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

FORM 10-K

(MARK ONE)
☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended June 30, 2022

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 001-34717

Alpha and Omega Semiconductor Limited
(Exact name of Registrant as Specified in its Charter)

Bermuda	77-0553536
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification Number)**

Clarendon House, 2 Church Street
Hamilton HM 11, Bermuda
(Address of Principal Registered Offices including Zip Code)
(408) 830-9742
(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares, $0.002 par value per share	**AOSL**	**The NASDAQ Global Select Market**

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

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

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

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

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

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

Large accelerated filer	☒	Accelerated filer	☐	Non-accelerated filer (Do not check if a smaller reporting company)	☐
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 has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

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

The aggregate market value of the voting shares held by non-affiliates of the registrant as of December 31, 2021 was approximately $1,327 million based on the closing price of the registrant's common share as reported on the NASDAQ Global Select Market on December 31, 2021 (the last business day of the registrant's most recently completed second fiscal quarter). The common shares of the registrant held by each executive officer and director and certain affiliated shareholders who beneficially owned 10% or more of the outstanding common stock of the registrant have been excluded in such calculation as such persons and entities may be deemed to be affiliates of the registrant. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

There were 27,397,273 shares of the registrant's common shares outstanding as of August 31, 2022.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the registrant's 2022 Annual General Meeting of Shareholders are incorporated by reference into Part III of this Form 10-K to the extent stated herein. The Definitive Proxy Statement is expected to be filed within 120 days of the registrant's fiscal year ended June 30, 2022.

Alpha and Omega Semiconductor Limited
Form 10-K
For the Year Ended June 30, 2022
TABLE OF CONTENTS

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PART I

Item 1. Business

Forward Looking Statements

This Annual Report on Form 10-K and the documents incorporated herein by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are subject to the "safe harbor" created by those sections. Forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "intend," "would," "expect," "plan," "anticipate," "believe," "estimate," "project," "predict," "potential" and similar expressions intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors, which may cause our actual results, performance, time frames or achievements to be materially different from any future results, performance, time frames or achievements expressed or implied by the forward-looking statements. We discuss many of these risks, uncertainties and other factors in this Annual Report on Form 10-K in greater detail in Item 1A."Risk Factors." Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this filing. You should read this Annual Report on Form 10-K in its entirety and with the understanding that our actual future results may be materially different from what we expect. We hereby qualify our forward-looking statements by these cautionary statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

Overview

We are a designer, developer and global supplier of a broad portfolio of power semiconductors. Our portfolio of power semiconductors includes approximately 2,500 products, and has grown significantly with the introduction of over 130 new products in the fiscal year ended June 30, 2022, and over 160 new products in each of the fiscal years ended June 30, 2021 and 2020, respectively. Our teams of scientists and engineers have developed extensive intellectual properties and technical knowledge that encompass major aspects of power semiconductors, which we believe enables us to introduce and develop innovative products to address the increasingly complex power requirements of advanced electronics. We have an extensive patent portfolio that consists of 888 patents and 62 patent applications in the United States as of June 30, 2022. We also have a total of 936 foreign patents, which were based primarily on our research and development efforts through June 30, 2022. We differentiate ourselves by integrating our expertise in technology, design, and advanced packaging to optimize product performance and cost. Our portfolio of products targets high-volume applications, including portable computers, graphics cards, flat panel TVs, home appliances, power tools, smart phones, battery packs, consumer and industrial motor controls and power supplies for TVs, computers, servers and telecommunications equipment.

During the fiscal year ended June 30, 2022, we continued our diversification strategy by developing new silicon and packaging platforms to expand our serviceable available market, or SAM, and offer higher performance products. Our metal-oxide-semiconductor field-effect transistors, or MOSFET, portfolio expanded significantly across a full range of voltage applications. We also developed new technologies and products designed to penetrate into markets beyond our MOSFET computing base, including the consumer, communications and industrial markets, Insulated Gate Bipolar Transistors, or IGBTs for the home appliance market, as well as power ICs for next generation computing and gaming applications.

Our business model leverages global resources, including research and development and manufacturing in the United States and Asia. Our sales and technical support teams are localized in several growing markets around the world. We operate an 8-inch wafer fabrication facility located in Hillsboro, Oregon (the "Oregon fab"), which is critical for us to accelerate proprietary technology development, new product introduction and improve our financial performance. Recently we expanded and upgraded our manufacturing capabilities at the Oregon Fab. The expansion is expected to be completed in the fiscal quarter ending March 31, 2023. To meet the market demand for more mature high-volume products, we also utilize the wafer manufacturing capacity of selected third party foundries. For assembly and test, we primarily rely upon our in-house facilities in China. In addition, we utilize subcontracting partners for industry standard packages. We believe our in-house packaging and testing capability provides us with a competitive advantage in proprietary packaging technology, product quality, costs and sales cycle time.

On March 29, 2016, the Company entered into a joint venture contract (the "JV Agreement") with two investment funds owned by the Municipality of Chongqing (the "Chongqing Funds"), pursuant to which the Company and the Chongqing Funds formed a joint venture, (the "JV Company"), for the purpose of constructing and operating a power semiconductor packaging, testing and 12-inch wafer fabrication facility (the "Chongqing Fab") in the LiangJiang New Area of Chongqing, China (the "JV

Transaction”). The Chongqing Fab is being built in phases. As of December 1, 2021, the Company owned 50.9%, and the Chongqing Funds owned 49.1% of the equity interest in the JV Company. The JV Company was accounted under the provisions of the consolidation guidance since the Company had controlling financial interest until December 1, 2021.

Effective December 1, 2021, the Company entered into a share transfer agreement (the “STA”) with a third-party investor (the “Investor”), pursuant to which the Company sold to the Investor approximately 2.1% of outstanding equity interest held by the Company in the JV Company for an aggregate purchase price of RMB 108 million or approximately $16.9 million (the “Transaction”). The Transaction was closed on December 2, 2021 (the “Closing Date”). As a result of the Transaction, as of the Closing Date, the Company’s equity interest in the JV Company decreased from 50.9% to 48.8%. Also, the Company’s right to designate directors on the board of JV Company was reduced to three (3) out of seven (7) directors from four (4) directors prior to the Transaction. As a result of the Transaction, AOS no longer had a controlling financial interest in the JV Company under generally accepted accounting principles. Loss of control is deemed to have occurred when, among other things, a parent company owns less than a majority of the outstanding equity interest in the subsidiary, lacks a controlling financial interest in the subsidiary and, is unable to unilaterally control the subsidiary through other means such as having, or the ability to obtain or represent, a majority of the subsidiary’s board of directors. Because of these factors, as of December 2, 2021, the Company ceased having control over the JV Company. Therefore, the Company deconsolidated the financial statements of the JV Company as of that date. Subsequently, the Company has accounted for its investment in the JV Company using the equity method of accounting.

On December 24, 2021, the Company entered into a share transfer agreement with another third-party investor, pursuant to which the Company sold to this investor 1.1% of outstanding equity interest held by the Company in the JV Company for an aggregate purchase price of RMB 60 million, or approximately $9.4 million. In addition, on December 30, 2021, the JV Company adopted an employee equity incentive plan and issued an equity interest equivalent to 3.99% of the JV Company in exchange for cash. As a result, the Company owned 45.8% of the equity interest in the JV Company as of December 31, 2021.

On January 26, 2022, the JV Company completed a financing transaction pursuant to a corporate financing agreement (the “Financing Agreement”) between the JV Company and certain third-party investors (the “New Investors”). Under the Financing Agreement, the New Investors purchased newly issued equity interest of the JV Company for a total purchase price of RMB 509 million (or approximately $80 million based on the currency exchange rate as of January 26, 2022) (the “Investment”). Immediately following the closing of the Investment, the percentage of outstanding JV Company equity interest beneficially owned by the Company was further reduced to 42.2%.

We were incorporated in Bermuda on September 27, 2000 as an exempted limited liability company. The address of our registered office is Clarendon House, 2 Church Street, Hamilton HM 11, Bermuda. The address of our U.S. office is Alpha and Omega Semiconductor Incorporated, 475 Oakmead Parkway, Sunnyvale, CA 94085. Telephone number of our U.S. office is (408) 830-9742. We have incorporated various wholly-owned subsidiaries in different jurisdictions, and a subsidiary (the JV Company) in which we have a minority interest. Please refer to Exhibit 21.1 to this Form 10-K for a complete list of our subsidiaries.

Our industry

Semiconductors are electronic devices that perform a variety of functions, such as converting or controlling signals, processing data and delivering or managing power. With advances in semiconductor technology, the functionality and performance of semiconductors have generally increased over time, while size and cost have generally decreased. These advances have led to a proliferation of more complex semiconductors being used in a wide variety of consumer, computing, communications and industrial markets and have contributed to the growth of the semiconductor industry. This has been accelerated by more regulations governing energy efficiency in many end applications.

Analog semiconductors

The semiconductor industry is segmented into analog and digital. Analog semiconductors process light, sound, motion, radio waves and electrical currents and voltages. In contrast, digital semiconductors process binary signals represented by a sequence of ones and zeros.

As a result of these fundamental differences, the analog semiconductor industry is distinct from the digital semiconductor industry in terms of the complexity of design and the length of product cycle. Improper interactions between analog circuit elements can potentially render an electronic system inoperable. Experienced engineers engaged in the design process are necessary because computer-aided design cannot fully model the behavior of analog circuitry. Therefore, experienced analog engineers with requisite knowledge are in great demand but short supply worldwide. In addition, analog semiconductors tend to have a longer product life cycle because original design manufacturers, or ODMs and original equipment manufacturers, or OEMs typically design the analog portions of a system to span multiple generations of their products. Once designed into an application, the analog portion is rarely modified because even a slight change to the analog portion can cause unexpected interactions with other components, resulting in system instability.

Power semiconductors

Power semiconductors are a subset of the analog semiconductor sector with their own set of characteristics unique to system power architecture and function. Power semiconductors transfer, manage and switch electricity to deliver the appropriate amount of voltage or current to a broad range of electronic systems and also protect electronic systems from damage resulting from excessive or inadvertent electrical charges.

Power semiconductors can be either discrete devices, which typically comprise only a few transistors or diodes, or ICs, which incorporate a greater number of transistors. The function of power discrete devices is power delivery by switching, transferring or converting electricity. Power transistors comprise the largest portion of the power discrete device market. Power ICs, sometimes referred to as power management ICs, perform power delivery and power management functions, such as controlling and regulating voltage and current and controlling power discrete devices.

The growth of the power semiconductor market in recent years has several key drivers. The proliferation of computer and consumer electronics, such as notebooks, tablets, smart phones, flat panel displays and portable media players created the need for sophisticated power management to improve power efficiency and extend battery life. The evolution of these products is characterized by increased functionality, thinner or smaller form factors and decreasing prices. Our Power IC and low voltage (5V-40V) MOSFET products address this market. In the area of AC-DC power supplies for electronic equipment, data centers and servers, the market is characterized by a continuous demand for energy conservation through higher efficiency, which is driving the need for our medium voltage (40V-400V) and high voltage (500V-1000V) MOSFET products. The increased application of power semiconductors to control motors in white goods and industrial applications, is driving demand for Insulated Gate Bipolar Transistors, or IGBTs. IGBTs are also being used in renewable energy and automotive applications.

The evolution toward smaller form factors and complex power requirements in the low voltage areas has driven further integration in power semiconductors, resulting in power ICs that incorporate the functionalities of both power management and power delivery in a single device. Power ICs can be implemented by incorporating all necessary power functions either on one piece of silicon or multiple silicon chips encapsulated into a single device. Additionally, the advancement in semiconductor packaging technology enables increased power density and shrinking form factors.

Power semiconductor suppliers develop and manufacture their products using various approaches which tend to fall across a wide spectrum of balancing cost savings with proprietary technology advantages. At one end of the spectrum are integrated design manufacturers, or IDMs, which own and operate the equipment used in the manufacturing process and design and manufacture products at their in-house facilities. IDMs exercise full control over the implementation of process technologies and have maximum flexibility in setting priorities for their production and delivery schedules. At the other end of the spectrum are completely-outsourced fabless semiconductor companies, which rely entirely on off-the-shelf technologies and processes provided by their manufacturing partners. These companies seek to reduce or eliminate fixed costs by outsourcing both product manufacturing and development of process technologies to third parties. Our model seeks to achieve the best balance between technological advancement and cost effectiveness by using a dedicated in-house technology research and development team to drive rapid new product developments, while utilizing both in-house and third-party foundry capacity for our products. This is particularly important in the development of power semiconductor products due to the unique nature of their technology. While digital technologies are highly standardized in leading foundries, power semiconductor technologies tend to be more unique as they seek to accommodate a wider range of voltage applications. Accordingly, third-party foundries, which are primarily designed and established for digital technologies, may have limited capabilities when it comes to the development of new power semiconductor technologies.

Our strategies

Our strategy is to advance our position as a leading designer, developer and global supplier of a broad portfolio of power semiconductors. To accomplish this, we have adopted a strategy that allows us to accelerate the development of our proprietary technology at our in-house fabrication facilities, bring new products to market faster, and improve our financial performance in the long run. This model also provides quicker response to our customer demands, enhances relationships with strategic customers, and provides flexibility in capacity management and geographic diversification of our wafer supply chain. Our in-house manufacturing capability allows us to retain a higher level of control over the development and application of our proprietary process technology, thereby reducing certain operational risks and costs associated with utilizing third-party foundries. We recently commenced a plan to enhance the manufacturing capability and capacity of our Oregon Fab by investing in new equipment and expanding our factory facilities, which we expect will have a positive impact on our future new product development and revenue, particularly during the period of global shortage of capacity. The expansion is expected to be completed in the fiscal quarter ending March 31, 2023.

Although our largest end-market is the personal computing ("PC") market, we have successfully diversified our business by expanding into other markets, including the consumer, communications, power supply and industrial markets. While we have made progress in our diversification and expansion into additional applications, we continue to support and grow our PC business by expanding bill-of-material content, gaining market share, and acquiring new customers.

We plan to further expand the breadth of our product portfolio to increase our total bill-of-materials within an electronic system and to address the power requirements of additional electronic systems. Our product portfolio currently consists of approximately 2,500 products and we have introduced over 130 new products in this past fiscal year. We will continue to leverage our expertise to further increase our product lines, including higher performance power ICs, IGBTs and high, medium and low voltage MOSFETs, in order to broaden our addressable market and improve our margin profile. We are also in the process of developing a digital power controller and smart power stage product lines based on the technology that we licensed from STMicro. We believe that our increased product offerings will allow us to penetrate new end-market applications and provide us with an important competitive advantage. OEMs and ODMs generally prefer to limit their supplier base to a smaller set of vendors capable of providing a comprehensive menu of products across multiple electronic platforms.

Leverage our power semiconductor expertise to drive new technology platforms

We believe that the ever-increasing demand for power efficiency in power semiconductors requires expertise in and a deep understanding of the interrelationship among device physics, process technologies, design and packaging. We also believe that engineers with experience and understanding of these multiple disciplines are in great demand but short supply. Within this context, we believe that we are well positioned to be a leader in providing total power management solutions because of our extensive pool of experienced scientists and engineers and our strong IP portfolio. Accordingly, we intend to leverage our expertise to increase the number of power discrete technology platforms and power IC designs, including future digital power controller products that are currently under development, to expand our product offerings and deliver complete power solutions for our targeted applications. In addition, our ability to develop new technology is enhanced by the operation of our own manufacturing facilities in Oregon and Chongqing.

Increase direct relationships and product penetration with OEM and ODM customers

We have developed direct relationships with key OEMs who are responsible for branding, designing and marketing a broad array of electronic products, as well as ODMs who have traditionally been responsible for manufacturing these products. While OEMs typically focus their design efforts on their flagship products, as the industry has evolved, ODMs are increasingly responsible for designing portions, or entire systems, of the products they manufacture for the OEMs. In addition, several ODMs are beginning to design, manufacture and brand their own proprietary products which they sell directly to consumers. We intend to strengthen our existing relationships and form new ones with both OEMs and ODMs by aligning our product development efforts with their product requirements, increasing the number of our products used within their systems, and leveraging our relationships to penetrate their other products. In addition, we are refocusing our research and development efforts to respond more directly to market demand by designing and developing new products based on feedback from our customers, which also allows us to reduce time-to-market and sales cycles.

Leverage global business model for cost-effective growth

We intend to continue to leverage our global resources and regional strengths. We will continue to deploy marketing, sales and technical support teams in close proximity to our end customers. We plan to further expand and align our technical marketing and application support teams along with our sales team to better understand and address the needs of our end customers and their end-market applications, in particular for those with the new technology platforms developed in this past year and in the future. This will assist us in identifying and defining new technology trends and products and to help us gain additional design wins. While we no longer retain a controlling interest in the JV Company, we expect to continue our strong relationship with the JV Company to support our manufacturing capacity, and we recently entered into a new agreement with the JV Company pursuant to which the JV Company agrees to provide us with a guaranteed supply of a fixed number of wafers until December 2023. In addition, we intend to continue to seek potential partners and collaborators to develop new technologies and products, as well as to explore other strategic transactions that will enable us to expand our manufacturing capacity and establish our global footprint.

Our products

To serve the large and diverse analog market for power semiconductors, we have created a broad product portfolio consisting of two major categories: power discretes and power ICs.

Our power discretes products consist primarily of low, medium and high voltage power MOSFETs. Our low voltage MOSFET series is based on our proprietary silicon and package technologies, with deep application know-how in various markets. We have precisely defined technology platforms to address different requirements from various applications. Our medium voltage MOSFETs provide optimized performance with high efficiency, high robustness and high reliability, and are widely used in applications such as TV backlighting, telecom power supplies, and industrial applications. We expanded our high voltage 600V and 700V MOSFET portfolio based on our aMOS5 technology platform to address robust consumer and industrial applications. Our high-voltage portfolio includes our proprietary insulated-gate bipolar transistor ("IGBT") technology, which we provide highly robust and easy-to-use solutions for industrial motor control and white goods applications. We have also released our first 1200V SiC (Silicon carbide) product based on our new AlphaSiC platform, designed to address high efficiency, high density industrial applications such as solar inverters, UPS, and battery management systems.

Our power ICs deliver power as well as control and regulate the power management variables, such as the flow of current and level of voltage. Our DrMOS family of products continued to grow as we paired our latest high performance MOSFET silicon with our latest Driver IC technologies. We continued to expand our EZBuck power IC family with products that feature lower on-resistance, less power consumption, smaller footprint and thermally enhanced packages. While we derive the majority of our revenue from the sales of power discretes products, sales of power ICs continued to gain traction during the past years. Our Type C smart load switch product line has also expanded as it offers reverse blocking capability, designed to protect applications against high voltage exposure.

The following table lists our product families and the principal end uses of our products:

Product Family	Description	Product Categories within Product Type	Typical Application
Power Discretes	Low on-resistance switch used for routing current and switching voltages in power control circuits High power switches used for power circuits	DC-DC for CPU/GPU DC-AC conversion AC-DC conversion Load switching Motor control Battery protection Power factor correction	Smart phone chargers, battery packs, notebooks, desktop and servers, data centers, base stations, graphics card, game boxes, TVs, AC adapters, power supplies, motor control, power tools, E-vehicles, white goods and industrial motor drives, UPS systems, solar inverters and industrial welding
Power ICs	Integrated devices used for power management and power delivery	DC-DC Buck conversion DC-DC Boost conversion Smart load switching DrMOS power stage	Flat panel displays, TVs, Notebooks, graphic cards, servers, DVD/Blu-Ray players, set-top boxes, and networking equipment
	Analog power devices used for circuit protection and signal switching	Transient voltage protection Analog switch Electromagnetic interference filter	Notebooks, desktop PCs, tablets, flat panel displays, TVs, smart phones, and portable electronic devices

Power discrete products

Power discretes are used across a wide voltage and current spectrum, requiring them to operate efficiently and reliably under harsh conditions. Due to this wide applicability across diverse end-market applications, we market general purpose MOSFETs that are used in multiple applications as well as MOSFETs targeted for specific applications.

