference to Exhibit 4.2 to our Current Report on Form 8-K filed on June 25, 2014). |
| 4.3 | Form of 6.625% Senior Notes due 2021 and notation of guarantee (included in Exhibit 4.1) |
| 4.4 | Indenture, dated as of January 17, 2017, among MagnaChip Semiconductor S.A., as issuer, MagnaChip Semiconductor Corporation, as guarantor, and US Bank National Association, as trustee (incorporated by reference to Exhibit 4.6 to our Annual Report on Form 10-K filed on February 21, 2017). |
| 4.5 | Form of 5.00% Exchangeable Senior Note due 2021 and note guarantee (included in Exhibit 4.4) |
| 4.6 | Description of Securities |
| 10.1 | Intellectual Property License Agreement, dated as of October 6, 2004, by and between Hynix Semiconductor Inc. and MagnaChip Semiconductor, Ltd. (Korea) (incorporated by reference to Exhibit 10.2 to our Amendment No. 1 to Registration Statement on Form S-1 filed on April 20, 2010 (Registration No. 333-165467)). |

| Exhibit No. | Exhibit Description |
|---|---|
| 10.2(1) | Land Lease and Easement Agreement, dated as of October 6, 2004, by and between Hynix Semiconductor Inc. and MagnaChip Semiconductor, Ltd. (Korea) (incorporated by reference to Exhibit 10.3 to our Amendment No. 1 to Registration Statement on Form S-1 filed on April 20, 2010 (Registration No. 333-165467)). |
| 10.3 | First Amendment to Land Lease and Easement Agreement, dated as of December 30, 2005, by and between Hynix Semiconductor Inc. and MagnaChip Semiconductor, Ltd. (Korea) (incorporated by reference to Exhibit 10.4 to our Amendment No. 1 to Registration Statement on Form S-1 filed on April 20, 2010 (Registration No. 333-165467)). |
| 10.4(1) | General Service Supply Agreement, dated as of October 6, 2004, by and between Hynix Semiconductor Inc. and MagnaChip Semiconductor, Ltd. (Korea) (incorporated by reference to Exhibit 10.5 to Amendment No. 2 to MagnaChip Semiconductor S.A.'s and MagnaChip Semiconductor Finance Company's Registration Statement on Form S-4 (Registration No. 333-168516) filed on October 14, 2010). |
| 10.5 | First Amendment to the General Service Supply Agreement, dated as of December 30, 2005, by and between Hynix Semiconductor Inc. and MagnaChip Semiconductor, Ltd. (Korea) (incorporated by reference to Exhibit 10.6 to our Amendment No. 1 to Registration Statement on Form S-1 filed on April 20, 2010 (Registration No. 333-165467)). |
| 10.6(1) | License Agreement (ModularBCD), dated as of March 18, 2005, by and between Advanced Analogic Technologies, Inc. and MagnaChip Semiconductor, Ltd. (Korea) (incorporated by reference to Exhibit 10.7 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.7(1) | Amended & Restated License Agreement (TrenchDMOS), dated as of September 19, 2007, by and between Advanced Analogic Technologies, Inc. and MagnaChip Semiconductor, Ltd. (Korea) (incorporated by reference to Exhibit 10.8 to Amendment No. 2 to MagnaChip Semiconductor S.A.'s and MagnaChip Semiconductor Finance Company's Registration Statement on Form S-4 (Registration No. 333-168516) filed on October 14, 2010). |
| 10.8(1) | Technology License Agreement, dated as of December 16, 1996, by and between Advanced RISC Machines Limited and MagnaChip Semiconductor, Ltd. (Korea) (successor in interest to LG Semicon Company Limited) (incorporated by reference to Exhibit 10.9 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.9(1) | Amendment to the Technology License Agreement, dated as of October 16, 2006, by and between ARM Limited and MagnaChip Semiconductor, Ltd. (Korea) (incorporated by reference to Exhibit 10.10 to Amendment No. 2 to MagnaChip Semiconductor S.A.'s and MagnaChip Semiconductor Finance Company's Registration Statement on Form S-4 (Registration No. 333-168516) filed on October 14, 2010). |
| 10.10(1) | ARM7201TDSP Device License Agreement, dated as of August 26, 1997, by and between Advanced RISC Machines Limited and MagnaChip Semiconductor, Ltd. (Korea) (successor in interest to LG Semicon Company Limited) (incorporated by reference to Exhibit 10.11 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.11(1) | Technology License Agreement, dated as of October 5, 1995, by and between Advanced RISC Machines Limited and MagnaChip Semiconductor, Ltd. (Korea) (successor in interest to LG Semicon Company Limited) (incorporated by reference to Exhibit 10.12 to Amendment No. 2 to MagnaChip Semiconductor S.A.'s and MagnaChip Semiconductor Finance Company's Registration Statement on Form S-4 (Registration No. 333-168516) filed on October 14, 2010). |

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| Exhibit No. | Exhibit Description |
|---|---|
| 10.12(1) | Technology License Agreement, dated as of July 2001, by and between ARM Limited and MagnaChip Semiconductor, Ltd. (Korea) (successor in interest to Hynix Semiconductor Inc.) (incorporated by reference to Exhibit 10.13 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.13(1) | Technology License Agreement, dated as of August 22, 2001, by and between ARM Limited and MagnaChip Semiconductor, Ltd. (Korea) (successor in interest to Hynix Semiconductor Inc.) (incorporated by reference to Exhibit 10.14 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.14 | Technology License Agreement, dated as of May 20, 2004, by and between ARM Limited and MagnaChip Semiconductor, Ltd. (Korea) (successor in interest to Hynix Semiconductor Inc.) (incorporated by reference to Exhibit 10.15 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.15(1) | Design Migration Agreement, dated as of May 1, 2007, by and between ARM Limited and MagnaChip Semiconductor, Ltd. (Korea) (incorporated by reference to Exhibit 10.16 to Amendment No. 2 to MagnaChip Semiconductor S.A.'s and MagnaChip Semiconductor Finance Company's Registration Statement on Form S-4 (Registration No. 333-168516) filed on October 14, 2010). |
| 10.16 | Basic Contract on Joint Development and Grant of License, dated as of November 10, 2006, by and between MagnaChip Semiconductor, Ltd. and Silicon Works Co., Ltd. (English translation) (incorporated by reference to Exhibit 10.17 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.17 | Amendment to Basic Contract on Joint Development and Grant of License, dated as of May 18, 2016, by and between MagnaChip Semiconductor, Ltd. and Silicon Works Co., Ltd. (English translation) (incorporated by reference to Exhibit 10.2 to our Quarterly Report on Form 10-Q filed on August 5, 2016). |
| 10.18 | [reserved] |
| 10.19* | MagnaChip Semiconductor LLC 2009 Common Unit Plan (incorporated by reference to Exhibit 10.20 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.20* | MagnaChip Semiconductor LLC 2009 Common Unit Plan form of Option Agreement (Non-U.S. Participants) (incorporated by reference to Exhibit 10.21 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.21* | MagnaChip Semiconductor LLC 2009 Common Unit Plan form of Option Agreement (U.S. Participants) (incorporated by reference to Exhibit 10.22 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.22* | MagnaChip Semiconductor LLC 2009 Common Unit Plan form of Restricted Unit Agreement (Non-U.S. Participants). Incorporated by reference to Exhibit 10.23 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467). |
| 10.23* | MagnaChip Semiconductor LLC 2009 Common Unit Plan form of Restricted Unit Agreement (U.S. Participants) (incorporated by reference to Exhibit 10.24 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.24* | MagnaChip Semiconductor Corporation 2011 Equity Incentive Plan (as amended on April 26, 2018) (incorporated by reference to Exhibit 10.24 to our Annual Report on Form 10-K filed on February 22, 2019). |