Our current power discrete product line includes industry standard trench MOSFETs, SRFETs, XSFET, electrostatic discharge, protected MOSFETs, high and mid-voltage MOSFETs and IGBTs.

Power IC products

In addition to the traditional monolithic or single chip design, we employ a multi-chip approach for the majority of our power ICs. This multi-chip technique leverages our proprietary MOSFET and advanced packaging technologies to offer integrated solutions to our customers. This allows us to update product portfolios by interchanging only the MOSFETs without changing the power management IC, thereby reducing the time required for new product introduction and providing optimal solutions to our customers. We believe that our power IC products improve our competitive position by enabling us to provide higher power density solutions to our end customers than some of our competitors.

The incorporation of both power delivery and power management functions tends to make power ICs more application specific because these two functions have to be properly matched to a particular end product. We have local technical marketing and applications engineers who closely collaborate with our end customers to help ensure that power IC specifications are properly defined at the beginning of the design stage.

New Product Introduction

We introduced several new products based on our proprietary technology platform and continue to expand our product families.

During the fourth quarter of fiscal year of 2022, we introduced compact, 30V, 3A Buck Regulator Module. This device offers a simple, compact solution suited to a wide variety of applications such as industrial, factory automation, networking, and general-purpose point of load. We also introduced 2-in-1 super low capacitance TVS for USB4.0 & thunderbolt 4.0 & HDMI2.1 protection. This device provides the best solution for an ideal pin-out for differential signal, space saving of super high-speed interface application, and reduces the part counts on circuit board. We believe this new approach benefits customers to accomplish the best design and logistics management.

During the third quarter of fiscal year of 2022, we introduced the AOZ71026QI, a 2 rail, 6 phase controller for notebook Vcore power delivery. This new device features the world’s lowest quiescent power for a multiphase controller designed to meet Intel IMVP 8, 9, 9.1, and 9.2 specifications. We released the 600V 110mOhm and 140mOhm αMOS5™ Super Junction MOSFETs in DFN8x8 Package. αMOS5 is AOS’s latest generation of high voltage MOSFET, designed to meet the high efficiency and high-density needs for Quick Charger, Adapter, PC Power, Server, Industrial Power, Telecom, and Hyperscale Datacenter applications. We also released AOZ32034AQV, a new product in the family of coil drivers for wireless charging transmitter circuits of up to 50W. Packaged in a thermally enhanced QFN 4 x 4 package, the device is designed for wireless charging applications in charging stations, cordless power tools, vacuum cleaners, drones, and other consumer electronic equipment. In addition, we released our initial eFuse product for sub-power rails in server applications. The new devices offer low RDS(ON) (20mohm) back-to-back MOSFETs to isolate the load from the input bus when the eFuse is off.

During the second quarter of fiscal year of 2022, we released 600V Low Ohmic and Fast Body Diode αMOS5™ Super Junction MOSFETs Family. αMOS5 is our latest generation of high voltage MOSFET, designed to meet the high efficiency and high-density needs for Quick Charger, Adapter, PC Power, Server, Industrial Power, Telecom, and Hyperscale Datacenter applications. We also released our latest 80V Power MOSFET using patented Shield Gate Technology which is optimized for higher switching frequencies used in telecom and server power supply to achieve higher efficiency. The 80V MOSFET family of devices offers the highest levels of power density and energy efficiency, which are essential in solar, power supplies, and battery power applications such as in eScooters.

During the first quarter of fiscal year of 2022, we announced a new family of Coil Drivers. The device is ideally suited to the design of Wireless Charging TX circuits used in cordless power tools, vacuum cleaners, drones, and other consumers’ electronic equipment composed of full-bridge topology with a resonant tank circuit to get the best power conversion efficiency. We also announced a new Type-C Power Delivery high voltage sink protection switch using ideal diode methodology for reverse current protection. The new devices offer low RDS(ON) (20mohm) back-to-back MOSFETs to block any reverse current under fault conditions and are capable of up to 28V absolute maximum voltage. In addition, we introduced the first product of the AOS Digital Controller product portfolio. The AOZ97774QE is offered in a QFN 5mm x 5mm package and provides the industry’s most flexible DC/DC controller supporting 5G Wireless, Networking, Optical Communication, and General-Purpose DC/DC applications.

Distributors and customers

We have established direct relationships with key OEMs, including Dell Inc., Hewlett-Packard Company, LG Electronics, Inc. and Samsung Group, most of whom we serve through our distributors and ODMs. In addition, based on our historical design win activities, our power semiconductors are also incorporated into products sold to many other leading OEMs.

Through our distributors, we provide products to ODMs who traditionally are contract manufacturers for OEMs. As the industry has evolved, ODMs are increasingly responsible for designing portions, or entire systems, of the products they manufacture for the OEMs. In addition, several ODMs are beginning to design, manufacture and brand their own proprietary products, which they sell directly to consumers. Our ODM customers include Compal Electronics, Inc., Foxconn, Quanta Computer Incorporated, Pegatron, Wistron Corporation and AOC International.

In order to take advantage of the expertise of end-customer fulfillment logistics and shorter payment cycles, we sell most of our products through distributors. In general, under our agreements with distributors, they have limited rights to return unsold merchandise, subject to time and volume limitations. As of June 30, 2022, 2021 and 2020, our two largest distributors were WPG Holdings Limited, or WPG, and Promate Electronic Co. Ltd., or Promate. Sales to WPG and Promate accounted for 39.7% and 24.6% of our revenue, respectively, for the fiscal year ended June 30, 2022, 35.4% and 28.7% of our revenue, respectively, for the fiscal year ended June 30, 2021, and 35.5% and 29.3% of our revenue, respectively, for fiscal year ended June 30, 2020, respectively.

Sales and marketing

Our marketing division is responsible for identifying high growth markets and applications where we believe our technology can be effectively deployed. We believe that the technical background of our marketing team, including application engineers, helps us better define new products and identify potential end customers and geographic and product market opportunities. For example, as part of our market diversification strategy, we have deployed and plan to recruit more, field application engineers, or FAEs, for our new product offerings, who provide real-time and local response to our end customers' needs. FAEs work with our end customers to understand their requirements and resolve technical problems. FAEs also strive to anticipate future customer needs and facilitate the design-in of our products into the end products of our customers. We believe this strategy increases our share of revenue opportunities within the applications we currently serve, as well as in new end-market applications.

Our sales team consists of sales personnel, field application engineers, customer service representatives and customer quality engineers who are responsible for key accounts. We strategically position our team near our end customers through our offices in Taipei, Hong Kong, Shenzhen, Shanghai, Qingdao, Tokyo, Seoul, Heilbronn, and Sunnyvale, California, complemented by our applications centers in Sunnyvale and Shanghai. In addition, our distributors and sales representatives assist us in our sales and marketing efforts by identifying potential customers, creating additional demand and promoting our products, in which case we may pay a sales commission.

Our sales cycle varies depending on the types of products and can range from six to eighteen months. In general, our traditional power discrete products in PC and TV applications progress more rapidly through the customer's design and marketing processes, and therefore they generally have a shorter sales cycle. In contrast, our newer Power IC and IGBT products, used mostly in the power supply, home appliance and industrial applications, require a more extended design and marketing timeline and thus have a longer sales cycle. Typically, our sales cycle for all products comprises of the following steps:

- identification of a customer design opportunity;
- qualification of the design opportunity by our FAEs through comparison of the power requirements against our product portfolio;
- provision of a product sample to the end customer to be included in the customer's pre-production model with the goal of being included in the final bill of materials; and
- placement by the customer, or through its distributor, of a full production order as the end customer increases to full volume production.

Competition

The power semiconductor industry is characterized by fragmentation with many competitors. We compete with different power semiconductor suppliers, depending on the type of product lines and geographical area. Our key competitors in power discretes and power ICs are primarily headquartered in the United States, Japan, Europe, China and Taiwan. Our major competitors in power discretes include Infineon Technologies AG, MagnaChip Semiconductor Corporation, ON Semiconductor Corp., STMicroelectronics N.V., Toshiba Corporation, Diodes Incorporated and Vishay Intertechnology, Inc. Our major competitors for our power ICs include Global Mixed-mode Technology Inc., Monolithic Power Systems, Inc., ON Semiconductor Corp., Richtek Technology Corp., Semtech Corporation, Texas Instruments Inc. and Vishay Intertechnology, Inc.

Our ability to compete depends on a number of factors, including:

- our success in expanding and diversifying our serviceable markets, and our ability to develop technologies and product solutions for these markets;
- our capability to quickly develop and introduce proprietary technology and best-in-class products;
- the performance and cost-effectiveness of our products relative to that of our competitors;
- our ability and capacity to manufacture, package and deliver products in large volume on a timely basis at a competitive price;
- our success in utilizing new and proprietary technologies to offer products and features previously not available in the marketplace;
- our ability to recruit and retain analog semiconductor designers and application engineers; and
- our ability to protect our intellectual property.

Some of our competitors have longer operating histories, more brand recognition, and significantly greater financial, technical, research and development, sales and marketing, manufacturing and other resources. However, we believe that we can compete effectively through our integrated and innovative technology platform and design capabilities, including our strong and extensive patent portfolio, strategic global business model, expanding suites of new products, diversified and broad customer base, and excellent on-the-ground support and quick time to market for our products.

Seasonality

As we provide power semiconductors used in consumer electronic products, our business is subject to seasonality. Our sales seasonality is affected by a number of factors, including global and regional economic conditions as well as the PC market conditions, revenue generated from new products, changes in distributor ordering patterns in response to channel inventory adjustments and end customer demand for our products and fluctuations in consumer purchase patterns prior to major holiday seasons. Our normal seasonality has been affected significantly by the COVID-19 pandemic, which has resulted in changes in consumer behavior and industry trends. Given the uncertainty of the global economic conditions resulting from the pandemic, it is difficult for us to predict to what extent our sales seasonality may change in the future.

Backlog

Our sales are made primarily pursuant to standard purchase orders from distributors and direct customers. The amount of backlog to be shipped during any period depends on various factors, and all orders are subject to cancellation or modification, usually with no penalty to customers. The quantities actually purchased by customers, as well as shipment schedules, are frequently revised to reflect changes in both the customers' requirements and in manufacturing availability. Therefore, our backlog at any point in time is not a reliable indicator of our future revenue.

Research and development

Because we view technology as a competitive advantage, we invest significant time and capital in research and development to address the technology intensive needs of our end customers. Our research and development expenditures for the fiscal years of 2022, 2021 and 2020 were $71.3 million, $63.0 million and $51.3 million, respectively. Our research and development expenditures primarily consist of salaries, bonuses, benefits, share-based compensation expense, expenses associated with new product prototypes, travel expenses, fees for engineering services provided by outside contractors and consultants, amortization of software and design tools, depreciation of equipment and overhead costs. We continue to invest in developing new technologies and products utilizing our own fabrication and packaging facilities as it is critical to our long-term success. We also evaluate appropriate investment levels and stay focused on new product introductions to improve our competitiveness. We have research and development teams in Silicon Valley (Sunnyvale, California), Oregon, Taiwan, and China. We believe that these diverse research and development teams enable us to develop leading edge technology platforms and new products. Our areas of research and development focus include:

Packaging technologies: Consumer demand for smaller and more compact electronic devices with higher power density is driving the need for advanced packaging technology. Our group of dedicated packaging engineers focuses on smaller form factors, and higher power output with efficient heat dissipation and cost-effectiveness. We have invested resources to develop and enhance our proprietary packaging technologies, including the establishment of our in-house packaging and testing facilities. We believe that our efforts to develop innovative packaging technologies will continue to provide new and cost-effective solutions with higher power density to our customers. During the fiscal year ended June 30, 2022, we continued our diversification strategies by developing new silicon and packaging platforms to expand our SAM and offer higher performance products.

Process technology and device physics: We focus on specialized process technology in the manufacturing of our products, including vertical DMOS, Shielded Gate Trench, Trench field stop IGBTs, charge-balance high voltage MOSFETs, Schottky Diode and BCDMOS processes. Our process engineers work closely with our design team to deploy and implement our proprietary manufacturing processes at our Oregon Fab, and more recently, at the Chongqing Fab as well as the third-party foundries that fabricate our wafers. To improve our process technology, we continue to develop and enhance our expertise in device physics in order to better understand the physical characteristics of materials and the interactions among these materials during the manufacturing process.

New products and new technology platforms: We also invest significantly in the development of new technology platforms and introduction of new products. Because power management affects all electronic systems, we believe that developing a wide portfolio of products enables us to target new applications in addition to expanding our share of power management needs served within existing applications.

As a technology company, we will continue our significant investment in research and development in our low voltage, medium voltage, and high voltage power discretes, IGBT and power modules and power ICs by developing new technology platforms and new products that allow for better product performance, more efficient packages and higher levels of integration.

Operations

The manufacture of our products is divided into two major steps: wafer fabrication and packaging and testing.

Wafer fabrication

Our Oregon Fab allows us to accelerate the development of our technology and products, as well as to provide better service to our customers. We allocate our wafer production between our in-house facility and third-party foundries. During the past three years, we have gradually reduced our reliance on third-party foundries and increased allocation of capacity to our Oregon Fab and Chongqing Fab. We recently entered into a new agreement with the JV Company pursuant to which the JV Company agrees to provide us with a guaranteed supply of a fixed number of wafers until December 2023. Currently our main third-party foundry is Shanghai Hua Hong Grace Electronic Company Limited, ("HHGrace"), or formerly HHNEC, located in Shanghai. HHGrace has been manufacturing wafers for us since 2002. HHGrace manufactured 10.3%, 11.5% and 12.7% of the wafers used in our products for the fiscal years ended June 30, 2022, 2021 and 2020, respectively.

Packaging and testing

Completed wafers from the foundries are sent to our in-house packaging and testing facilities or to our subcontractors, where the wafers are cut into individual die, soldered to lead frames, wired to terminals and then encapsulated in protective packaging. After packaging, all devices are tested in accordance with our specifications and substandard or defective devices are rejected. We have established quality assurance procedures that are intended to control quality throughout the manufacturing process, including qualifying new parts for production at each packaging facility, conducting root cause analysis, testing for lots with process defects and implementing containment and preventive actions. The final tested products are then shipped to our distributors or customers.

Our in-house and wholly-owned packaging and testing facilities are located in Shanghai, China which handle most of our packaging and testing requirements for our products. In addition, the JV Company handles a portion of our packaging and testing requirement. We continuously increase the outsourcing portion of our packaging and testing requirements to other contract manufacturers to improve our ability to respond to changes in market demand. Our facilities have the combined capacity to package and test over 600 million parts per month and have available floor space for new package introductions. We believe our ability to package and test our products internally represents a strategic advantage as it protects our proprietary packaging technology, increases the rate of new package introductions, reduces operating expenses and ultimately improves our profit margins.

Quality assurance

Our quality assurance practices aim to consistently provide our end customers with products that are reliable, durable and free of defects. We strive to do so through design for manufacturing, and continuous improvement in our product design and manufacturing and close collaboration with our manufacturing partners. Our manufacturing operations in China and our manufacturing facility in Oregon are certified to the ISO9001 and IATF16949:2016. These Quality Management System certifications are in recognition of our quality assurance standards. Both ISO9001 and IATF16949:2016 are sets of criteria and procedures established by International Organization of Standardization for developing a fundamental quality management system and focusing on continuous improvement, defect prevention and the reduction of variation and waste. Our products are also in compliance with Restrictions on the use of Hazardous Substances, or RoHS 3.0.

We maintain a supplier management and process engineering team in Shanghai that works with our third-party foundries and packaging and testing subcontractors to monitor the quality of our products, which is designed to ensure that manufacturing of our products is in strict compliance with our process controls, monitoring procedures and product requirements. We also conduct periodic reviews and annual audits to ensure supplier performance. For example, we examine the results of statistical process control systems, implement preventive maintenance, verify the status of quality improvement projects and review delivery time metrics. In addition, we rate and rank each of our suppliers every quarter based on factors such as their quality and performance. Our facility in Oregon integrates manufacturing process controls through our manufacturing execution system, coupled with wafer process controls that include monitoring procedures, preventative maintenance, statistical process control, and testing to ensure that finished wafers delivered will meet and exceed quality and reliability requirements. All materials used to manufacture wafers are controlled through a strict qualification process.

Our manufacturing processes use many raw materials, including silicon wafers, gold, copper, molding compound, petroleum and plastic materials and various chemicals and gases. We obtain our raw materials and supplies from a large number of sources. Although supplies for raw materials used by us are currently adequate, shortages could occur in various essential materials due to interruption of supply or increased demand in the industry.

Intellectual property rights

Intellectual property is a critical component of our business strategy, and we intend to continue to invest in the growth, maintenance and protection of our intellectual property portfolio. We own significant intellectual property in many aspects of power semiconductor technology, including device physics and structure, wafer processes, circuit designs, packaging, modules and subassemblies. We have also entered into intellectual property licensing agreements with other companies, including On Semiconductor Corp. and Giant Semiconductor Corporation, to use selected third-party technology for the development of our products, although we do not believe our business is dependent to any significant degree on any individual third-party license agreement. We have a license agreement with STMicroelectronics International N.V. ("STMicro"), pursuant to which STMicro granted us a world-wide, royalty-free and fully-paid license to use its technologies to develop, market and distribute certain digital multi-phase controller products, which have been offered previously by STMicro. This license agreement allows us to develop a new digital power business that will design and offer a full suite of advance digital power controller products.

While we focus our patent efforts in the United States, we file corresponding foreign patent applications in other jurisdictions, such as China and Taiwan, when filing is justified by cost and strategic importance. The patents are increasingly important to remain competitive in our industry, and a strong patent portfolio will facilitate the entry of our products into new markets. As of June 30, 2022, we had 888 patents issued in the United States, of which 881 were based on our research and development efforts and 7 were acquired, and these patents are set to expire between 2022 and 2041. We also had a total of 936 foreign patents, including 433 Chinese patents, 460 Taiwanese patents, 24 Korean patents, 4 Hong Kong patents, 5 Philippine patents, 8 Japanese patents, 1 Europe patent and 1 India patent as of June 30, 2022. Substantially all of our foreign patents were based on our research and development efforts. These foreign patents will expire in the years between 2023 and 2041. In addition, as of June 30, 2022, we had a total of 185 patent applications, of which 62 patents were pending in the United States, 76 patents were pending in China, 36 patents were pending in Taiwan and 11 patents were pending in other countries.

As our technologies are deployed in new applications and as we diversify our product portfolio based on new technology platforms, we may be subject to new potential infringement claims. Patent litigation, if and when instituted against us, could result in substantial costs and a diversion of our management's attention and resources. However, we are committed to vigorously defending and protecting our investment in our intellectual property. Therefore, the strength of our intellectual property program, including the breadth and depth of our portfolio, will be critical to our success in the new markets we intend to pursue.

In addition to patent protection, we also rely on a combination of trademark, copyright (including mask work protection), trade secret laws, contractual provisions and similar laws in other jurisdictions. We also enter into confidentiality and invention assignment agreements with our employees, consultants, suppliers, distributors and customers and seek to control access to, and distribution of, our proprietary information.