| Exhibit No. | Exhibit Description |
|---|---|
| 10.25* | MagnaChip Semiconductor Corporation 2011 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.26 to our Amendment No 9 to the Registration Statement on Form S-1 filed on February 18, 2011 (Registration No. 333-165467)). |
| 10.26* | Offer Letter, dated as of June 20, 2007, by and between MagnaChip Semiconductor, Ltd. (Korea) and Tae Jong Lee (incorporated by reference to Exhibit 10.42 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.26-1* | Severance Agreement, dated November 3, 2015, from MagnaChip Semiconductor, Ltd. (Korea) and MagnaChip Semiconductor Corporation to Tae Jong Lee (incorporated by reference to Exhibit 10.5 to our Quarterly Report on Form 10-Q filed on November 6, 2015). |
| 10.26-2* | Separation Agreement, dated as of January 9, 2019 among MagnaChip Semiconductor, Ltd. (Korea), MagnaChip Semiconductor Corporation and Tae Jong Lee (incorporated by reference to Exhibit 10.26-2 to our Annual Report on Form 10-K filed on February 22, 2019). |
| 10.27* | MagnaChip Semiconductor Corporation Form of Indemnification Agreement with Directors and Officers (incorporated by reference to Exhibit 10.49 to our Registration Statement on Form S-1 filed on March 15, 2010 (Registration No. 333-165467)). |
| 10.28* | Offer Letter, dated as of March 8, 2014, by and between MagnaChip Semiconductor, Ltd. (Korea) and Jonathan W. Kim (incorporated by reference to Exhibit 10.35 to our Annual Report on Form 10-K filed on February 12, 2015). |
| 10.28-1* | Severance Agreement, dated November 3, 2015, from MagnaChip Semiconductor, Ltd. (Korea) and MagnaChip Semiconductor Corporation to Jonathan W. Kim (incorporated by reference to Exhibit 10.3 to our Quarterly Report on Form 10-Q filed on November 6, 2015). |
| 10.29* | Offer Letter, dated as of April 15, 2013, by and between MagnaChip Semiconductor, Ltd. (Korea) and Young-Joon Kim (incorporated by reference to Exhibit 10.36 to our Annual Report on Form 10-K filed on February 12, 2015). |
| 10.29-1* | Amendment of Offer Letter, dated July 27, 2015, from MagnaChip Semiconductor, Ltd. (Korea) to Young-Joon Kim (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q filed on November 6, 2015). |
| 10.29-2* | Severance Agreement, dated November 3, 2015, from MagnaChip Semiconductor, Ltd. (Korea) and MagnaChip Semiconductor Corporation to Young-Joon Kim (incorporated by reference to Exhibit 10.2 to our Quarterly Report on Form 10-Q filed on November 6, 2015). |
| 10.29-3* | Employment Agreement, dated as of April 26, 2018, by and between MagnaChip Semiconductor Corporation and Young Joon Kim (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on April 27, 2018). |
| 10.29-4* | Amendment to Employment Agreement by and between MagnaChip Semiconductor Corporation and Young Joon Kim, dated as of September 3, 2018 (incorporated by reference to Exhibit 10.29-4 to our Annual Report on Form 10-K filed on February 22, 2019). |
| 10.29-5* | Form of Restricted Stock Units Agreement for Chief Executive Officer (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed on April 27, 2018). |
| 10.29-6* | Form of Restricted Stock Units Agreement (TSR Performance) for Chief Executive Officer (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed on April 27, 2018). |
| 10.29-7* | Form of Restricted Stock Units Agreement (AOP Performance) for Chief Executive Officer (incorporated by reference to Exhibit 10.4 to our Current Report on Form 8-K filed on April 27, 2018). |
| 10.30* | Offer Letter, dated as of September 27, 2013, by and between MagnaChip Semiconductor, Ltd. (Korea) and Theodore Kim (incorporated by reference to Exhibit 10.37 to our Annual Report on Form 10-K filed on February 12, 2015). |