Human Capital Resources

As of June 30, 2022, we had 2,451 employees, of whom 753 were located in the United States, 1,527 were located in China, and 171 were located in other parts of the world. None of our employees is represented by a collective bargaining agreement. Notwithstanding our global footprint and various geographical locations, we have created an integrated workforce where employees worldwide work and collaborate as a team to advance our common business objectives, while retaining local and regional practices and cultures.

We are committed to providing a work environment in which our employees can realize fully their talents and develop successful careers. As our strength is in our people, we invest significantly in our employees by providing a wide range of training and development opportunities, including mentoring, coaching, attendance at external seminars and professional conferences, and regular in-house training sessions on specific topics. We train our managers to become good stewards for our employees, balancing the need of quality of life and performance results. We believe that these efforts contribute to the growth of our employees, as more than 50% of our managerial positions are filled through promotions of existing employees.

We also keep our employees engaged and informed by providing periodic all-staff communications, and semi-annual performance reviews to ensure that efforts and results are aligned with our business and strategic corporate objectives. We value feedback from our employees and have an open-door policy in our engagement with employees, and we encourage employees to have regular conversations with their managers to share feedback and express concerns. We also solicit employee feedback informally through regular employee interactions. In addition, we conduct employee satisfaction surveys at certain locations to help management identify areas that may require improvement. As part of the AOS tradition, we also organize social events, including annual appreciation picnics (when possible given COVID-19 conditions), and holiday parties, inviting both employees and their families to join. We believe these efforts enable us to build a strong and solid group of loyal employees who form the core of our human capital resource.

We are committed to providing an environment where employees from all walks of life are treated with respect, care and dignity. To recruit new talent, we reach out to a broad range of sources, including employee referrals, on-line advertising, recruitment agencies, and other social media platforms to seek out the best qualified candidates regardless of their backgrounds. We are also focused on ensuring a diverse workforce, including our management team. Our Nominating and Corporate Governance Committee leads the effort in recruiting qualified directors to serve on our Board, and we are in compliance with applicable diversity laws. Our employees appreciate and value the strength of our people-oriented culture and the benefits the workplace diversity brings.

We commit to a fair and living wage for all employees. We offer competitive compensation and benefits packages for our employees that include a combination of base salary, annual bonus, discretionary bonus for outstanding achievements, an employee share purchase plan, time-based and performance-based long-term equity compensation. Our equity related compensation programs are designed to motivate and incentivize our employees and align their rewards to financial and other business performance goals, while increasing our shareholder value. We adhere strictly to the Company's Code of Business Conduct and Ethics and other policies, and ensure that our employment practices respect human rights and comply with national, state and local regulatory requirements at all locations where we conduct business. In addition, we have engaged nationally-recognized outside compensation consulting firms to independently evaluate the appropriateness and effectiveness of compensation for our executives and other officers and to provide benchmarks for executive compensation as compared to peer companies.

The health and safety of our employees are paramount to our company. At each of our major locations, we have formed site safety committees that conduct regular meetings to assess and improve effectiveness of our safety policies and guidelines, to monitor safety incidents and to oversee the implementation of corrective actions. At our U.S. facilities, the COVID-19 prevention committees met regularly to update and enhance prevention measures in accordance to federal, state and county health orders, which allowed us to continue our operations without significant disruptions. In addition, to support remote-working arrangements, we provided office workers with technology resources and in some cases a monthly stipend to set up home offices. To protect our employees and their families against the COVID-19 virus, we also implemented and sponsored bi-weekly on-site COVID-19 testing beginning in January 2021 for essential employees who were authorized to work in our Sunnyvale lab facilities. Our COVID-19 prevention committees at factory sites in China took swift and decisive actions to prevent work-place contagion and to ensure the health and safety of our employees. These actions included providing employees with Personal Protective Equipments, strict visitor controls, frequent sanitization of shuttle buses, temperature checking prior to boarding the shuttles and at the factory entrances, and regular self-audits. As a result of these actions, we had zero COVID-19 cases at our facilities in China. From March 28, 2022 to June 1, 2022, our Songjiang factory was locked down in compliance with the local government's COVID-19 prevention order. The site was locked down with 885 employees who were not allowed to leave the factory. No one from outside of the factory was permitted to enter, including cleaning crews. A steering committee chaired by the General Manager of the factory and with certain management members from production, facilities and administration was formed on-site immediately to direct the logistics and measures necessary to ensure the safety and wellbeing of our employees onsite, and to provide adequate electricity, water supplies, food, bedding and sanitary supplies. In addition, the committee also ensured that needs were met regarding government contacts, COVID-19 testing, isolation and transfer of sick employees, cleaning and disinfection of public places and restrooms, and trash disposal. All of these requirements were facilitated internally by volunteers within the facilities due to the lock-down. Many of our employees devoted themselves to meet these challenges. The quick actions of the steering committee and our dedicated volunteers with their selfless and heroic acts were indispensable for our on-site employees' survival during the lock-down. The Company endeavored to provide all support necessary, ranging from material, monetary to psychological assistance. All personnel on-site received special allowances in addition to their regular compensation to compensate for their hardship. Employees who volunteered also received special appreciation bonuses to recognize their self-less and critical contributions. Thanks to our on-site employees and the Company's combined efforts, when our Songjiang factory received a green light to resume production, despite the on-going city-wide lock-down in Shanghai where most citizens were still restricted in their residences, we were able to resume partial production to deliver products critical to our customers.

Environmental matters

The semiconductor production process, including the semiconductor wafer manufacturing and packaging process, generates air emissions, liquid wastes, waste water and other industrial wastes. We have installed various types of pollution control equipment for the treatment of air emissions and liquid waste and equipment for recycling and treatment of water in our packaging and testing facilities in China and wafer manufacturing facility in Oregon, USA. Waste generated at our manufacturing facilities, including but not limited to acid waste, alkaline waste, flammable waste, toxic waste, oxide waste and self-igniting waste, is collected and sorted for proper disposal. Our operations in China are subject to regulation and periodic monitoring by China's State Environmental Protection Bureau, as well as local environmental protection authorities, including those under the Shanghai Municipal Government, which may in some cases establish stricter standards than those imposed by the State Environmental Protection Bureau. Our operation in Oregon is subject to Oregon Department of Environmental Regulations, Federal Environmental Protection Agency laws and regulations, and local jurisdictional regulations. We believe that we have been in material compliance with applicable environmental regulations and standards and have not had a material or adverse effect on our results of operations from complying with these regulations.

We have implemented an ISO 14001 environmental management system in our manufacturing facilities in China and Oregon. We also require our subcontractors, including foundries and assembly houses, to meet ISO 14001 standards. We believe that we have adopted pollution control measures for the effective maintenance of environmental protection standards consistent with the requirements applicable to the semiconductor industry in China and the U.S.

Our products sold in worldwide are subject to RoHS in Electrical and Electronic Equipment, which requires that the products do not contain more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl and polybrominated diphenyl ether flame retardants. Our manufacturing facilities in China also obtained QC080000 certification, which is an IECQ Certificate of Conformity Hazardous Substance Process Management for European Directive 2002/95/EC requirements and a Certificate of Green Partner for Sony Green Partner Program. We avoid using these restricted materials to the extent possible when we design our products.

We are also subject to SEC rules that require diligence, disclosure and reporting on whether certain minerals and metals, known as conflict minerals, used in our products originate from the Democratic Republic of Congo and adjoining countries. As of June 30, 2022, 2021 and 2020, we were in compliance with the related conflict minerals rule.

Export Control

We are subject to export and import control laws, trade regulations and other trade requirements that limit which products we sell and where and to whom we sell our products. Because we are committed to complying with all applicable export control laws, regulations, and requirements, we have reviewed and revised our processes and procedures to ensure that our shipments to our customers remain compliant with applicable export laws. As part of the enhanced process, we have also conducted extensive risk assessment on export control compliance and implemented training programs for our employees.

Executive Officers

The following table lists the names, ages and positions of our executive officers as of August 15, 2022. There are no family relationships between any executive officer, except that Mr. Stephen C. Chang is a son of Dr. Mike F. Chang.

Name	Age	Position
Mike F. Chang, Ph.D.	77	Chairman of the Board and Chief Executive Officer
Stephen C. Chang	45	President
Yifan Liang	58	Chief Financial Officer and Corporate Secretary
Wenjun Li, Ph.D.	53	Chief Operating Officer
Bing Xue, Ph.D.	58	Executive Vice President of Worldwide Sales and Business Development

Mike F. Chang, Ph.D., is the founder of our company and has served as our Chairman of the Board and Chief Executive Officer since the incorporation of our company. Dr. Chang has extensive experience in both technology development and business operations in the power semiconductor industry. Prior to establishing our company, Dr. Chang served as the Executive Vice President at Siliconix Incorporated, a subsidiary of Vishay Intertechnology Inc., a global manufacturer and supplier of discrete and other power semiconductors, or Siliconix, from 1998 to 2000. Dr. Chang also held various management positions at Siliconix from 1987 to 1998. Earlier in his career, Dr. Chang focused on product research and development in various management positions at General Electric Company from 1974 to 1987. Dr. Chang received his B.S. in electrical engineering from National Cheng Kung University, Taiwan, and M.S. and Ph.D. in electrical engineering from the University of Missouri.

Stephen C. Chang has been serving as our President since January 2021. Prior to that, Mr. Chang served in various management positions including Executive Vice President of Product Line Management, Senior VP of Marketing, VP of the MOSFET Product Line, and Senior Director of Product Marketing. Mr. Chang has over 20 years of industry experience and leads our Product Line Marketing with various managerial responsibilities, including new product development, product lifecycle management, business development, and business strategy. Mr. Chang received his B.A. in Electrical Engineering from University of California, Berkeley and M.B.A. from Santa Clara University.

Yifan Liang has been serving as our Chief Financial Officer since August 2014 and Corporate Secretary since November 2013. Mr. Liang served as our Interim Chief Financial Officer from November 2013 to August 2014, our Chief Accounting Officer since October 2006, and our Assistant Corporate Secretary from November 2009 to November 2013. Mr. Liang joined our company in August 2004 as our Corporate Controller. Prior to joining us, Mr. Liang held various positions at

PricewaterhouseCoopers LLP, or PwC, from 1995 to 2004, including Audit Manager in PwC's San Jose office. Mr. Liang received his B.S. in management information system from the People's University of China and M.A. in finance and accounting from the University of Alabama.

Wenjun. Li, Ph.D., has been serving as our Chief Operating Officer since August 2021. Prior to that, Dr. Li served in various management positions in our Company since 2012, including Executive Vice President of World-Wide Manufacturing, Senior Vice President of World-Wide Manufacturing, Vice President of Front-End Operation, the director of Process Integration and Senior Manager of Process Integration. Dr. Li holds a B.S. in Chemistry and a M.S. in Chemical Engineering from Taiyuan University of Technology, and a Ph.D. in Microelectronics & Solid-State Electronics from the Research Institute of Micro-Nanometer Technology at Shanghai Jiao Tong University.

Bing Xue, Ph.D., has been serving as our Executive Vice President of Worldwide Sales and Business Development since January 2021. Prior to that, Dr. Xue held various managerial positions in our company since 2003, including Senior Vice President of Global Sales, Vice President of Global Sales, Vice President of Worldwide Manufacturing, and General Manager of China Operation. Prior to joining us, Dr. Xue served as the Director of Engineering in Dowslake Microsystem from 2001 to 2003. Dr. Xue received his B.S. in Physics from Xiamen University, and Ph.D. in Physical Chemistry from University of Pennsylvania.

Available Information

Our filing documents and information with the Securities and Exchange Commission (the "SEC") are available free of charge electronically through our Internet website, *www.aosmd.com.* as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, the SEC maintains a website (www.sec.gov) that contains reports, proxy statements, and other information that we file electronically.

Item 1A. Risk Factors

Our operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock. Any of the following risks and uncertainties may be exacerbated by the impacts of the COVID-19 pandemic and related events.

Risk Factor Summary

- Risks Related to Our Business
- Our business operations and financial performance may be adversely affected by the COVID-19 pandemic and related events.
- The decline of personal computing ("PC") markets may have a material adverse effect on our results of operations.
- Our strategy of diversification into different market segments may not succeed according to our expectations.
- Our operating results may fluctuate from period to period due to many factors, which may make it difficult to predict our future performance.
- Geopolitical and economic conflicts between United States and China may adversely affect our business.
- Our revenue may fluctuate significantly from period to period due to ordering patterns from our distributors and seasonality.
- We may not be able to introduce or develop new and enhanced products that meet or are compatible with our customer's product requirements in a timely manner.
- We may not win sufficient designs, or our design wins may not generate sufficient revenue for us to maintain or expand our business.
- Our success depends upon the ability of our OEM end customers to successfully sell products incorporating our products.
- The operation of our Oregon Fab subjects us to additional risks and the need for additional capital expenditures which may negatively impact our results of operations.
- We may not be able to successfully develop our digital power business.
- Defects and poor performance in our products could result in loss of customers, decreased revenue, unexpected expenses and loss of market share.
- If we do not forecast demand for our products accurately, we may experience product shortages, delays in product shipment, excess product inventory, or difficulties in planning expenses, which will adversely affect our business and financial condition.
- We face intense competition and may not be able to compete effectively which could reduce our revenue and market share.
- Our reliance on third-party semiconductor foundries to manufacture our products subjects us to risks.
- Our operation of two wholly-owned packaging and testing facilities are subject to risks that could adversely affect our business and financial results.
- Our reliance on distributors to sell a substantial portion of our products subjects us to a number of risks.
- We have made and may continue to make strategic acquisitions of other companies, assets or businesses and these acquisitions introduce significant risks and uncertainties.
- If we are unable to obtain raw materials in a timely manner or if the price of raw materials increases significantly, production time and product costs could increase, which may adversely affect our business.
- We may not be able to accurately estimate provisions at fiscal period end for price adjustment and stock rotation rights under our agreements with distributors, and our failure to do so may impact our operating results.

- We depend on the continuing services of our senior management team and other key personnel, and if we lose a member of our senior management or are unable to successfully retain, recruit and train key personnel, our ability to develop and market our products could be harmed.
- Failure to protect our patents and our other proprietary information could harm our business and competitive position.
- Intellectual property disputes could result in lengthy and costly arbitration, litigation or licensing expenses or prevent us from selling our products.
- The DOJ government investigation and evolving export control regulations may adversely affect our financial performance and business operations.
- We may be adversely affected by any disruption in our information technology systems.
- Global or regional economic, political and social conditions could adversely affect our business and operating results.
- Our business operations could be significantly harmed by natural disasters or global epidemics.
- Our insurance may not cover all losses, including losses resulting from business disruption or product liability claims.
- Our international operations subject our company to risks not faced by companies without international operations.
- If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud.
- We are subject to the risk of increased income taxes and changes in existing tax rules.
- Our debt agreements include financial covenants that may limit our ability to pursue business and financial opportunities and subject us to risk of default.
- The imposition of U.S. corporate income tax on our Bermuda parent and non-U.S. subsidiaries could adversely affect our results of operations.
- We may be classified as a passive foreign investment company ("PFIC"), which could result in adverse U.S. federal income tax consequences for U.S. holders.
- The average selling prices of products in our markets have historically decreased rapidly and will likely do so in the future, which could harm our revenue and gross margins.
- We may be adversely affected by the cyclicality of the semiconductor industry.

Risks Related to Doing Business in China

- China's economic, political and social conditions, as well as government policies, could affect our business and growth.
- Changes in China's laws, legal protections or government policies on foreign investment in China may harm our business.
- The continuing potential for new or additional tariffs on imported goods from China could adversely affect our business operations.
- Substantial uncertainties exist with respect to the interpretation and implementation of PRC Foreign Investment Law and how it may impact us.
- Limitations on our ability to transfer funds to our China subsidiaries could adversely affect our ability to expand our operations, make investments that could benefit our businesses and otherwise fund and conduct our business.
- China's currency exchange control and government restrictions on investment repatriation may impact our ability to transfer funds outside of China.
- The M&A Rules and certain other PRC regulations establish complex procedures for some acquisitions of Chinese companies by foreign investors, which could make it more difficult for us to pursue growth through acquisitions in China.
- Our results of operations may be negatively impacted by fluctuations in foreign currency exchange rates between U.S. dollar and Chinese Yuan, or RMB.
- PRC labor laws may adversely affect our results of operations.
- Relations between Taiwan and China could negatively affect our business, financial condition and operating results and, therefore, the market value of our common shares.
- Risks Related to Our Corporate Structure and Our Common Shares.

- Our share price may be volatile and you may be unable to sell your shares at or above the purchase price, if at all.
- If securities or industry analysts do not publish research or reports about our business, or if they adversely change their recommendations regarding our common shares or if our operating results do not meet their expectations, the trading price of our common shares could decline.
- Anti-takeover provisions in our bye-laws could make an acquisition of us more difficult and may prevent attempts by our shareholders to replace or remove our current management.
- We are a Bermuda company and the rights of shareholders under Bermuda law may be different from U.S. laws.

Risks Related to Our Business

Our business operations and financial performance may be adversely affected by the COVID-19 pandemic and related events.

Our business operations have been impacted by the global COVID-19 pandemic and the resulting economic downturn. Numerous governmental jurisdictions, including the States of California, Oregon and Texas in the U.S. and countries throughout the Asia Pacific region have imposed various restrictions on commercial activities, resulting in business closures, work stoppages, labor shortage, disruptions to ports, vaccine mandates and other shipping infrastructure, border closures, thereby negatively impacting our customers, suppliers, distributors, employees, offices, and the entire semiconductor ecosystem.

As a result of the COVID-19 pandemic and changing consumer behaviors due to various government restrictions and the growing trend to provide remote-working options by employers, we have experienced shifting market trends, including an increasing demand in markets for notebooks, PCs, gaming devices and other products. While we have benefited from the increasing demand for PC related products, there is no guarantee that this trend will continue, and such increasing demand may discontinue or decline if government authorities relax or terminate COVID-19 related restrictions and consumer behaviors change in response to the reopening of certain economic activities.

Since the start of the second quarter of calendar year 2021, there have been increasing availability and administration of vaccines against COVID-19, as well as an easing of restrictions on social, business, travel, and government activities and functions, and a gradual resumption of economic activities and consumer spending in our industries. However, infection rates continued to fluctuate in various regions and new strains of the virus remain a risk, including a surge of COVID-19 cases and hospitalization due to the spread of Omicron variants in late 2021 and early 2022. During the first half of calendar year of 2022, COVID-19 cases and hospitalization rate continued to decline and governments in various jurisdictions, including the U.S. and Europe, have lifted various restrictions and limitations on economic activities. At the same time, however, new variants of COVID-19, including the BA.5 variant, continued to emerge and contributed to recent rise of infection rates in various jurisdictions in which we operate, including China and U.S. Furthermore, we may be subject to the ongoing global impacts resulting from the pandemic, including disruption of the product supply chains, shortages of semiconductor components and raw materials, and delays in shipments, product development, and product launches and rising inflation rates, any of which may adversely affect our operations. In addition, actions by United States federal, state and local governments, as well as by foreign governments, to address the COVID-19 pandemic, including travel bans, stay-at-home orders and school, business and entertainment venue closures, also had a significant adverse effect on the markets in which we conduct our businesses. COVID-19 poses the risk that our workforce, suppliers, and other partners may be prevented from conducting normal business activities for an extended period of time, including due to shutdowns or stay-at-home orders that may be requested or mandated by governmental authorities.

In April 2022, the city of Shanghai, China entered into a strict lockdown due to surging COVID-19 cases and the local government's imposition of the "Zero Covid" policy. Our packaging and assembly facilities in Shanghai were shut down and production was halted since early April. Transportation suspension in and out of Shanghai also interrupted the shipping of raw materials and finished parts to and from our Songjiang factory. We received permission to reopen our facilities partially in early May. We gradually ramped up production at these facilities in May 2022 and returned to normal operation in June 2022. The suspension of our Shanghai facilities, and factors limiting the resumption of production, reduced our ability to complete orders from our customers in a timely manner, which adversely affected our revenue and results of operation for the three months ended June 30, 2022. There is no guarantee that additional restrictions and lockdown will not be reimposed by the government, which is outside of our control, and any extension of the lockdown will continue to have a negative impact on our results of operations and financial conditions.

We also expect to incur additional incremental costs to comply with various public health and safety requirements imposed by the Shanghai government, which may continue for an extended period of time even after city-wide lockdown is lifted. Furthermore, while we intend to secure alternative sources of packaging capacity from third-party providers to mitigate the impact of the shutdown, there is no guarantee that such source will be available or on terms that are reasonable to us. Even if alternative sources are available, it will be difficult to complete the transition to such sources efficiently and timely, and we currently do not expect that we will be able to secure sufficient third-party packaging sources to substitute or replace fully our in-house capacity. The suspension of our Shanghai facilities, and factors limiting the resumption of production reduced our ability to complete orders from our customers in a timely manner or at all, which adversely affected our revenue and results of operation for the fiscal year ended June 30, 2022. We can not guarantee that the Shanghai government will not impose similar restrictions and lockdown in the future, and any such restrictions and lockdown will adversely affect our operations and financial performance.

The full extent of the future impact of the COVID-19 pandemic on our operational and financial performance is uncertain and will depend on many factors beyond our control, including, without limitation, the timing, extent, trajectory and duration of the pandemic; the availability, distribution and effectiveness of vaccines; the spread of new variants of COVID-19; the continued and renewed imposition of protective public safety measures such as lockdowns and quarantines; the continuing global disruption in supply chains in our industries and the impact of the pandemic on the global economy, inflation and demand for consumer products. Even after the pandemic has subsided and economic activities gradually increase, we may continue to experience material and adverse impacts to our business, operating results, and financial condition as a result of the pandemic's lasting global economic impact, including any recession that may occur in the future in our industries, as well as possible continuing inflationary impacts resulting from these factors.

Our operation of two wholly-owned packaging and testing facilities are subject to risks that could adversely affect our business and financial results.

We have two wholly-owned packaging and testing facilities located in Shanghai, China that handle most of our packaging and testing requirements. The operation of high-volume packaging and testing facilities and implementation of our advanced packaging technology are complex and demand a high degree of precision and may require modification to improve yields and product performance. We have committed substantial resources to ensure that our packaging and testing facilities operate efficiently and successfully, including the acquisition of equipment and raw materials, and training and management of a large number of technical personnel and employees. Due to the fixed costs associated with operating our own packaging and testing facilities, if we are unable to utilize our in-house facilities at a desirable level of production, our gross margin and results of operations may be adversely affected. For example, a significant decline in our market share or sales orders may negatively impact our factory utilization and reduce our ability to achieve profitability.

In April 2022, the operations of our packaging and testing facilities in Shanghai, China were suspended due to a strict lockdown of the city imposed by the local government in response to surging COVID cases. The facilities were required to be shut down and production was halted since early April. Transportation suspension in and out of Shanghai also interrupted the shipping of raw materials and finished parts to and from our facilities. We received permission to reopen our facilities partially in early May. We gradually ramped up production at these facilities in May and returned to normal operation in June 2022. The suspension of our Shanghai facilities, and factors limiting the resumption of production, reduced our ability to complete orders from our customers in a timely manner, which adversely affected our revenue and results of operation for the three months ended June 30, 2022. There is no guarantee that additional restrictions and lockdown will not be reimposed by the government, which is outside of our control, and any extension of the lockdown will continue to have a negative impact on our results of operation and financial condition. Furthermore, while we intend to secure alternative sources of packaging capacity from third-party providers, there is no guarantee that such sources are available, and even if available, it will be difficult to complete the transition efficiently and timely, and such alternative source of capacity is not expected to be sufficient to substitute or replace fully our in-house capacity. The suspension of our Shanghai facilities had a negative impact on our production and adversely affected our revenue and results of operation for the fiscal year ended June 30, 2022. We can not guarantee that the Shanghai government will not impose similar restrictions and lockdown in the future, and any such restrictions and lockdown will adversely affect our operations and financial performance.

In addition, the operation of our packaging and testing facilities is subject to a number of risks, including the following:

- unavailability of equipment, whether new or previously owned, at acceptable terms and prices;
- facility equipment failure, power outages or other disruptions;
- shortage of raw materials, including packaging substrates, copper, gold and molding compound;
- failure to maintain quality assurance and remedy defects and impurities;

- changes in the packaging requirements of customers;
- our limited experience in operating a high-volume packaging and testing facility; and
- operation stoppage due to the city-wide COVID-19 lockdown.

Any of the foregoing risks could adversely affect our capacity to package and test our products, which could delay shipment of our products, result in higher expenses, reduce revenue, damage our relationships with customers and otherwise adversely affect our business, results of operations, financial condition and prospects.

Our business operations and financial conditions may be adversely affected by any disruption in our information technology systems, including any cyberattacks and breaches.

Our operations are dependent upon our information technology systems, which encompass all of our major business functions across offices internationally. We rely upon such information technology systems to manage and replenish inventory, complete and track customer orders, coordinate sales activities across all of our products and services, maintain vital data and information, perform financial and accounting tasks and manage and perform various administrative and human resources functions. A substantial disruption in our information technology systems for any extended time period (arising from, for example, system capacity limits from unexpected increases in our volume of business, outages or delays in our service) could result in delays in receiving inventory and supplies or filling customer orders and adversely affect our customer service and relationships. Our systems might be damaged or interrupted by natural or man−made events or by computer viruses, physical or electronic break−ins, cyber-attacks and similar disruptions affecting the global Internet.

In addition, recent widespread ransomware attacks and cybersecurity breaches in the U.S. and elsewhere have affected many companies, including the cybersecurity incident involving SolarWinds Orion in December 2020. In the past, we also experienced ransomware attacks on our information technology system. In April, 2022, we became aware of a cybersecurity incident involving unauthorized access to one of the Company's email account, resulting in unauthorized payments. We recorded a loss of $1.5 million due to the incident for the three months ended March 31, 2022. Immediately following the discovery, we commenced an investigation, contained the incident and implemented additional protective measures and internal control policies and procedures. We also alerted law enforcement authorities and banking institutions in an effort to recover the lost amount. This incident appears to be isolated and its financial impact identified was not material. The Company believes that it has not incurred other damages and losses based on the conclusion of the full investigation. There is no guarantee that we will be able to recover the lost amount.

While these attacks did not have a material adverse effect on our business operation or results of operations, they caused temporary disruptions and interfered with our operations. Any cybersecurity breach and financial loss may also have a negative impact on our internal control over financial reporting. While we have implemented additional measures to enhance our security protocol to protect our system and intend to do so in response to any threats, there is no guarantee that future attacks would be thwarted or prevented. We also expect to incur additional costs and expenses to upgrade our information technology system and establish additional protective measures to prevent future breaches. Furthermore, despite our efforts to investigate, improve and remediate the capability and performance of our information technology system, we may not be able to discover all weaknesses, breaches and vulnerabilities, and failure to do so may expose us to higher risk of data loss and adversely affect our business operations and results of operations.

The decline of personal computing ("PC") markets may have a material adverse effect on our results of operations.

A significant amount of our revenue is derived from sales of products in the PC markets such as notebooks, motherboards and notebook battery packs. Our revenue from the PC markets accounted for approximately 44.5%, 42.5% and 41.1% of our total revenue for the years ended June 30, 2022, 2021 and 2020, respectively. The increasing popularity of smaller, mobile computing devices such as tablets and smart phones with touch interfaces is rapidly changing the PC markets both in the United States and abroad. In the past, we experienced a significant reduction in the demand for our products due to the declining PC markets, which had negatively impacted our revenue, profitability and gross margin. While we recently experienced resurgence of demand in the PC market as a result of the COVID-19 pandemic and related events, there is no assurance that such trend will continue or that the decline of PC market will not occur again, and if it does, we may not be able to implement measures successfully to mitigate or reduce the negative impact on our financial conditions and results of operations.

Our strategy of diversification into different market segments may not succeed according to our expectations and may expose us to new risks and place significant strains on our management, operational, financial and other resources.

As part of the growth strategy to diversify our product portfolio and in response to the decline of the PC markets, we have been developing new technologies and products designed to penetrate into other markets and applications, including merchant power supplies, flat panel TVs, smart phones, tablets, gaming consoles, lighting, datacom, telecommunications, home appliances and industrial motor controls. However, there is no guarantee that these diversification efforts will be successful. As a new entrant to some of these markets, we may face intense competition from existing and more established providers and encounter other unexpected difficulties, any of which may hinder or delay our efforts to achieve success. In addition, our new products may have long design and sales cycles. Therefore, if our diversification efforts fail to keep pace with the declining PC markets, we may not be able to alleviate its negative impact on our results of operations.

Our diversification into different market segments may place a significant strain on our management, operational, financial and other resources. To manage this diversification effectively, we will need to take various actions, including:

- enhancing management information systems, including forecasting procedures;
- further developing our operating, administrative, financial and accounting systems and controls;
- managing our working capital and sources of financing;
- maintaining close coordination among our engineering, accounting, finance, marketing, sales and operations organizations;
- retaining, training and managing our employee base;
- enhancing human resource operations and improving employee hiring and training programs;
- realigning our business structure to more effectively allocate and utilize our internal resources;
- improving and sustaining our supply chain capability; and
- managing both our direct and distribution sales channels in a cost-efficient and competitive manner.

Our failure to execute any of the above actions successfully or timely may have an adverse effect on our business and financial results.

Our operating results may fluctuate from period to period due to many factors, which may make it difficult to predict our future performance.

Our periodic operating results may fluctuate as a result of a number of factors, many of which are beyond our control. These factors include, among others:

- a deterioration in general demand for electronic products, particularly the PC market, as a result of global or regional financial crises and associated macro-economic slowdowns, and/or the cyclicality of the semiconductor industry;
- a deterioration in business conditions at our distributors and /or end customers;
- adverse general economic conditions in the countries where our products are sold or used;
- the emergence and growth of markets for products we are currently developing;
- our ability to successfully develop, introduce and sell new or enhanced products in a timely manner and the rate at which our new products replace declining orders for our older products;
- the anticipation, announcement or introduction of new or enhanced products by us or our competitors;
- changes in the selling prices of our products and in the relative mix in the unit shipments of our products, which have different average selling prices and profit margins;
- the amount and timing of operating costs and capital expenditures, including expenses related to the maintenance and expansion of our business operations and infrastructure;
- the announcement of significant acquisitions, disposition or partnership arrangements;
- the ramp-up progress and operation of the JV Company, and announcement of significant transactions involving the JV Company;
- changes in the utilization of our in-house manufacturing capacity;
- supply and demand dynamics and the resulting price pressure on the products we sell;

- the unpredictable volume and timing of orders, deferrals, cancellations and reductions for our products, which may depend on factors such as our end customers' sales outlook, purchasing patterns and inventory adjustments based on general economic conditions or other factors;
- changes in laws and regulations affecting our business operations;
- changes in costs associated with manufacturing of our products, including pricing of wafer, raw materials and assembly services;
- announcement of significant share repurchase programs;
- our concentration of sales in consumer applications and changes in consumer purchasing patterns and confidence; and
- the adoption of new industry standards or changes in our regulatory environment.

Any one or a combination of the above factors and other risk factors described in this section may cause our operating results to fluctuate from period to period, making it difficult to predict our future performance. Therefore, comparing our operating results on a period-to-period basis may not be meaningful, and you should not rely on our past results as an indication of our future performance.

Geopolitical and economic conflicts between United States and China may adversely affect our business

Geopolitical conflicts and tensions between the United States and China have threatened and destabilized trading relationships and economic activities between the two countries. Because we have significant operations in both countries, such conflicts and tensions may negatively impact our business. At various times during recent years, the United States and China have had disagreements over political and economic issues, including but not limited to, the recent imposition of tariffs by the U.S. on goods imported from China and to the U.S. government's efforts to restrict transfer and sharing of technologies, including semiconductor technologies, between the two countries. In addition, the U.S. government may enact new and more restrictive export control regulations that may reduce our ability to ship and sell products to certain customers in China and Asia and increase our cost to implement additional measures to comply with such new regulations. In addition, disagreements between the United States and China with respect to their political, military or economic policies toward Taiwan may contribute to further controversies. These controversies and trade frictions could have a material adverse effect on our business by, among other things, making it more difficult for us to coordinate our operations between the United States and China causing a reduction in the demand for our products by customers in the United States or China and reducing our profitability due to increasing cost of compliance.

The continuing political and economic conflicts between U.S. and China have resulted in and may continue to cause retaliatory policies from both countries, including a 2020 executive order issued by the then U.S. President eliminating the preferential trade status of Hong Kong in response to China’s action to impose new security measures and regulation on Hong Kong. The order has made it more costly and difficult for U.S. companies to export goods or conduct businesses in Hong Kong. While we historically have not relied on the preferential trade status to operate in Hong Kong, there is no guarantee that additional policies, rules or regulations will not be implemented by either the U.S. or China that will negatively impact our ability to maintain our sales and other functions and operations in Hong Kong. We also cannot predict what new and additional retaliatory policies and regulations may be implemented by the Chinese government in response to U.S. actions, and such policies and regulations may adversely affect our business operations in China and other Asian countries, including our manufacturing and sales and marketing activities.

Our lack of control over the JV Company may adversely affect our operations.

We formed the JV Company in 2016 which consists of a power semiconductor packaging, testing and 12-inch wafer fabrication facility in Chongqing. The JV Company is our subcontractor, and we rely and expect to continue to rely substantially on the JV Company to provide us with foundry capacity to develop and manufacture our products and to enhance our market position in China. Since the formation of the JV Company, we have retained control over the business operation of the JV Company through our majority equity ownership and board representation. In December 2021, we relinquished control over the JV Company through a series of transactions, including the sale of a portion of our equity interests in the JV Company and issuance of additional equity interests by the JV Company to raise capital. As a result of these transactions, we currently own approximately 42.2% of outstanding equity interest in the JV Company and have the right to designate three (3) out of seven (7) directors, instead of four (4) directors prior to such transaction. The reduction of our equity ownership of the JV Company is part of a plan to enable the JV Company to raise capital more easily and to facilitate a future public listing on the Science and Technology Innovation Board, or STAR Market, of the Shanghai Stock Exchange (the "China IPO"). Such reduction also caused the deconsolidation of the JV Company's financial statements from our Consolidated Financial Statements.

Because we no longer have a controlling interest in the JV Company, the JV Company is operating and will continue to operate more independently, and our influence on all aspects of the JV Company's business operations will be diminished. Accordingly, we might not be able to prevent the JV Company from taking actions adverse to our interests. For example, while we remain a major customer of the JV Company, the JV Company may decide to enter into business relationships with other customers and allocate foundry capacities to such customers, which may prevent us from securing a desirable or sufficient level of manufacturing capacity for our products. Even if the JV Company agrees to continue allocating sufficient manufacturing capacity to us, we may not be able to negotiate or obtain favorable pricing or service terms, which may increase our expenses and adversely affect our results of operations.

Our lack of control over the JV Company may also make it more difficult for us to execute our broader business strategies in China, including our R&D, sales and marketing, product innovation efforts and protection of intellectual property rights, because the JV Company may decide not to cooperate with us in these matters. In addition, while we expect to achieve a financial return for our investment in the JV Company as a result of the China IPO, the China IPO process is complex, time-consuming and subject to a number of risks and there is no guarantee that the China IPO will be completed in a timely manner, or at all, and the JV Company's failure to close the China IPO will negatively affect our investment in the JV Company.

In order to fund its capital expenditures and cost of operation, the JV Company has incurred a significant amount of indebtedness from third-party lenders under several loan and lease financing agreements, some of which are secured by substantially all of the assets of the JV Company. If the JV Company is not able to generate sufficient cash flow to make payments under these loans, the JV Company may be in default, which will adversely affect its ability to continue operations and provide foundry services to us. In addition, the JV Company requires additional funding to continue its operations and to refinance its existing indebtedness. There is no guarantee that the JV Company will be able to obtain financing on favorable terms, or at all, and any such failure may negatively impact our ability to access its wafer manufacturing capacity.

Any of the foregoing risks could materially reduce the expected return of our investment in the JV Transaction and adversely affect our business operations, our financial performance and the trading price of our shares.

Our revenue may fluctuate significantly from period to period due to ordering patterns from our distributors and seasonality.

Demand for our products from our end customers fluctuates depending on their sales outlooks and market and economic conditions. Accordingly, our distributors place purchase orders with us based on their forecasts of end customer demand. Because these forecasts may not be accurate, channel inventory held at our distributors may fluctuate significantly due to the difference between the forecasts and actual demand. As a result, distributors adjust their purchase orders placed with us in response to changing channel inventory levels, as well as their assessment of the latest market demand trends. A significant decrease in our distributors' channel inventory in one period may lead to a significant rebuilding of channel inventory in subsequent periods, or vice versa, which may cause our quarterly revenue and operating results to fluctuate significantly.

In addition, because our power semiconductors are used in consumer electronics products, our revenue is subject to seasonality. Our sales seasonality is affected by a number of factors, including global and regional economic conditions as well as the PC market conditions, revenue generated from new products, changes in distributor ordering patterns in response to channel inventory adjustments and end customer demand for our products and fluctuations in consumer purchase patterns prior to major holiday seasons. In recent year, broad fluctuations in the semiconductor markets and the global economic conditions, in particular the decline of the PC market conditions, have had a more significant impact on our results of operations, than seasonality, and have made it difficult to assess the impact of seasonal factors on our business. Our normal seasonality cycle has also been impacted by the COVID-19 pandemic and related events, making it more difficult to predict and determine a more consistent seasonality trend. See "Risk Factors- Our business operation and financial performance may be adversely affected by the COVID-19 pandemic and related events."

If we are unable to introduce or develop new and enhanced products that meet or are compatible with our customer's product requirements in a timely manner, it may harm our business, financial position and operating results.

Our success depends upon our ability to develop and introduce new and enhanced products that meet or are compatible with our customer's specifications, performance standards and other product requirements in a timely manner. The development of new and enhanced products involves highly complex processes, and at times we have experienced delays in the introduction of new products. Successful product development and introduction of new products depends on a number of factors, including the accurate product specification; timely completion of design; achievement of manufacturing yields; timely response to changes in customer's product requirements; quality and cost-effective production; and effective marketing. Since many of our products are designed for specific applications, we must frequently develop new and enhanced products jointly with our customers. In the past, we have encountered product compatibility issues with a major OEM that has negatively impacted our financial results, and although we have resolved fully such issues with the OEM, there is no guarantee that the same compatibility issues will not occur in the future with other OEMs. If we are unable to develop or acquire new products that meet or are compatible with our customer's specification and other product requirements in a timely manner, we may lose revenue or market share with our customers, which could have a material adverse effect on our business, financial position and operating results.

We may not win sufficient designs, or our design wins may not generate sufficient revenue for us to maintain or expand our business.