| Exhibit No. | Exhibit Description |
|---|---|
| 10.30-1* | Severance Agreement, dated November 3, 2015, from MagnaChip Semiconductor, Ltd. (Korea) and MagnaChip Semiconductor Corporation to Theodore S. Kim (incorporated by reference to Exhibit 10.4 to our Quarterly Report on Form 10-Q filed on November 6, 2015). |
| 10.30-2* | Employment Agreement, dated as of October 22, 2018, by and between MagnaChip Semiconductor Corporation and Theodore Kim (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on October 26, 2018). |
| 10.31* | Offer Letter, dated as of October 16, 2013, by and between MagnaChip Semiconductor, Ltd. (Korea) and Woung Moo Lee (incorporated by reference to Exhibit 10.36 to our Annual Report on Form 10-K filed on February 22, 2016). |
| 10.31-1* | Severance Agreement, dated November 3, 2015, from MagnaChip Semiconductor, Ltd. (Korea) and MagnaChip Semiconductor Corporation to Woung Moo Lee (incorporated by reference to Exhibit 10.6 to our Quarterly Report on Form 10-Q filed on November 6, 2015). |
| 10.31-2* | Employment Agreement, dated as of October 22, 2018, by and between MagnaChip Semiconductor Corporation and Woung Moo Lee (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed on October 26, 2018). |
| 10.32* | MagnaChip Semiconductor LLC Profit Sharing Plan as adopted on December 31, 2009 and amended on February 15, 2010 (incorporated by reference to Exhibit 10.54 to our Quarterly Report on Form 10-Q filed on August 5, 2011). |
| 10.33* | MagnaChip Semiconductor Corporation 2011 Form of Stock Option Agreement (U.S. Participants) (incorporated by reference to Exhibit 10.55 to our Amendment No 9 to the Registration Statement on Form S-1 filed on February 18, 2011 (Registration No. 333-165467)). |
| 10.34* | MagnaChip Semiconductor Corporation 2011 Form of Stock Option Agreement (Non-U.S. Participants) (incorporated by reference to Exhibit 10.56 to our Amendment No 9 to the Registration Statement on Form S-1 filed on February 18, 2011 (Registration No. 333-165467)). |
| 10.35* | MagnaChip Semiconductor Corporation 2011 Form of Restricted Stock Units Agreement (U.S. Participants) (incorporated by reference to Exhibit 10.57 to our Amendment No 9 to the Registration Statement on Form S-1 filed on February 18, 2011 (Registration No. 333-165467)). |
| 10.36* | MagnaChip Semiconductor Corporation 2011 Form of Restricted Stock Units Agreement (Non-U.S. Participants) (incorporated by reference to Exhibit 10.58 to our Amendment No 9 to the Registration Statement on Form S-1 filed on February 18, 2011 (Registration No. 333-165467)). |
| 10.37* | MagnaChip Semiconductor Corporation 2011 Form of Restricted Stock Agreement (U.S. Participants) (incorporated by reference to Exhibit 10.59 to our Amendment No 9 to the Registration Statement on Form S-1 filed on February 18, 2011 (Registration No. 333-165467)). |
| 10.38* | MagnaChip Semiconductor Corporation 2011 Form of Restricted Stock Agreement (Non-U.S. Participants) (incorporated by reference to Exhibit 10.60 to our Amendment No 9 to the Registration Statement on Form S-1 filed on February 18, 2011 (Registration No. 333-165467)). |
| 10.39* | MagnaChip Semiconductor Corporation 2011 Form of Restricted Stock Units Agreement (Nonemployee Director) (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q filed on May 6, 2016). |
| 10.40* | Form of Restricted Stock Units Agreement (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed on October 26, 2018). |

| Exhibit No. | Exhibit Description |
|---|---|
| 10.41* | Form of Restricted Stock Units Agreement (TSR Performance) (incorporated by reference to Exhibit 10.4 to our Current Report on Form 8-K filed on October 26, 2018). |
| 10.42* | Form of Restricted Stock Units Agreement (AOP Performance) (incorporated by reference to Exhibit 10.5 to our Current Report on Form 8-K filed on October 26, 2018). |
| 21.1 | Subsidiaries of the Registrant (incorporated by reference to Exhibit 21.1 to our Annual Report on Form 10-K filed on February 12, 2015) |
| 23.1# | Consent of Samil PricewaterhouseCoopers |
| 31.1# | Certification of Chief Executive Officer required by Rule 13(a)-14(a), as adopted pursuant to § 302 of the Sarbanes-Oxley Act of 2002 |
| 31.2# | Certification of Chief Financial Officer required by Rule 13(a)-14(a), as adopted pursuant to § 302 of the Sarbanes-Oxley Act of 2002 |
| 32.1† | Certification of Chief Executive Officer required by 18 U.S.C § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 |
| 32.2† | Certification of Chief Financial Officer required by 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 |
| 101.INS# | XBRL Instance Document |
| 101.SCH# | XBRL Taxonomy Extension Schema Document |
| 101.CAL# | XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.DEF# | XBRL Taxonomy Extension Definition Linkbase Document |
| 101.LAB# | XBRL Taxonomy Extension Label Linkbase Document |
| 101.PRE# | XBRL Taxonomy Extension Presentation Linkbase Document |

Footnotes:

(1) Certain portions of this document have been omitted pursuant to a grant of confidential treatment by the SEC.
* Management contract, compensatory plan or arrangement
# Filed herewith
† Furnished herewith

**Item 16. Form 10-K Summary**

None.

## 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.

**MAGNACHIP SEMICONDUCTOR CORPORATION**

| | |
|---|---|
| By: | /s/ Young-Joon Kim |
| Name: | Young-Joon Kim |
| Title: | Chief Executive Officer and Director |
| Date: | February 21, 2020 |

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.

| | Date |
|---|---|
| /s/ Young-Joon Kim<br>Young-Joon Kim, *Chief Executive Officer and Director (Principal Executive Officer)* | February 21, 2020 |
| /s/ Jonathan W. Kim<br>Jonathan W. Kim, *Chief Financial Officer, Executive Vice President and Chief Accounting Officer (Principal Financial and Accounting Officer)* | February 21, 2020 |
| /s/ Melvin Keating<br>Melvin Keating, *Director* | February 21, 2020 |
| /s/ Ilbok Lee<br>Ilbok Lee, *Director* | February 21, 2020 |
| /s/ Camillo Martino<br>Camillo Martino, *Director* | February 21, 2020 |
| /s/ Gary Tanner<br>Gary Tanner, *Director* | February 21, 2020 |
| /s/ Nader Tavakoli<br>Nader Tavakoli, *Non-Executive Chairman of the Board of Directors* | February 21, 2020 |

**Exhibit 4.6**

# DESCRIPTION OF REGISTRANT'S SECURITIES

The following brief description of the capital stock of MagnaChip Semiconductor Corporation ("us", "our", "we", or the "Company") is a summary. This summary is not complete and is subject to and qualified in its entirety by reference to the complete text of our Certificate of Incorporation ("Certificate of Incorporation"), and our Amended and Restated Bylaws ("Bylaws") previously filed with the U.S. Securities and Exchange Commission and incorporated by reference as an exhibit to this Annual Report on Form 10-K of which this Exhibit 4.6 forms a part. We encourage you to read the Certificate of Incorporation and Bylaws carefully.

## General

The Certificate of Incorporation provides that the Company may issue 155,000,000 shares of capital stock, of which 150,000,000 shares are designated as common stock, par value $0.01 per share, and 5,000,000 shares are designated as of preferred stock, par value $0.01 per share.

## Common Stock

*Voting Rights*

Holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders. Our stockholders do not have cumulative voting rights in the election of directors. Except as required by law or our Certificate of Incorporation and Bylaws, the vote of a majority of the shares represented in person or by proxy at any meeting at which a quorum is present will be sufficient for the transaction of any business at a meeting.

*Dividends*

Subject to preferences held by, or that may be granted to, any outstanding shares of preferred stock, holders of our common stock will be entitled to receive ratably those dividends as may be declared by our board of directors out of funds legally available for such distributions, as well as any other distributions made to our stockholders.

*Other Rights*

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

Holders of our common stock have no preemptive or other subscription or conversion rights.

There are no redemption or sinking fund provisions applicable to our common stock.

## Preferred Stock

The Certificate of Incorporation authorizes the issuance of 5,000,000 shares of blank check preferred stock with such designation, rights and preferences as may be determined from time to time by our board of directors. Accordingly, our board of directors is empowered, without stockholder approval, to issue preferred stock with dividend, liquidation, conversion, voting or other rights which could adversely affect the voting power or other rights of the holders of common stock. The preferred stock could be utilized as a method of discouraging, delaying or preventing a change in control of us.