We invest significant resources to compete with other power semiconductor companies to win competitive bids for our products in selection processes, known as "design wins." Our effort to obtain design wins may detract from or delay the completion of other important development projects, impair our relationships with existing end customers and negatively impact sales of products under development. In addition, we cannot be assured that these efforts would result in a design win, that our product would be incorporated into an end customer's initial product design, or that any such design win would lead to production orders and generate sufficient revenue. Furthermore, even after we have qualified our products with a customer and made sales, subsequent changes to our products, manufacturing processes or suppliers may require a new qualification process, which may result in delay and excess inventory. If we cannot achieve sufficient design wins in the future, or if we fail to generate production orders following design wins, our ability to grow our business and improve our financial results will be harmed.

Our success depends upon the ability of our OEM end customers to successfully sell products incorporating our products.

The consumer end markets, in particular the PC market, in which our products are used are highly competitive. Our OEM end customers may not successfully sell their products for a variety of reasons, including:

- general global and regional economic conditions;
- late introduction or lack of market acceptance of their products;
- lack of competitive pricing;
- shortage of component supplies;
- excess inventory in the sales channels into which our end customers sell their products;
- changes in the supply chain; and
- changes as a result of regulatory restrictions applicable to China-exported products.

Our success depends on the ability of our OEM end customers to sell their products incorporating our products. In addition, we have expanded our business model to include more OEMs in our direct customer base. The failure of our OEM end customers to achieve or maintain commercial success for any reason could harm our business, results of operations, and financial condition and prospects.

The operation of our Oregon Fab subjects us to additional risks and the need for additional capital expenditures which may negatively impact our results of operations.

The operation of the Oregon Fab requires significant fixed manufacturing cost. In order to manage the capacity of the wafer fabrication facility efficiently, we must perform a forecast of long-term market demand and general economic conditions for our products. Because market conditions may vary significantly and unexpectedly, our forecast may change significantly at any time, and we may not be able to make timely adjustments to our fabrication capacity in response to these changes. During periods of continued decline in market demand, in particular the decline of the PC market, we may not be able to absorb the excess inventory and additional costs associated with operating the facility at higher capacity, which may adversely affect our operating results. Similarly, during periods of unexpected increase in customer demand, we may not be able to ramp up production quickly to meet these demands, which may lead to the loss of significant revenue opportunities. The manufacturing processes of a fabrication facility are complex and subject to interruptions. We may experience production difficulties, including lower manufacturing yields or products that do not meet our or our customers' specifications, and problems in ramping production and installing new equipment. These difficulties could result in delivery delays, quality problems and lost revenue opportunities. Any significant quality problems could also damage our reputation with our customers and distract us from the development of new and enhanced product which may have a significant negative impact on our financial results.

In addition, semiconductor manufacturing has historically required an upgrading of process technology from time to time to remain competitive, as new and enhanced semiconductor processes are developed which permit smaller, more efficient and more powerful semiconductor devices. Accordingly, we may have to incur substantial capital expenditures and install significant production capacity at our in-house fabrication facility to support new technologies and increased production volume, which may cause delay in our ability to deliver new products or negatively impact our results of operations. For example, we recently commenced a plan to enhance the manufacturing capability and capacity of our Oregon fab by investing in new equipment and expanding our factory facilities, which we expect will have a positive impact on our future new product development and revenue, particularly during the period of global shortage of capacity. The equipment installation contractors have experienced a shortage of skilled labor and certain materials. As a result, the expansion is expected to be now completed in the fiscal quarter ending March 31, 2023, although further delays are possible. While we expect such investment will enable us to accommodate increasing customer demand and generate additional revenue, there is no guarantee that we will be able to do so, and our investment may not produce the return that we expected, which may adversely affect our business and results of operations.

We may not be able to successfully develop our digital power business.

In September 2017, we entered into a license agreement with STMicro, which allows us to develop and market certain digital power multi-phase controller products and enter into a new market, primarily in the computer server market. We are in the process of developing this new digital power business and expect to incur significant costs to develop this business, including costs relating to the hiring and compensation of qualified engineers and technical staff; development of marketing and sales infrastructure, particularly in the computer server market; and other research and development and management activities. We do not expect this new business to generate sufficient revenue to offset our costs in the short term, and there is no guarantee that our attempt to develop a profitable digital business will ultimately succeed. The success of our digital power business depends on a number of factors, including the following:

- competition from other companies with greater resources and experiences and more established reputations in the digital power market;
- the availability of and our ability to recruit and attract qualified personnel;
- our lack of experience and reputation in the digital power market;
- difficulties in designing products acceptable to customers;
- legal and regulatory restrictions; and
- inadequate sales and marketing capability.

Any one of these factors may negatively impact our ability to create a successful digital power business, which would adversely affect our financial condition and results of operations.

Defects and poor performance in our products could result in loss of customers, decreased revenue, unexpected expenses and loss of market share, and we may face warranty and product liability claims arising from defective products.

Our products are complex and must meet stringent quality requirements. Products as complex as ours may contain undetected errors or defects, especially when first introduced or when new versions are released. Errors, defects or poor performance can arise due to design flaws, defects in raw materials or components or manufacturing anomalies, which can affect both the quality and the yield of the product. It can also be potentially dangerous as defective power components, or improper use of our products by customers, may lead to power overloads, which could result in explosion or fire. Any actual or perceived errors, defects or poor performance in our products could result in the replacement or recall of our products, shipment delays, rejection of our products, damage to our reputation, lost revenue, diversion of our engineering personnel from our product development efforts in order to address or remedy any defects and increases in customer service and support costs, all of which could have a material adverse effect on our business and operations.

Furthermore, as our products are typically sold at prices much lower than the cost of the equipment or other devices incorporating our products, any defective, inefficient or poorly performing products, or improper use by customers of power components, may give rise to warranty and product liability claims against us that exceed any revenue or profit we receive from the affected products. We could incur significant costs and liabilities if we are sued and if damages are awarded against us. There is no guarantee that our insurance policies will be available or adequate to protect against such claims. Costs or payments we may make in connection with warranty and product liability claims or product recalls may adversely affect our financial condition and results of operations.

If we do not forecast demand for our products accurately, we may experience product shortages, delays in product shipment, excess product inventory, or difficulties in planning expenses, which will adversely affect our business and financial condition.

We manufacture our products according to our estimates of customer demand. This process requires us to make numerous forecasts and assumptions relating to the demand of our end customers, channel inventory, and general market conditions. Because we sell most of our products to distributors, who in turn sell to our end customers, we have limited visibility as to end customer demand. Furthermore, we do not have long-term purchase commitments from our distributors or end customers, and our sales are generally made by purchase orders that may be cancelled, changed or deferred without notice to us or penalty. As a result, it is difficult to forecast future customer demand to plan our operations.

The utilization of our manufacturing facilities and the provisions for inventory write-downs are important factors in our profitability. If we overestimate demand for our products, or if purchase orders are canceled or shipments delayed, we may have excess inventory, which may result in adjustments to our production plans. These adjustments to our productions may affect the utilization of our own wafer fabrication and packaging facilities. If we cannot sell certain portions of the excess inventory, it will affect our provisions for inventory write-downs. Our inventory write-down provisions are subject to adjustment based on events that may not be known at the time the provisions are made, and such adjustments could be material and impact our financial results negatively.

If we underestimate demand, we may not have sufficient inventory to meet end-customer demand, and we may lose market share and damage relationships with our distributors and end customers and we may have to forego potential revenue opportunities. Obtaining additional supply in the face of product shortages may be costly or impossible, particularly in the short term, which could prevent us from fulfilling orders in a timely manner or at all.

In addition, we plan our operating expenses, including research and development expenses, hiring needs and inventory investments, based in part on our estimates of customer demand and future revenue. If customer demand or revenue for a particular period is lower than we expect, we may not be able to proportionately reduce our fixed operating expenses for that period, which would harm our operating results.

We face intense competition and may not be able to compete effectively which could reduce our revenue and market share.

The power semiconductor industry is highly competitive and fragmented. If we do not compete successfully against current or potential competitors, our market share and revenue may decline. Our main competitors are primarily headquartered in the United States, Japan, Taiwan and Europe. Our major competitors for our power discretes include Infineon Technologies AG, MagnaChip Semiconductor Corporation, ON Semiconductor Corp., STMicroelectronics N.V., Toshiba Corporation, Diodes Incorporated and Vishay Intertechnology, Inc. Our major competitors for our power ICs include Global Mixed-mode Technology Inc., Monolithic Power Systems, Inc., ON Semiconductor Corp., Richtek Technology Corp., Semtech Corporation, Texas Instruments Inc. and Vishay Intertechnology, Inc.

We expect to face competition in the future from our competitors, other manufacturers, designers of semiconductors and start-up semiconductor design companies. Many of our competitors have competitive advantages over us, including:

- significantly greater financial, technical, research and development, sales and marketing and other resources, enabling them to invest substantially more resources than us to respond to the adoption of new or emerging technologies or changes in customer requirements;
- greater brand recognition and longer operating histories;
- larger customer bases and longer, more established relationships with distributors or existing or potential end customers, which may provide them with greater reliability and information regarding future trends and requirements that may not be available to us;
- the ability to provide greater incentives to end customers through rebates, and marketing development funds or similar programs;

- more product lines, enabling them to bundle their products to offer a broader product portfolio or to integrate power management functionality into other products that we do not sell;
- greater ability and more resources to influence and participate in the regulatory and legislative process for more favorable laws and regulations; and
- captive manufacturing facilities, providing them with guaranteed access to manufacturing facilities in times of global semiconductor shortages.

In addition, the semiconductor industry has experienced increased consolidation over the past several years that may adversely affect our competitive position. Consolidation among our competitors could lead to a less favorable competitive landscape, capabilities and market share, which could harm our business and results of operations.

If we are unable to compete effectively for any of the foregoing or other reasons, our business, results of operations, and financial condition and prospects will be harmed.

Our reliance on third-party semiconductor foundries to manufacture our products subject us to risks.

The allocation of our wafer production between in-house facility and third-party foundries may fluctuate from time to time. We expect to continue to rely in part on third party foundries to meet our wafer requirements. Although we use several independent foundries, our primary third-party foundry is HHGrace, which manufactured 10.3%, 11.5% and 12.7% of the wafers used in our products for the fiscal years ended June 30, 2022, 2021 and 2020, respectively.

If any third-party foundry does not provide competitive pricing or is not able to meet our required capacity for any reason, we may not be able to obtain the required capacity to manufacture our products timely or efficiently. From time to time, third party suppliers may extend lead-times, limit supplies or increase prices due to capacity constraints or other factors, and we may experience a shortage of capacity on an industry-wide basis that may last for an extended period of time. There are no assurances that we will be able to maintain sufficient capacity to meet the full demand from our customers, and failure to do so will adversely affect our results of operations. If we cannot maintain sufficient capacity or control pricing with our existing third-party foundries, we may need to increase our own manufacturing capacity, and there is no assurance that we can ramp up the production of the Oregon Fab timely to meet the increased demand. If not, we may need to seek alternative foundries, which may not be available on commercially reasonable terms, or at all. In addition, the process for qualifying a new foundry is time consuming, difficult and may not be successful, particularly if we cannot integrate our proprietary process technology with the process used by the new foundry. Using a foundry with which we have no established relationship could expose us to potentially unfavorable pricing, unsatisfactory quality or insufficient capacity allocation.

In addition, even though we have been transferring more new product developments to our Oregon Fab and we expect to increase gradually the utilization of capacity at our JV Company as it ramps up production, we still rely on third-party foundries to effectively implement certain of our proprietary technology and processes and also require their cooperation in developing new fabrication processes. Any failure to do so may impair our ability to introduce new products and on time delivery of wafers for our existing products. In order to maintain our profit margins and to meet our customer demand, we need to achieve acceptable production yields and timely delivery of silicon wafers. As is common in the semiconductor industry, we have experienced, and may experience from time to time, difficulties in achieving acceptable production yields and timely delivery from third-party foundry vendors. Minute impurities in a silicon wafer can cause a substantial number of wafers to be rejected or cause numerous die on a wafer to be defective. Low yields often occur during the production of new products, the migration of processes to smaller geometries or the installation and start up of new process technologies.

We face a number of other significant risks associated with outsourcing fabrication, including:

- limited control over delivery schedules, quality assurance and control and production costs;
- discretion of foundries to reduce deliveries to us on short notice, allocate capacity to other customers that may be larger or have long-term customer or preferential arrangements with foundries that we use;
- unavailability of, or potential delays in obtaining access to, key process technologies;
- limited warranties on wafers or products supplied to us;
- damage to equipment and facilities, power outages, equipment or materials shortages that could limit manufacturing yields and capacity at the foundries;
- potential unauthorized disclosure or misappropriation of intellectual property, including use of our technology by the foundries to make products for our competitors;

- financial difficulties and insolvency of foundries; and
- acquisition of foundries by third parties.

Any of the foregoing risks could delay shipment of our products, result in higher expenses and reduced revenue, damage our relationships with customers and otherwise adversely affect our business and operating results.

Our reliance on distributors to sell a substantial portion of our products subjects us to a number of risks.

We sell a substantial portion of our products to distributors, who in turn sell to our end customers. Our distributors typically offer power semiconductor products from several different companies, including our direct competitors. The distributors assume collection risk and provide logistical services to end customers, including stocking our products. Two distributors, WPG and Promate, collectively accounted for 64.3%, 64.1% and 64.8% of our revenue for the fiscal years ended June 30, 2022, 2021 and 2020, respectively. Our agreements with Promate and WPG were renewed in July 2017 and are automatically renewed for each one-year period continuously unless terminated earlier pursuant to the provisions in the agreements. We believe that our success will continue to depend upon these distributors. Our reliance on distributors subjects us to a number of risks, including:

- write-downs in inventories associated with stock rotation rights and increases in provisions for price adjustments granted to certain distributors;
- potential reduction or discontinuation of sales of our products by distributors;
- failure to devote resources necessary to sell our products at the prices, in the volumes and within the time frames that we expect;
- focusing their sales efforts on products of our competitors;
- dependence upon the continued viability and financial resources of these distributors, some of which are small organizations with limited working capital and all of which depend on general economic conditions and conditions within the semiconductor industry;
- dependence on the timeliness and accuracy of shipment forecasts and resale reports from our distributors;
- management of relationships with distributors, which can deteriorate as a result of conflicts with efforts to sell directly to our end customers; and
- our agreements with distributors which are generally terminable by either party on short notice.

If any significant distributor becomes unable or unwilling to promote and sell our products, or if we are not able to renew our contracts with the distributors on acceptable terms, we may not be able to find a replacement distributor on reasonable terms or at all and our business could be harmed.

We have made and may continue to make strategic acquisitions of other companies, assets or businesses and these acquisitions introduce significant risks and uncertainties.

In order to position ourselves to take advantage of growth opportunities, we have made, and may continue to make, strategic acquisitions, mergers, partnership and alliances that involve significant risks and uncertainties. Successful acquisitions and alliances in the semiconductor industry are difficult to accomplish because they require, among other things, efficient integration and aligning of product offerings and manufacturing operations and coordination of sales and marketing and research and development efforts. The difficulties of integration and alignment may be increased by the necessity of coordinating geographically separated organizations, the complexity of the technologies being integrated and aligned and the necessity of integrating personnel with disparate business backgrounds and combining different corporate cultures. Furthermore, there is no guarantee that we will be able to identify a viable target for strategic acquisition, and we may incur significant costs and resources in such effort that may not result in a successful acquisition.

In addition, we may also issue equity securities to pay for future acquisitions or alliances, which could be dilutive to existing shareholders. We may also incur debt or assume contingent liabilities in connection with acquisitions and alliances, which could impose restrictions on our business operations and harm our operating results.

If we are unable to obtain raw materials in a timely manner or if the price of raw materials increases significantly, production time and product costs could increase, which may adversely affect our business.

Our fabrication and packaging processes depend on raw materials such as silicon wafers, gold, copper, molding compound, petroleum and plastic materials and various chemicals and gases. From time to time, suppliers may extend lead times, limit supplies or increase prices due to capacity constraints or other factors. If the prices of these raw materials rise significantly, we may be unable to pass on the increased cost to our customers. Our results of operations could be adversely affected if we are unable to obtain adequate supplies of raw materials in a timely manner or at reasonable price. In addition, from time to time, we may need to reject raw materials because they do not meet our specifications or the sourcing of such materials do not comply with our conflict mineral policies, resulting in potential delays or declines in output. Furthermore, problems with our raw materials may give rise to compatibility or performance issues in our products, which could lead to an increase in customer returns or product warranty claims. Errors or defects may arise from raw materials supplied by third parties that are beyond our detection or control, which could lead to additional customer returns or product warranty claims that may adversely affect our business and results of operations.

We may not be able to accurately estimate provisions at fiscal period end for price adjustment and stock rotation rights under our agreements with distributors, and our failure to do so may impact our operating results.

We sell a majority of our products to distributors under arrangements allowing price adjustments and returns under stock rotation programs, subject to certain limitations. As a result, we are required to estimate allowances for price adjustments and stock rotation for our products as inventory at distributors at each reporting period end. Our ability to reliably estimate these allowances enables us to recognize revenue upon delivery of goods to distributors instead of upon resale of goods by distributors to end customers.

We estimate the allowance for price adjustment based on factors such as distributor inventory levels, pre-approved future distributor selling prices, distributor margins and demand for our products. Our estimated allowances for price adjustments, which we offset against accounts receivable from distributors, were $18.7 million and $12.4 million at June 30, 2022 and 2021, respectively.

Our accruals for stock rotation are estimated based on historical returns and individual distributor agreement, and stock rotation rights, which are recorded as accrued liabilities on our consolidated balance sheets, are contractually capped based on the terms of each individual distributor agreement. Our estimated liabilities for stock rotation at June 30, 2022 and 2021 were $4.8 million and $3.9 million, respectively.

Our estimates for these allowances and accruals may be inaccurate. If we subsequently determine that any allowance and accrual based on our estimates is insufficient, we may be required to increase the size of our allowances and accrual in future periods, which would adversely affect our results of operations and financial condition.

We depend on the continuing services of our senior management team and other key personnel, and if we lose a member of our senior management or are unable to successfully retain, recruit and train key personnel, our ability to develop and market our products could be harmed.

Our success depends upon the continuing services of members of our senior management team and various engineering and other technical personnel. In particular, our engineers and other sales and technical personnel are critical to our future technological and product innovations. Our industry is characterized by high demand and intense competition for talent and the pool of qualified candidates is limited. We have entered into employment agreements with certain senior executives, but we do not have employment agreements with most of our employees. Many of these employees could leave our company with little or no prior notice and would be free to work for a competitor. If one or more of our senior executives or other key personnel are unable or unwilling to continue in their present positions, we may not be able to replace them easily or at all and other senior management may be required to divert attention from other aspects of our business. In addition, we do not have “key person” life insurance policies covering any member of our management team or other key personnel. The loss of any of these individuals or our inability to attract or retain qualified personnel, including engineers and others, could adversely affect our product introductions, overall business growth prospects, results of operations and financial condition.

Failure to protect our patents and our other proprietary information could harm our business and competitive position.

Our success depends, in part, on our ability to protect our intellectual property. We rely on a combination of patent, copyright (including mask work protection), trademark and trade secret laws, as well as nondisclosure agreements, license agreements and other methods to protect our intellectual property rights, which may not be sufficient to protect our intellectual property. As of June 30, 2022, we owned 888 issued U.S. patents expiring between 2022 and

2041 and had 62 pending patent applications with the United States Patent and Trademark Office. In addition, we own patents and have filed patent applications in several jurisdictions outside of the U.S, including China, Taiwan, Japan and Korea.