**Exhibit 4.6**

## Certain Anti-Takeover Effects of Delaware Law

We are subject to the provisions of Section 203 of the Delaware General Corporation Law (the “DGCL”), regulating corporate takeovers and which has an anti-takeover effect with respect to transactions not approved in advance by our board of directors, including discouraging takeover attempts that might result in a premium over the market price for shares of our common stock. In general, those provisions prohibit a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder, unless:

- the transaction is approved by the board of directors before the date the interested stockholder attained that status;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or
- on or after such date, the business combination is approved by the board of directors and authorized at a meeting of stockholders, and not by written consent, by at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

In general, DGCL Section 203 defines a business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, DGCL Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by any such entity or person.

A Delaware corporation may opt out of this provision by express provision in its original certificate of incorporation or by amendment to its certificate of incorporation or bylaws approved by its stockholders. However, we have not opted out of this provision.

Exhibit 4.6

**Certain Provisions of the Certificate of Incorporation and Bylaws**

Provisions in the Certificate of Incorporation and Bylaws may have the effect of delaying or preventing a change of control or changes in our management. Among other things, the Certificate of Incorporation and Bylaws:

- authorize our board of directors to issue, without stockholder approval, preferred stock with such terms as our board of directors may determine;
- prohibit action by written consent of our stockholders;
- prohibit any person other than our board of directors, the chairman of our board of directors, our Chief Executive Officer or holders of at least 25% of the voting power of all then outstanding shares of capital stock of the corporation entitled to vote generally in the election of directors to call a special meeting of our stockholders; and
- specify advance notice requirements for stockholder proposals and director nominations.

Our common stock is listed on The New York Stock Exchange under the symbol "MX."

**Transfer Agent and Registrar**

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

**Exhibit 23.1**

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-172864, 333-180696, 333-186789, 333-202120, 333-209756, 333-216204, 333-223155 and 333-229811) of MagnaChip Semiconductor Corporation of our report dated February 21, 2020 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ Samil PricewaterhouseCoopers
Seoul, Korea
February 21, 2020

**Exhibit 31.1**

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER**
**PURSUANT TO**
**SECTION 302 OF THE**
**SARBANES-OXLEY ACT OF 2002**

I, Young-Joon Kim, certify that:

1. I have reviewed this annual report on Form 10-K of MagnaChip Semiconductor Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Dated: February 21, 2020

/s/ Young-Joon Kim
Young-Joon Kim
Chief Executive Officer
(Principal Executive Officer)

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO
SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002**

I, Jonathan W. Kim, certify that:

1. I have reviewed this annual report on Form 10-K of MagnaChip Semiconductor Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 21, 2020

/s/ Jonathan W. Kim

Jonathan W. Kim
Chief Financial Officer
(Principal Financial and Accounting Officer)

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER**
**PURSUANT TO**
**18 U.S.C. SECTION 1350,**
**AS ADOPTED PURSUANT TO**
**SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of MagnaChip Semiconductor Corporation (the "Company") hereby certifies, to such officer's knowledge, that:

(i) the Annual Report on Form 10-K of the Company for the year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

Dated: February 21, 2020

/s/ Young-Joon Kim
Young-Joon Kim
Chief Executive Officer
(Principal Executive Officer)

The foregoing certification is being furnished solely pursuant to 18 U.S.C. § 1350 and shall not be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934, as amended or incorporated by reference in any registration statement of the Company filed under the Securities Act of 1933, as amended.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

**Exhibit 32.2**

**CERTIFICATION OF CHIEF FINANCIAL OFFICER**
**PURSUANT TO**
**18 U.S.C. SECTION 1350,**
**AS ADOPTED PURSUANT TO**
**SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of MagnaChip Semiconductor Corporation (the "Company") hereby certifies, to such officer's knowledge, that:

(i) the Annual Report on Form 10-K of the Company for the year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

Dated: February 21, 2020

/s/ Jonathan W. Kim
Jonathan W. Kim
Chief Financial Officer
(Principal Financial and Accounting Officer)

The foregoing certification is being furnished solely pursuant to 18 U.S.C. § 1350 and shall not be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934, as amended or incorporated by reference in any registration statement of the Company filed under the Securities Act of 1933, as amended.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.