Our patents and patent applications may not provide meaningful protection from our competitors, and there is no guarantee that patents will be issued from our patent applications. The status of any patent or patent application involves complex legal and factual determinations and the breadth of a claim is uncertain. In addition, our efforts to protect our intellectual property may not succeed due to difficulties and risks associated with:

- policing any unauthorized use of or misappropriation of our intellectual property, which is often difficult and costly and could enable third parties to benefit from our technologies without paying us;
- others independently developing similar proprietary information and techniques, gaining authorized or unauthorized access to our intellectual property rights, disclosing such technology or designing around our patents;
- the possibility that any patent or registered trademark owned by us may not be enforceable or may be invalidated, circumvented or otherwise challenged in one or more countries may limit our competitive advantages;
- uncertainty as to whether patents will be issued from any of our pending or future patent applications with the scope of the claims sought by us, if at all; and
- intellectual property laws and confidentiality laws may not adequately protect our intellectual property rights, including, for example, in China where enforcement of China intellectual property-related laws have historically been less effective, primarily because of difficulties in enforcement and low damage awards.

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

In addition, we have a number of third-party patent and intellectual property license agreements, one of which requires us to make ongoing royalty payments. In the future, we may need to obtain additional licenses, renew existing license agreements or otherwise replace existing technology. We are unable to predict whether these license agreements can be obtained or renewed or the technology can be replaced on acceptable terms, or at all.

Intellectual property disputes could result in lengthy and costly arbitration, litigation or licensing expenses or prevent us from selling our products.

As is typical in the semiconductor industry, we or our customers may receive claims of infringement from time to time or otherwise become aware of potentially relevant patents or other intellectual property rights held by other parties that may cover some of our technology, products and services or those of our end customers. The semiconductor industry is characterized by vigorous protection and pursuit of intellectual property rights which has resulted in protracted and expensive arbitration and litigation for many companies. Patent litigation has increased in recent years due to increased assertions made by intellectual property licensing entities or non-practicing entities and increasing competition and overlap of product functionality in our markets.

Any litigation or arbitration regarding patents or other intellectual property could be costly and time consuming and could divert our management and key personnel from our business operations. We have in the past and may from time to time in the future become involved in litigation that requires our management to commit significant resources and time. In addition, as part of our strategy to diversify our serviceable markets, we launched several key product families and technologies to enable high efficiency power conversion solutions and we plan to develop and commercialize new products in other power semiconductor markets. Our entry into the commercial markets for high-voltage power semiconductors and other markets as a result of our diversification strategy may subject us to additional and increased risk of disputes or litigation relating to these products.

Because of the complexity of the technology involved and the uncertainty of litigation generally, any intellectual property arbitration or litigation involves significant risks. Any claim of intellectual property infringement against us may require us to:

- incur substantial legal and personnel expenses to defend the claims or to negotiate for a settlement of claims;

- pay substantial damages or settlement to the party claiming infringement;
- refrain from further development or sale of our products;
- attempt to develop non-infringing technology, which may be expensive and time consuming, if possible at all;
- enter into costly royalty or license agreements that might not be available on commercially reasonable terms or at all;
- cross-license our technology with a competitor to resolve an infringement claim, which could weaken our ability to compete with that competitor; and
- indemnify our distributors, end customers, licensees and others from the costs of and damages of infringement claims by our distributors, end customers, licensees and others, which could result in substantial expenses for us and damage our business relationships with them.

Any intellectual property claim or litigation against us harm our business, results of operations, financial condition and prospects.

The current government investigation and evolving export control regulations may adversely affect our financial performance and business operations.

The U.S. Department of Justice commenced an investigation into the Company's compliance with export control regulations relating to its business transactions with Huawei and its affiliates ("Huawei"), which were added to the "Entity List" by the Department of Commerce ("DOC") in May 2019. In connection with this investigation, DOC requested the Company to suspend shipments of its products to Huawei, and the Company complied with such request. The Company has not shipped any product to Huawei since December 31, 2019. The Company is currently working with DOC to resolve this issue and requested DOC to grant permission to reinstate shipments to Huawei. To date DOC has not provided us with any timeline or schedule under which DOC will respond to our request. There is no guarantee that DOC will agree to permit us to resume shipment to Huawei on a timely basis, or at all. The DOC's decision may be influenced by factors beyond our control, such as shifting political dynamics and the macro-economic relationship between the U.S. and China and changes in export control regulations. Our inability to continue such shipment may negatively impact our revenue and financial performance, particularly if we are not able to acquire new customers to offset the loss of shipments to Huawei.

The ongoing government investigations into our export control compliance also subject us to a number of financial and business risks. We expect to incur significant costs and expenses, including legal fees, in connection with our effort to respond to the government investigation, as well as additional legal fees for defending securities class actions resulting from public disclosure of the government investigation. Such additional costs will adversely affect our profitability. While the Company has purchased a D&O insurance policy which may reimburse a portion of such fees and expenses, there is no guarantee that such policy will be sufficient to reduce our costs or that reimbursement can be obtained on a timely basis or at all. Furthermore, the management has diverted its resources and time in response to the investigation, and might not be able to fully engage with the core operation and objectives of our business activities. Finally, while we are fully cooperating with the government in the investigation, we are not able to predict its timing and outcome. In the event that the government decides to bring enforcement action against us, it will result in a material adverse effect on our business operations, our financial conditions and our reputation.

We also expect that the U.S. export control regulations to evolve and change in response to the political and economic tension between the U.S. and China, including potential new export control regulations that may impose additional restrictions on our ability to continue to do business with certain customers in China and Asia. If such changes occur, we may be required to reduce shipments to certain Asian customers, adjust our business practices and incur additional costs to implement new export control compliance procedures, policies and programs, each of which will adversely affect our financial conditions and results of operations.

Global or regional economic, political and social conditions could adversely affect our business and operating results.

External factors such as potential terrorist attacks, acts of war, financial crises, such as the global or regional economic recession, or geopolitical and social turmoil in those parts of the world that serve as markets for our products could have significant adverse effect on our business and operating results in ways that cannot presently be predicted. Any future economic downturn or recession in the global economy in general and, in particular, on the economies in China, Taiwan and other countries where we market and sell our products, will have an adverse effect on our results of operations.

Our business operations could be significantly harmed by natural disasters or global epidemics.

We have research and development facilities located in Taiwan and the Silicon Valley in Northern California. Historically, these regions have been vulnerable to natural disasters and other risks, such as earthquakes, fires and floods, which may disrupt the local economy and pose physical risks to our property. We also have sales offices located in Taiwan and Japan where similar natural disasters and other risks may disrupt the local economy and pose physical risks to our operations. We are not currently covered by insurance against business disruption caused by earthquakes. In addition, we currently do not have redundant, multiple site capacity in the event of a natural disaster or other catastrophic event. In the event of such an occurrence, our business would suffer.

Our business could be adversely affected by natural disasters such as epidemics, outbreaks or other health crisis. An outbreak of avian flu or H1N1 flu in the human population, or another similar health crisis, such as the recent COVID-19 pandemic, could adversely affect the economies and financial markets of many countries, particularly in Asia. Moreover, any related disruptions to transportation or the free movement of persons could hamper our operations and force us to close our offices temporarily.

The occurrence of any of the foregoing or other natural or man-made disasters could cause damage or disruption to us, our employees, operations, distribution channels, markets and customers, which could result in significant delays in deliveries or substantial shortages of our products and adversely affect our business results of operations, financial condition or prospects.

Our insurance may not cover all losses, including losses resulting from business disruption or product liability claims.

We have limited product liability, business disruption or other business insurance coverage for our operations. In addition, we do not have any business insurance coverage for our operations to cover losses that may be caused by litigation or natural disasters. Any occurrence of uncovered loss could harm our business, results of operations, financial condition and prospects.

Our international operations subject our company to risks not faced by companies without international operations.

We have adopted a global business model under which we maintain significant operations and facilities through our subsidiaries located in the U.S., China, Taiwan and Hong Kong. Our main research and development center is located in Silicon Valley, and our manufacturing and supply chain is located in China. We also have sales offices and customers throughout Asia, the U.S. and elsewhere in the world. Our international operations may subject us to the following risks:

- economic and political instability, including trade tension between the U.S. and China;
- costs and delays associated with transportations and communications;
- coordination of operations through multiple jurisdictions and time zones;
- fluctuations in foreign currency exchange rates;
- trade restrictions, changes in laws and regulations relating to, amongst other things, import and export tariffs, taxation, environmental regulations, land use rights and property; and
- the laws of, including tax laws, and the policies of the U.S. toward, countries in which we operate.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud.

Our management may conclude that our internal control over financial reporting is not effective. Moreover, even if our management concludes that our internal control over financial reporting is effective, our independent registered public accounting firm may decline to issue an opinion as to the effectiveness of our internal control over financial reporting, or may issue a report that is qualified or adverse. Our failure to achieve and maintain effective internal control over financial reporting could result in the loss of investor confidence in the reliability of our financial statements or prevent fraud, which in turn could harm our business and negatively impact the trading price of our shares.

We are subject to the risk of increased income taxes and changes in existing tax rules.

We conduct our business in multiple jurisdictions, including Hong Kong, Macau, the U.S., China, Taiwan, South Korea, Japan and Germany. The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in various taxing jurisdictions. Any of these jurisdictions may assert that we have unpaid taxes. Our effective tax rate was 7.9%, 6.5% and (1.9)% for the fiscal years ended June 30, 2022, 2021 and 2020, respectively.

Any tax rate changes in the tax jurisdictions in which we operate could result in adjustments to our deferred tax assets, if applicable, which would affect our effective tax rate and results of operations. We base our tax position upon the anticipated nature and conduct of our business and upon our understanding of the tax laws of the various countries in which we have assets or conduct activities. However, our tax position is subject to review and possible challenge by tax authorities and to possible changes in law, which may have a retroactive effect. In particular, various proposals over the years have been made to change certain U.S. tax laws relating to foreign entities with U.S. connections. In addition, the U.S. government has proposed various other changes to the U.S. international tax system, certain of which could adversely impact foreign-based multinational corporate groups, and increased enforcement of U.S. international tax laws.

In August 2022 the U.S. enacted the Chip and Science Act of 2022 (the Chips Act). The Chips Act provides incentives to semiconductor chip manufacturers in the United States, including providing a 25% manufacturing investment credits for investments in semiconductor manufacturing property placed in service after December 31, 2022, for which construction begins before January 1, 2027. Property investments qualify for the 25% credit if, among other requirements, the property is integral to the operation of an advanced manufacturing facility, defined as having a primary purpose of manufacturing semiconductors or semiconductor manufacturing equipment. Currently, we are evaluating the impact of the Chips Act to us.

It is possible that these or other changes in the U.S. tax laws, foreign tax laws, or proposed actions by international bodies such as the Organization of Economic Cooperation and Development (OECD) could significantly increase our U.S. or foreign income tax liability in the future, including as described further below in this risk factor.

In December 2017, the European Union (“EU”) identified certain jurisdictions (including Bermuda and Cayman Islands) which it considered had a tax system that facilitated offshore structuring by attracting profits without commensurate economic activity. In order to avoid EU “blacklisting”, both Bermuda and Cayman Islands introduced new legislation in December 2018, which came into force on January 1, 2019. These new laws require Bermuda and Cayman companies carrying on one or more “relevant activity” (including: banking, insurance, fund management, financing, leasing, headquarters, shipping, distribution and service center, intellectual property or holding company) to maintain a substantial economic presence in Bermuda and Cayman Islands in order to comply with the economic substance requirements. Effective from December 31, 2019, we have structured our activities to comply with the new law. However, there is no experience yet as to how the Bermuda and Cayman Islands authorities will interpret and enforce these new rules. The legislation remains subject to further clarification and, accordingly, there is no guarantee that we will be deemed to be compliant. Furthermore, this legislation may require us to make additional changes to the activities we carry on in Bermuda or Cayman Islands, which could increase our costs either directly in those locations or indirectly as a result of increased costs related to moving our operations to other jurisdictions. As a result, we are not able to determine the impact on our operations and net income as of the current period.

In addition, our subsidiaries provide products and services to, and may from time to time undertake certain significant transactions with, us and other subsidiaries in different jurisdictions. We have adopted transfer pricing arrangements for transactions among our subsidiaries. Related party transactions are generally subject to close review by tax authorities, including requirements that transactions be priced at arm's length and be adequately documented. If any tax authorities were successful in challenging our transfer pricing policies or other tax judgments, our income tax expense may be adversely affected and we could also be subject to interest and penalty charges which may harm our business, financial condition and operating results.

Further, the U.S. Congress, the EU, the OECD, and other government agencies in jurisdictions where we and our affiliates do business have had an extended focus on issues related to the taxation of multinational corporations. One example is the OECD’s initiative in the area of “base erosion and profit shifting,” or “BEPS”. Many countries have implemented or begun to implement legislation and other guidance to align their international tax rules with the OECD’s BEPS recommendations. In addition, the OECD has been working on an extension of the BEPS project, being referred to as “BEPS 2.0”, which focuses on two “pillars” of reform. Pillar 1 is focused on global profit allocation and changing where large multinational corporations pay taxes, and pillar 2 includes a global minimum tax rate. The OECD published detailed blueprints of its proposals for pillar 1 and pillar 2 on October 14, 2020. In June 2021, Finance Ministers from the Group of Seven (G7) nations reached an accord on the principles of pillar 2, backing the creation of a global minimum corporate tax rate of at least 15%. Following the G7 announcement, the OECD/G20 Inclusive Framework announced on July 1, 2021 broad agreement on the two pillars, and released a proposal, which has been endorsed by over

130 jurisdictions, for a global minimum tax rate of at least 15% for large multinational corporations on a jurisdiction-by-jurisdiction basis. The OECD/G20 Inclusive Framework will work towards an agreement and the release of an implementation plan, which will contemplate bringing pillar 2 into law in 2022 with an effective date in 2023. As a result of the focus on the taxation of multinational corporations, the tax laws in the countries in which we and our affiliates do business could change on a prospective or retroactive basis, and any such changes could adversely affect us.

Our debt agreements include financial covenants that may limit our ability to pursue business and financial opportunities and subject us to risk of default.

We have entered into various debt agreements with certain financial institutions, which generally require us to maintain certain financial covenants that have the effect of limiting our ability to take certain actions, including actions to incur debt, repurchase stock, make certain investments and capital expenditures. As we continue to grow our business and expand our operations, we expect to incur additional indebtedness, including loan agreement or equipment leases, in order to fund such capital expenditures. These restrictions may limit our ability to pursue business and financial opportunities that are available or beneficial to us in response to changing and competitive economic environment, which may have an adverse effect on our financial conditions. In addition, a breach of any of these financial covenants, if not waived by the lenders, could trigger an event of default under the debt agreements, which may result in the acceleration of our indebtedness or the loss of our collateral used to secure such indebtedness.

The imposition of U.S. corporate income tax on our Bermuda parent and non-U.S. subsidiaries could adversely affect our results of operations.

We believe that our Bermuda parent and non-U.S. subsidiaries each operate in a manner that they would not be subject to U.S. corporate income tax because they are not engaged in a trade or business in the United States. Nevertheless, there is a risk that the U.S. Internal Revenue Service may assert that our Bermuda parent and non-U.S. subsidiaries are engaged in a trade or business in the United States. If our Bermuda parent and non-U.S. subsidiaries were characterized as being so engaged, we would be subject to U.S. tax at the regular corporate rates on our income that is effectively connected with U.S. trade or business, plus an additional 30% “branch profits” tax on the dividend equivalent amount, which is generally effectively connected income with certain adjustments, deemed withdrawn from the United States. Any such tax could materially and adversely affect our results of operations.

We may be classified as a passive foreign investment company (“PFIC”), which could result in adverse U.S. federal income tax consequences for U.S. holders.

Based on the current and anticipated valuation of our assets and the composition of our income and assets, we do not expect to be considered a PFIC, for U.S. federal income tax purposes for the foreseeable future. However, we must make a separate determination for each taxable year as to whether we are a PFIC after the close of each taxable year and we cannot assure you that we will not be a PFIC for our 2022 taxable year or any future taxable year. Under current law, a non-U.S. corporation will be considered a PFIC for any taxable year if either (1) at least 75% of its gross income is passive income or (2) at least 50% of the value of its assets, generally based on an average of the quarterly values of the assets during a taxable year, is attributable to assets that produce or are held for the production of passive income. PFIC status depends on the composition of our assets and income and the value of our assets, including, among others, a pro rata portion of the income and assets of each subsidiary in which we own, directly or indirectly, at least 25% by value of the subsidiary's equity interests, from time to time. Because we currently hold and expect to continue to hold a substantial amount of cash or cash equivalents, and because the calculation of the value of our assets may be based in part on the value of our common shares, which may fluctuate considerably given that market prices of technology companies historically often have been volatile, we may be a PFIC for any taxable year. If we were treated as a PFIC for any taxable year during which a U.S. holder held common shares, certain adverse U.S. federal income tax consequences could apply for such U.S. holder.

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

As is typical in the semiconductor industry, the average selling price of a particular product has historically declined significantly over the life of the product. In the past, we have reduced the average selling prices of our products in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. We expect that we will have to similarly reduce prices in the future for older generations of products. Reductions in our average selling prices to one customer could also impact our average selling prices to all customers. A decline in average selling prices would harm our gross margins for a particular product. If not offset by sales of other products with higher gross margins, our overall gross margins may be adversely affected. Our business, results of operations, financial condition and prospects will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing our costs and developing new or enhanced products on a timely basis, with higher selling prices or gross margins.

We may be adversely affected by the cyclicality of the semiconductor industry.

Our industry is highly cyclical and is characterized by constant and rapid technological change such as the introduction of smart phones and tablets that contributed to the decline in the PC market, product obsolescence and price erosion, evolving standards, uncertain product life cycles and wide fluctuations in product supply and demand. The industry has, from time to time, experienced significant and sometimes prolonged, downturns, which were often connected with or in anticipation of, maturing product cycles and declines in general economic conditions. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels and accelerated erosion of average selling prices. Any future downturns, in particular the PC markets or in any other markets in which we sell our products, may reduce our revenue and result in us having excess inventory. By contrast, any upturn in the semiconductor industry could result in increased competition for access to limited third-party foundry and packaging and testing capacity, which could prevent us from benefiting from such an upturn or reduce our profit margins.

Risks Related to Doing Business in China

China's economic, political and social conditions, as well as government policies, could affect our business and growth.

Our financial results have been, and are expected to continue to be, affected by the economy in China. If China’s economy is slowing down, it may negatively affect our business operation and financial results. The China economy differs from the economies of most developed countries in many respects, including:

- higher level of government involvement;
- early stage of development of a market-oriented economy;
- rapid growth rate;
- higher level of control over foreign currency exchange; and
- less efficient allocation of resources.

The Chinese economy has been transitioning from a planned economy to a more market-oriented economy. Although in recent years the China government has implemented measures emphasizing the utilization of market forces for economic reform, the reduction of state ownership of productive assets and the establishment of corporate governance in business enterprises, the China government continues to retain significant control over the business and productive assets in China. Any changes in China's government policy or China's political, economic and social conditions, or in relevant laws and regulations, may adversely affect our current or future business, results of operations or financial condition. These changes in government policy may be implemented through various means, including changes in laws and regulations, implementation of anti-inflationary measures, change of basic interest rate, changes in the tax rate or taxation system and the imposition of additional restrictions on currency conversion and imports. Furthermore, given China's largely export-driven economy, any changes in the economies of China's principal trading partners and other export-oriented nations may adversely affect our business, results of operations, financial condition and prospects.

Our ability to successfully expand our business operations in China depends on a number of factors, including macroeconomic and other market conditions, and credit availability from lending institutions. In response to the recent global and Chinese economic recession, the China government has promulgated several measures aimed at expanding credit and stimulating economic growth. We cannot assure you that the various macroeconomic measures, monetary policies and economic stimulus package adopted by the China government to guide economic growth will be effective in maintaining or sustaining the growth rate of the Chinese economy. If measures adopted by the China government fail to achieve further growth in the Chinese economy, it may adversely affect our growth, business strategies and operating results. In addition, changes in political and social conditions of China may adversely affect our ability to conduct our business in the region. For example, geopolitical disputes and increased tensions between China and its neighboring countries in which we conduct business could make it more difficult for us to coordinate and manage our international operations in such countries.

Changes in China's laws, legal protections or government policies on foreign investment in China may harm our business.

Our business and corporate transactions, including our operations through the JV Company, are subject to laws and regulations applicable to foreign investment in China as well as laws and regulations applicable to foreign-invested enterprises. These laws and regulations frequently change, and their interpretation and enforcement involves uncertainties that could limit the legal protections available to us. Regulations and rules on foreign investments in China impose restrictions on the means that a foreign investor like us may apply to facilitate corporate transactions we may undertake. In addition, the Chinese legal system is based in part on government policies and internal rules, some of which are not published on a timely basis or at all, that may have a retroactive effect. As a result, we may not be aware of our violation of these policies and rules until sometime after the violation. If any of our past operations are deemed to be non-compliant with Chinese law, we may be subject to penalties and our business and operations may be adversely affected. For instance, under Special Administrative Measures (Negative List) for Foreign Investment Access, some industries are categorized as sectors which are restricted or prohibited for foreign investment. As the Negative List is updated every year, there can be no assurance that the China government will not change its policies in a manner that would render part or all of our business to fall within the restricted or prohibited categories. If we cannot obtain approval from relevant authorities to engage in businesses which become prohibited or restricted for foreign investors, we may be forced to sell or restructure a business which has become restricted or prohibited for foreign investment. Furthermore, the China government has broad discretion in dealing with violations of laws and regulations, including levying fines, revoking business and other licenses and requiring actions necessary for compliance. In particular, licenses and permits issued or granted to us by relevant governmental bodies may be revoked at a later time by higher regulatory bodies. If we are forced to adjust our corporate structure or business as a result of changes in government policy on foreign investment or changes in the interpretation and application of existing or new laws, our business, financial condition, results of operations and prospects may be harmed. Moreover, uncertainties in the Chinese legal system may impede our ability to enforce contracts with our business partners, customers and suppliers, or otherwise pursue claims in litigation to recover damages or loss of property, which could adversely affect our business and operations.

The continuing trade tensions between the U.S. and China may result in increased tariffs on imported goods from China that could adversely affect our business operations.

Since 2018, U.S. and China trade tensions led to higher and increasing tariffs imposed by both countries on the import of goods from the other country. The U.S. government used various authorities to implement tariffs on a variety of Chinese goods and materials, which, absent exemptions, include products and applications, including consumer electronics, that incorporate our power discrete and power IC products. In response, China has imposed tariffs on certain American products, and warned of additional actions if the U.S. imposes new or increased tariffs. The continuing trade tensions could have significant adverse effects on world trade and the world economy. While the two countries have negotiated and entered into agreements to gradually reduce certain tariffs, it's unclear whether those agreements will significantly reduce the tariffs affecting our business operations. The ultimate level of tariffs, the ultimate scope of them, and whether or how any proposed additional tariffs will impact our business is uncertain. We believe that the imposition of additional tariffs by the U.S. government on products incorporating our power semiconductors could deter our customers from purchasing our products originating from China. If so, this would reduce demand for our power semiconductor products or result in pricing adjustments that would lower our gross margin, which could have a material adverse effect on our business and results of operations.

Substantial uncertainties exist with respect to the interpretation and implementation of PRC Foreign Investment Law and how it may impact the viability of our current corporate structure, corporate governance and business operations.

On March 15, 2019, the National People's Congress of the PRC promulgated the Foreign Investment Law, which took effect on January 1, 2020, and replaced the existing laws regulating foreign investment in China, namely, the Sino-foreign Equity Joint Venture Enterprise Law, the Sino-foreign Cooperative Joint Venture Enterprise Law and the Wholly Foreign-invested Enterprise Law, together with their implementation rules and ancillary regulations. The Foreign Investment Law embodies a PRC regulatory trend to rationalize its foreign investment regulatory regime in line with prevailing international practice and the legislative efforts to unify the corporate legal requirements for both foreign and domestic investments. The Foreign Investment Law establishes the basic framework for the access, promotion, protection and administration of foreign investments in China in view of investment protection and fair competition. For example, treatment of foreign investors on a national level will be no less favorable than the treatment received by domestic investors unless such investments fall within a "negative list". On June 30, 2019, the National Development and Reform Commission (the "NDRC") and the Ministry of Commerce of the PRC (the "MOC") published the Special Administrative Measures for Market Access of Foreign Investment (Negative List), which identifies specific sectors where foreign investors will be subject to special administrative measures. The Negative List has been updated twice in

June 2020 for year 2021 and December 2021 for year 2022. The current effective Negative List took effect on January 1, 2022.

Since the Foreign Investment Law was newly enacted, uncertainties still exist in relation to its interpretation and implementation. For example, the Foreign Investment Law provides that foreign invested enterprises established according to the existing laws regulating foreign investment may maintain their structure and corporate governance within a five-year transition period, which means that we may be required to adjust the structure and corporate governance of certain of our China subsidiaries in such transition period. Failure to take timely and appropriate measures to cope with any of these or similar regulatory compliance challenges could materially and adversely affect our current corporate structure, corporate governance and business operations.

In addition, under the newly enacted Foreign Investment Law, foreign investors or the foreign invested enterprise should report investment information on the principle of necessity. Any company found to be non-complaint with such investment information reporting obligation might be potentially subject to fines or administrative liabilities.

Limitations on our ability to transfer funds to our China subsidiaries could adversely affect our ability to expand our operations, make investments that could benefit our businesses and otherwise fund and conduct our business.

The transfer of funds from us to our China subsidiaries, either as a shareholder loan or as an increase in registered capital, is subject to registration with or approval by the China's governmental authorities, including the State Administration of Foreign Exchange, or SAFE's, or the relevant examination and approval authority. Our subsidiaries may also experience difficulties in converting our capital contributions made in foreign currencies into RMB due to changes in the China's foreign exchange control policies. Therefore, it may be difficult to change capital expenditure plans once the relevant funds have been remitted from us to our China subsidiaries. These limitations and the difficulties our China subsidiaries may experience on the free flow of funds between us and our China subsidiaries could restrict our ability to act in response to changing market situations in a timely manner.

China's currency exchange control and government restrictions on investment repatriation may impact our ability to transfer funds outside of China.

A significant portion of our business is conducted in China where the currency is the Renminbi. Regulations in China permit foreign owned entities to freely convert the Renminbi into foreign currency for transactions that fall under the “current account,” which includes trade related receipts and payments, interest and dividends. Accordingly, our Chinese subsidiaries may use Renminbi to purchase foreign exchange for settlement of such “current account” transactions without pre-approval. However, pursuant to applicable regulations, foreign-invested enterprises in China may pay dividends only out of their accumulated profits, if any, determined in accordance with Chinese accounting standards and regulations. In calculating accumulated profits, foreign investment enterprises in China are required to allocate at least 10% of their accumulated profits each year, if any, to fund certain reserve funds unless these reserves have reached 50% of the registered capital of the enterprises.

Other transactions that involve conversion of Renminbi into foreign currency are classified as “capital account” transactions; examples of “capital account” transactions include repatriations of investment by or loans to foreign owners, or direct equity investments in a foreign entity by a China domiciled entity. “Capital account” transactions require prior approval from, or registration with China's State Administration of Foreign Exchange (SAFE) or its provincial branch or its authorized banks to convert a remittance into a foreign currency, such as U.S. dollars, and transmit the foreign currency outside of China.

As a result of these and other restrictions under PRC laws and regulations, our China subsidiaries are restricted in their ability to transfer a portion of their net assets to the parent. Such restricted portion amounted to approximately $92.4 million, or 10.8% of our total consolidated net assets attributed to the Company as of June 30, 2022. We have no assurance that the relevant Chinese governmental authorities in the future will not limit further or eliminate the ability of our China subsidiaries to purchase foreign currencies and transfer such funds to us to meet our liquidity or other business needs. Any inability to access funds in China, if and when needed for use by the Company outside of China, could have a material and adverse effect on our liquidity and our business.

The M&A Rules and certain other PRC regulations establish complex procedures for some acquisitions of Chinese companies by foreign investors, which could make it more difficult for us to pursue growth through acquisitions in China.

The Regulations on Mergers and Acquisitions of Domestic Companies by Foreign Investors, or the M&A Rules, adopted by six PRC regulatory agencies in August 2006 and amended in 2009, and some other regulations and rules concerning mergers and acquisitions established additional procedures and requirements that could make merger and acquisition activities by foreign investors more time consuming and complex, including requirements in some instances that the Ministry of Commerce ("MOC") be notified in advance of any change-of-control transaction in which a foreign investor takes control of a PRC domestic enterprise. Moreover, the Anti-Monopoly Law requires that the MOC shall be notified in advance of any concentration of undertaking if certain thresholds are triggered. In addition, the security review rules issued by the MOC that became effective in September 2011 specify that mergers and acquisitions by foreign investors that raise “national defense and security” concerns and mergers and acquisitions through which foreign investors may acquire de facto control over domestic enterprises that raise “national security” concerns are subject to strict review by the MOC, and the rules prohibit any activities attempting to bypass a security review, including by structuring the transaction through a proxy or contractual control arrangement. On July 1, 2015, the National Security Law of China took effect, which provided that China would establish rules and mechanisms to conduct national security review of foreign investments in China that may impact national security. China’s Foreign Investment Law, which became effective in January 2020, reiterates that China will establish a security review system for foreign investments. On December 19, 2020, the NDRC and the MOC jointly issued the Measures for the Security Review of Foreign Investments (the “New FISR Measures”), which was made according to the National Security Law and the Foreign Investment Law of China and became effective on January 18, 2021. The New FISR Measures further expand the scope of national security review on foreign investment compared to the existing rules, while leaving substantial room for interpretation and speculation. In the future, we may grow our business by acquiring complementary businesses. Complying with the requirements of the above-mentioned regulations and other relevant rules to complete such transactions could be time consuming, and any required approval processes, including obtaining approval from the MOC or its local counterparts may delay or inhibit our ability to complete such transactions, which could affect our ability to expand our business or maintain our market share.

Our results of operations may be negatively impacted by fluctuations in foreign currency exchange rates between U.S. dollar and Chinese Yuan, or RMB.

While U.S. dollars is our main functional currency and our revenue and a significant portion of our operating expenses are denominated in U.S. dollars, we are required to maintain local currencies, primarily the RMB, in our cash balances in connection with the funding of our overseas operations. As a result, our costs and operating expenses may be exposed to adverse movements in foreign currency exchange rates between the U.S. dollar and RMB. We also do not utilize any financial instruments to hedge or reduce potential losses due to the fluctuation of foreign currency exchange rates. In general, any appreciation of U.S. dollars against a weaker RMB could reduce the value of our cash and cash equivalent balance, which could increase our operating expenses and negatively affect our cash flow, income and profitability. The value of RMB against the U.S. dollars may fluctuate and is affected by many factors outside of our control, including changes in political and economic conditions, implementation of new monetary policies by the Chinese government and changes in banking regulations, and there is no guarantee that we will be able to mitigate or recoup any losses due to a significant fluctuation in the U.S. dollar/RMB exchange rates.

PRC labor laws may adversely affect our results of operations.

The PRC government promulgated the Labor Contract Law of the PRC, effective on January 1, 2008, as amended, to govern the establishment of employment relationships between employers and employees, and the conclusion, performance, termination of and the amendment to employment contracts. The Labor Contract Law imposes greater liabilities on employers and significantly affects the cost of an employer’s decision to reduce its workforce. Further, it requires that certain termination decisions be based upon seniority and not merit. In the event our subsidiaries decide to significantly change or decrease their workforce in China, the Labor Contract Law could adversely affect their ability to effect such changes in a manner that is most advantageous to our business or in a timely and cost-effective manner, thus materially and adversely affecting our financial condition and results of operations.

In recent years, compensation in various industries in China has increased and may continue to increase in the future. In order to attract and retain skilled personnel, we may need to increase the compensation of our employees. Compensation may, also, increase as inflationary pressure increases in China. In addition, under the Regulations on Paid Annual Leave for Employees, which became effective on January 1, 2008, employees who have served more than one year for a specific employer are entitled to a paid vacation ranging from 5 to 15 days, depending on length of service. Employees who waive such vacation time at the request of employers must be compensated for three times their normal salaries for each waived vacation day. This mandated paid-vacation regulation, coupled with the trend of increasing compensation, may result in increase in our employee-related costs and expenses and decrease in our profit margins.

Relations between Taiwan and China could negatively affect our business, financial condition and operating results and, therefore, the market value of our common shares.

Taiwan has a unique international political status. China does not recognize the sovereignty of Taiwan. Although significant economic and cultural relations have been established during recent years between Taiwan and China, relations have often been strained. A substantial number of our key customers and some of our essential sales and engineering personnel are located in Taiwan, and we have a large number of operational personnel and employees located in China. Therefore, factors affecting military, political or economic relationship between China and Taiwan could have an adverse effect on our business, financial condition and operating results.

Risks Related to Our Corporate Structure and Our Common Shares

Our share price may be volatile and you may be unable to sell your shares at or above the purchase price, if at all.

Limited trading volumes and liquidity of our common shares on the NASDAQ Global Select Market may limit the ability of shareholders to purchase or sell our common shares in the amounts and at the times they wish. In addition, the financial markets in the United States and other countries have experienced significant price and volume fluctuations, and market prices of technology companies have been and continue to be extremely volatile. The trading price of our common shares on The NASDAQ Global Select Market ranged from a low of $24.40 to high of $65.72 from July 1, 2021 to June 30, 2022. At July 31, 2022, the trading price of our common shares was $42.01. Volatility in the price of our shares may be caused by factors outside our control and may be unrelated or disproportionate to our operating results.

The market price for our common shares may be volatile and subject to wide fluctuations in response to factors, including:

- actual or anticipated fluctuations in our operating results;
- general economic, industry, regional and global market conditions, including the economic conditions of specific market segments for our products, including the PC markets;
- our failure to meet analysts' expectations, including expectation regarding our revenue, gross margin and operating expenses;
- changes in financial estimates and outlook by securities research analysts;
- our ability to increase our gross margin;
- announcements by us or our competitors of new products, acquisitions, strategic partnerships, joint ventures or capital commitments;
- announcements of technological or competitive developments;
- announcement of acquisition, partnership and major corporate transactions;
- regulatory developments in our target markets affecting us, our customers or our competitors;
- our ability to enter into new market segments, gain market share, diversify our customer base and successfully secure manufacturing capacity;
- announcements regarding intellectual property disputes or litigation involving us or our competitors;
- changes in the estimation of the future size and growth rate of our markets;
- announcement of significant legal proceedings, litigation or government investigation;
- additions or departures of key personnel;
- repurchase of shares under our repurchase program;
- announcement of sales of our securities by us or by our major shareholders;
- general economic or political conditions in China and other countries in Asia; and
- other factors.

In the past, securities class action litigation has often been brought against a company following periods of volatility in such company's share price. This type of litigation could result in substantial costs and divert our management's attention and resources which could negatively impact our business and financial conditions. See Item 3. Legal Proceeding.

If securities or industry analysts do not publish research or reports about our business, or if they adversely change their recommendations regarding our common shares or if our operating results do not meet their expectations, the trading price of our common shares could decline.

The market price of our common shares is influenced by the research and reports that industry or securities analysts publish about us or our business. There is no guarantee that these analysts will understand our business and results, or that their reports will be accurate or correctly predict our operating results or prospects. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause the market price of our common shares or its trading volume to decline. Moreover, if one or more of the analysts who cover our company downgrade our common shares or if our operating results or prospects do not meet their expectations, the market price of our common shares could decline significantly.

Anti-takeover provisions in our bye-laws could make an acquisition of us more difficult and may prevent attempts by our shareholders to replace or remove our current management.

Certain provisions in our bye-laws may delay or prevent an acquisition of us or a change in our management. In addition, by making it more difficult for shareholders to replace members of our board of directors, these provisions also may frustrate or prevent any attempts by our shareholders to replace or remove our current management because our board of directors is responsible for appointing the members of our management team. These provisions include:

- the ability of our board of directors to determine the rights, preferences and privileges of our preferred shares and to issue the preferred shares without shareholder approval;
- advance notice requirements for election to our board of directors and for proposing matters that can be acted upon at shareholder meetings; and
- the requirement to remove directors by a resolution passed by at least two-thirds of the votes cast by the shareholders having a right to attend and vote at the shareholder meeting.

These provisions could make it more difficult for a third-party to acquire us, even if the third-party's offer may be considered beneficial by many shareholders. As a result, shareholders may be limited in their ability to obtain a premium for their shares.

We are a Bermuda company and the rights of shareholders under Bermuda law may be different from U.S. laws.

We are a Bermuda limited liability exempted company. As a result, the rights of holders of our common shares will be governed by Bermuda law and our memorandum of association and bye-laws. The rights of shareholders under Bermuda law may differ from the rights of shareholders of companies incorporated in other jurisdictions, including the U.S. For example, some of our directors are not residents of the United States, and a substantial portion of our assets are located outside the United States. As a result, it may be difficult for investors to effect service of process on those persons in the U.S. or to enforce in the U.S. judgments obtained in U.S. courts against us or those persons based on civil liability provisions of the U.S. securities laws. It is doubtful whether courts in Bermuda will enforce judgments obtained in other jurisdictions, including the U.S., against us or our directors or officers under the securities laws of those jurisdictions or entertain actions in Bermuda against us or our directors or officers under the securities laws of other jurisdictions.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

As of July 31, 2022, our primary U.S. facility, which houses our research and design function, as well as elements of marketing and administration, is located in Sunnyvale, California. We conduct our manufacturing, research and development, sales and marketing and administration in Asia and North America. We lease all properties used in our business except the wafer fabrication facility in Oregon acquired in January 2012. The following table sets forth the location, size and primary use of our principal properties that are material to our business operations:

Location	Square Footage	Primary Use
475 Oakmead Parkway Sunnyvale, California, USA 94085	57,000	Research and development, marketing, sales and administration
3131 Northeast Brookwood Parkway Hillsboro, Oregon, USA 97124	252,950	Wafer fabrication facility
Building 8/9, No. 91, Lane 109, Rongkang Road, Songjiang District, Shanghai, China 201614	206,179	Packaging and testing, manufacturing support
Building B1, Dongkai Industrial Park, Songjiang Export Process Zone, Area B, Songjiang, Shanghai, China 201614	250,198	Packaging and testing, manufacturing support

We believe that our current facilities are adequate and that additional space will be available on commercially reasonable terms for the foreseeable future.

Item 3. Legal Proceedings

As previously disclosed, the DOJ commenced an investigation into the Company's compliance with export control regulations relating to its business transactions with Huawei and its affiliates ("Huawei"), which were added to the "Entity List" by the DOC in May 2019. The Company is cooperating fully with federal authorities in the investigation. The Company has continued to respond to inquiries and requests from DOJ for documents and information relating to the investigation, and the matter is currently pending at DOJ, and DOJ has not provided the Company with any specific timeline or indication as to when the investigation will be concluded or resolved. In connection with this investigation, DOC previously requested the Company to suspend shipments of its products to Huawei. The Company complied with such request, and the Company has not shipped any product to Huawei after December 31, 2019. The Company continues to work with DOC to resolve this issue and requested DOC to grant permission to reinstate the Company's shipments to Huawei. As part of this process and in response to DOC's request, the Company provided certain documents and materials relating to the Company's supply chain and shipment process to DOC, and DOC is currently reviewing this matter. DOC has not informed the Company of any specific timeline or schedule under which DOC will provide a response to the Company's request.

We have in the past, and may from time to time in the future, become involved in legal proceedings arising from the normal course of business activities. The semiconductor industry is characterized by frequent claims and litigation, including claims regarding patent and other intellectual property rights as well as improper hiring practices. Irrespective of the validity of such claims, we could incur significant costs in the defense thereof or could suffer adverse effects on its operations.

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**

Our common shares have traded on the NASDAQ Global Select Market since April 29, 2010 under the symbol AOSL. As of July 31, 2022, there were approximately 160 holders of record of our common shares, not including those shares held in a street or nominee name.

Dividend Policy

We have never declared or paid cash dividends on our common shares. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common share in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

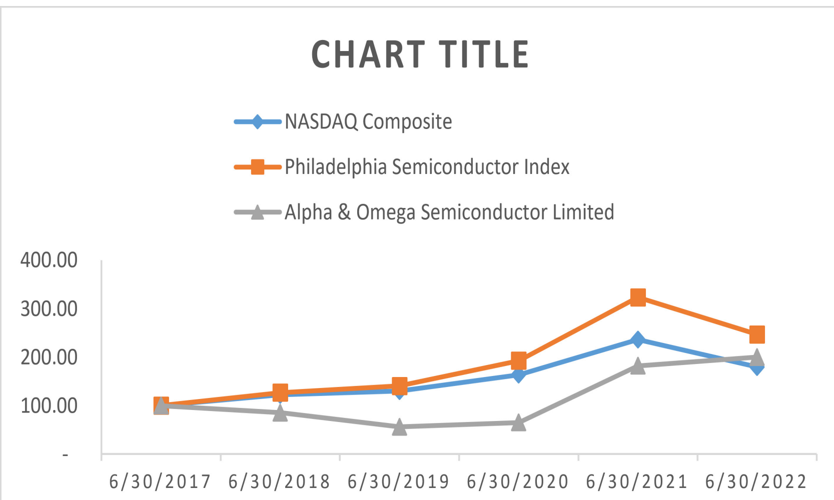
Securities Authorized for Issuance Under Equity Compensation Plans

See Item 12 of Part III of this report regarding information about securities authorized for issuance under our equity compensation plans.

Share Performance Graph

The following graph compares the total cumulative shareholder return on our common shares with the total cumulative return of the NASDAQ Composite Index and the Philadelphia Semiconductor Index for the last five fiscal years ended June 30, 2022, assuming an investment of $100 at the beginning of such period and the reinvestment of any dividends.

The comparisons in the graph below are required by the SEC and are not intended to forecast or be indicative of possible future performance of our common shares.



The above Share Performance Graph and related information shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that the Company specifically incorporates it by reference into such filing.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

In September 2017, the board of directors approved a repurchase program (the "Repurchase Program") that allowed the Company to repurchase its common shares from the open market pursuant to a pre-established Rule 10b5-1 trading plan or through privately negotiated transactions up to an aggregate of $30.0 million. The amount and timing of any repurchases under the Repurchase Program depend on a number of factors, including but not limited to, the trading price, volume and availability of the Company’s common shares. There is no guarantee that such repurchases under the Repurchase Program will enhance the value of our shares. Shares repurchased under this program are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. During the fourth quarter of fiscal year 2022, the Company did not repurchase any shares under the Repurchase Program. As of June 30, 2022, we had $13.4 million available under this repurchase program.

Item 6. [Reserved]

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

You should read the following discussion of the financial condition and results of our operations in conjunction with our consolidated financial statements and the notes to those statements included elsewhere in this annual report. Our consolidated financial statements contained in this annual report are prepared in accordance with U.S. GAAP.

Overview

We are a designer, developer and global supplier of a broad portfolio of power semiconductors. Our portfolio of power semiconductors includes approximately 2,500 products, and has grown significantly with the introduction of over 130 new products in the fiscal year ended June 30, 2022, and over 160 new products in each of the fiscal year ended June 30, 2020 and 2019, respectively. Our teams of scientists and engineers have developed extensive intellectual properties and technical knowledge that encompass major aspects of power semiconductors, which we believe enables us to introduce and develop innovative products to address the increasingly complex power requirements of advanced electronics. We have an extensive patent portfolio that consists of 888 patents and 62 patent applications in the United States as of June 30, 2022. We also have a total of 936 foreign patents, which primarily were based on our research and development efforts through June 30, 2022. We differentiate ourselves by integrating our expertise in technology, design and advanced manufacturing and packaging to optimize product performance and cost. Our portfolio of products targets high-volume applications, including personal computers, graphic cards, game consoles, flat panel TVs, home appliances, power tools, smart phones, battery packs, consumer and industrial motor controls and power supplies for TVs, computers, servers and telecommunications equipment.

Our business model leverages global resources, including research and development and manufacturing in the United States and Asia. Our sales and technical support teams are localized in several growing markets. We operate an 8-inch wafer fabrication facility located in Hillsboro, Oregon, or the Oregon Fab, which is critical for us to accelerate proprietary technology development, new product introduction and improve our financial performance. To meet the market demand for the more mature high volume products, we also utilize the wafer manufacturing capacity of selected third party foundries. For assembly and test, we primarily rely upon our in-house facilities in China. In addition, we utilize subcontracting partners for industry standard packages. We believe our in-house packaging and testing capability provides us with a competitive advantage in proprietary packaging technology, product quality, cost and sales cycle time.

On March 29, 2016, we formed the JV Company with the Chongqing Funds, for the purpose of constructing and operating the Chongqing Fab in the LiangJiang New Area of Chongqing, China. The Chongqing Fab is being built in phases. As of December 1, 2021, we owned 50.9%, and the Chongqing Funds owned 49.1% of the equity interest in the JV Company. The JV Company was accounted under the provisions of the consolidation guidance since we had controlling financial interest until December 1, 2021.

Effective December 1, 2021, we entered into a share transfer agreement ("STA") with a third-party investor (the "Investor"), pursuant to which we sold to the Investor approximately 2.1% of outstanding equity interest held by us in the JV Company for an aggregate purchase price of RMB 108 million or approximately $16.9 million. The STA contained customary representations, warranties and covenants. The Transaction was closed on December 2, 2021. As a result of the Transaction, as of the Closing Date, our equity interest in the JV Company decreased from 50.9% to 48.8%. Also, our right to designate directors on the board of JV Company was reduced to three (3) out of seven (7) directors, from four (4) directors prior to the Transaction. As of December 2, 2021, we no longer have a controlling financial interest in the JV Company under generally accepted accounting principles. Loss of control is deemed to have occurred when, among other things, a parent company owns less than a majority of the outstanding common stock in the subsidiary, lacks a controlling financial interest in the subsidiary and, is unable to unilaterally control the subsidiary through other means such as having, or the ability to obtain or represent, a majority of the subsidiary's board of directors. All of these loss of control factors were present for us as of December 2, 2021. Accordingly, since December 2, 2021, we have deconsolidated the JV Company in our Consolidated Financial Statements and accounted for our investment in the JV Company using the equity method of accounting.

On December 24, 2021, we entered into a share transfer agreement with another third-party investor, pursuant to which we sold to this investor 1.1% of outstanding equity interest held by us in the JV Company for an aggregate purchase price of RMB 60 million or approximately $9.4 million based on the currency exchange rate as of December 24, 2021. In addition, on December 30, 2021, the JV Company adopted an employee equity incentive plan and issued an equity interest equivalent to 3.99% of the JV Company to exchange in cash. As a result, we owned 45.8% of the equity interest in the JV Company as of December 31, 2021.

On January 26, 2022, the JV Company completed a financing transaction pursuant to the Financing Agreement between the JV Company and certain New Investors. Under the Financing Agreement, the New Investors purchased newly issued equity interest of the JV Company for a total purchase price of RMB 509 million (or approximately $80 million based on the currency exchange rate as of January 26, 2022) (the "Investment"). Following the closing of the Investment, the percentage of outstanding JV Company equity interest beneficially owned by the Company was reduced to 42.2%.

We reduced our ownership of the JV Company to below 50% to increase the flexibility of the JV Company to raise capital to fund its future expansion. Following the Transaction and the successful ramp up to its Phase I target run rate in the September quarter of 2021, as planned, the JV Company commenced an effort to raise up to $200 million of additional capital, including an $80 million round that was completed on January 26, 2022 through private funding for its Phase II expansion. In addition to immediate private funding rounds, the JV Company is also contemplating an eventual listing on the Science and Technology Innovation Board, or STAR Market, of the Shanghai Stock Exchange. The Transaction assists the JV Company in meeting certain regulatory listing requirements. A potential STAR Market listing may take several years to consummate and there is no guarantee that such listing by the JV Company will be successful or will be completed in a timely manner, or at all. In addition, the JV Company will continue to provide us with significant level of foundry capacity to enable us to develop and manufacture our products. On July 12, 2022, the current shareholders of the JV Company entered into a shareholders contract, pursuant to which the JV Company provided us a monthly wafer production capacity guarantee, subject to future increase when the JV Company's production capacity reaches certain goal.

During the fiscal year ended June 30, 2022, we continued our diversification program by developing new silicon and packaging platforms to expand our serviceable available market, or SAM and offer higher performance products. Our metal-oxide-semiconductor field-effect transistors, or MOSFET, and power IC product portfolio expanded significantly. Our high performance products and deepened customer relationships with our OEM and ODM customers have contributed to the achievement of our record high revenue of $777.6 million for the fiscal year 2022, a 18.4% growth compared to the last fiscal year.

Impact of COVID-19 Pandemic to our Business

Our business operations have been impacted by the global COVID-19 pandemic and the resulting economic downturn. Numerous governmental jurisdictions, including the States of California, Oregon and Texas in the U.S. and countries throughout the Asia Pacific region have imposed various restrictions on commercial activities, resulting in business closures, work stoppages, labor shortage, disruptions to ports, vaccine mandates and other shipping infrastructure, border closures, thereby negatively impacting our customers, suppliers, distributors, employees, offices, and the entire semiconductor ecosystem.

As a result of the COVID-19 pandemic and changing consumer behaviors due to various government restrictions and the growing trend to provide remote-working options by employers, we have experienced shifting market trends, including an increasing demand in markets for notebooks, personal computing ("PC"), gaming devices and other products. While we have benefited from the increasing demand for PC related products, there is no guarantee that this trend will continue, and such increasing demand may discontinue or decline if government authorities relax or terminate COVID-19 related restrictions and consumer behaviors change in response to the reopening of certain economic activities. In an effort to protect the health and safety of our employees and to comply with various government and regulatory guidelines, we also took proactive actions to adopt policies and protocols at our locations around the world, including social distancing guidelines, vaccine and testing protocols.

Since the start of the second quarter of calendar year 2021, there have been increasing availability and administration of vaccines against COVID-19, as well as an easing of restrictions on social, business, travel, and government activities and functions, and a gradual resumption of economic activities and consumer spending in our industries. However, infection rates continued to fluctuate in various regions and new strains of the virus remain a risk, including a surge of COVID-19 cases and hospitalization due to the spread of Omicron variants in late 2021 and early 2022. During the first half of calendar year 2022, COVID-19 cases and hospitalization rate continued to decline and governments in various jurisdictions, including the U.S. and Europe, have lifted various restrictions and limitations on economic activities. At the same time, however, new variants of COVID-19 continued to emerge and contributed to recent rise of infection rates in various jurisdictions in which we operate, including China and U.S. Furthermore, we may be subject to the ongoing global impacts resulting from the pandemic, including disruption of the product supply chains, shortages of semiconductor components, and delays in shipments, product development, and product launches and rising inflation rates.

In April 2022, the operations of our two packaging and testing facilities in Shanghai, China were suspended due to a strict lockdown of the city imposed by the local government in response to surging COVID cases. Our facilities in Shanghai were required to shut down and production was halted beginning in early April. Transportation suspension in and out of Shanghai also interrupted the shipping of raw materials and finished parts to and from our facilities. We received permission to reopen our facilities partially in early May. We gradually ramped up production at these facilities in May and returned to normal operation in June 2022. The suspension of our Shanghai facilities, and the subsequent partial resumption of production, reduced our ability to complete orders from our customers in a timely manner, which adversely affected our revenue and results of operation for the three months ended June 30, 2022. We cannot guarantee that the Shanghai government will not impose similar restrictions and lockdown in the future, and any such restrictions and lockdown will adversely affect our operations and financial performance.

The full extent of the longer-term impact of the COVID-19 pandemic on our operational and financial performance is uncertain and will depend on many factors outside our control, including, without limitation, the timing, extent, trajectory and duration of the pandemic; the availability, distribution and effectiveness of vaccines; the spread of new variants of COVID-19; the continued and renewed imposition of protective public safety measures, including local and regional lockdown and quarantines; the disruption of global supply chain; and the impact of the pandemic on the global economy and demand for consumer products. Although we are unable to predict the full impact and duration of the COVID-19 pandemic on our business, we are actively managing our business operations and financial expenditures in response to continued uncertainty.

Other Factors affecting our performance

In addition to the COVID-19 pandemic and related events as described above, our performance is affected by several key factors, including the following:

The global, regional economic and PC market conditions: Because our products primarily serve consumer electronic applications, any significant change in global and regional economic conditions could materially affect our revenue and results of operations. A significant amount of our revenue is derived from sales of products in the PC markets, such as notebooks, motherboards and notebook battery packs, therefore a substantial decline or downturn in the PC market could have a material adverse effect on our revenue and results of operations. The PC markets have experienced a modest global decline in recent years due to continued growth of demand in tablets and smart phones, worldwide economic conditions and the industry inventory correction which had and may continue to have a material impact on the demand for our products. However, we recently have experienced a significant increase of demand in PC market due to the impact of the COVID-19 pandemic and resulting shift in market trend and consumer behaviors. We cannot predict whether and how long this trend will continue due to the uncertainty and unpredictability of COVID-19 pandemic. A decline of the PC market may have a negative impact on our revenue, factory utilization, gross margin, our ability to resell excess inventory, and other performance measures. We have executed and continue to execute strategies to diversify our product portfolio, penetrate other market segments, including the consumer, communications and industrial markets, and improve gross margins and profit by implementing cost control measures. While making efforts to reduce our reliance on the computing market, we continue to support our computing business and capitalize on the opportunities in this market with a more focused and competitive PC product strategy to gain market share.

Manufacturing costs and capacity availability: Our gross margin is affected by a number of factors including our manufacturing costs, utilization of our manufacturing facilities, the product mixes of our sales, pricing of wafers from third party foundries and pricing of semiconductor raw materials. Capacity utilization affects our gross margin because we have certain fixed costs at our Shanghai facilities and our Oregon Fab. If we are unable to utilize our manufacturing facilities at a desired level, our gross margin may be adversely affected. For example, in April 2022, the operations of our packaging and testing facilities in Shanghai, China were suspended due to a strict lockdown of the city imposed by the local government in response to surging COVID cases. The facilities were required to be shut down and production was halted since early April. Transportation suspension in and out of Shanghai also interrupted the shipping of raw materials and finished parts to and from our facilities. We received permission to reopen our facilities partially in early May. We gradually ramped up production at these facilities in May and returned to normal operation in June 2022. However, there is no guarantee that additional restrictions and lockdown will not be reimposed by the government, which is outside of our control, and any extension of the lockdown will continue to have a negative impact on our results of operation and financial condition. In addition, from time to time, we may experience wafer capacity constraints, particularly at third party foundries, that may prevent us from meeting fully the demand of our customers. For example, the recent global shortage of semiconductor manufacturing capacity has provided us with both challenges and opportunities in the market, and highlighted the importance of maintaining sufficient and independent in-house manufacturing capabilities to meet increasing customer demands. While we can mitigate these constraints by increasing and re-allocating capacity at our own fab, we may not be able to do so quickly or at sufficient level, which could adversely affect our financial conditions and results of operations. In addition, we recently commenced a plan to enhance the manufacturing capability and capacity of our Oregon Fab by investing in new equipment and expanding our factory facilities, which we expect will have a positive impact on our future new product development and revenue, particularly during the period of global shortage of capacity. The expansion is expected to be completed in the fiscal quarter ending March 31, 2023. We also rely substantially on the JV Company to provide foundry capacity to manufacture our products, therefore it is critical that we maintain continuous access to such capacity, which may not be available at sufficient level or at a pricing terms favorable to us because of lack of control over the JV Company’s operation. As a result of sales of our JV Company equity interests and issuance of additional equity interests by the JV Company to third-party investors in financing transactions, our equity interest in the JV Company was reduced to 42.2%, which reduced our control and influence over the JV Company. While we continue to maintain a business relationship with the JV Company to ensure uninterrupted supply of manufacturing capacity, and we are currently negotiating a foundry agreement for the JV Company to provide guarantee level of capacity, the JV Company may take actions or make decisions that adversely impact our ability to access required capacity, and our lack of control and influence may prevent us from eliminating or mitigating such risk.

Erosion and fluctuation of average selling price: Erosion of average selling prices of established products is typical in our industry. Consistent with this historical trend, we expect our average selling prices of existing products to decline in the future. However, in the normal course of business, we seek to offset the effect of declining average selling price by introducing new and higher value products, expanding existing products for new applications and new customers and reducing the manufacturing cost of existing products. These strategies may cause the average selling price of our products to fluctuate significantly from time to time, thereby affecting our financial performance and profitability.

Product introductions and customers' product requirements: Our success depends on our ability to introduce products on a timely basis that meet or are compatible with our customers' specifications and performance requirements. Both factors, timeliness of product introductions and conformance to customers' requirements, are equally important in securing design wins with our customers. As we accelerate the development of new technology platforms, we expect to increase the pace at which we introduce new products and seek and acquire design wins. If we were to fail to introduce new products on a timely basis that meet customers' specifications and performance requirements, particularly those products with major OEM customers, and continue to expand our serviceable markets, then we would lose market share and our financial performance would be adversely affected.

Distributor ordering patterns, customer demand and seasonality: Our distributors place purchase orders with us based on their forecasts of end customer demand, and this demand may vary significantly depending on the sales outlook and market and economic conditions of end customers. Because these forecasts may not be accurate, channel inventory held at our distributors may fluctuate significantly, which in turn may prompt distributors to make significant adjustments to their purchase orders placed with us. As a result, our revenue and operating results may fluctuate significantly from quarter to quarter. In addition, because our products are used in consumer electronics products, our revenue is subject to seasonality. Our sales seasonality is affected by numerous factors, including global and regional economic conditions as well as the PC market conditions, revenue generated from new products, changes in distributor ordering patterns in response to channel inventory adjustments and end customer demand for our products and fluctuations in consumer purchase patterns prior to major holiday seasons. In recent periods, broad fluctuations in the semiconductor markets and the global and regional economic conditions, in particular the decline of the PC market conditions, have had a more significant impact on our results of operations than seasonality. Furthermore, our revenue may be impacted by the level of demand from our major customers due to factors outside of our control. If these major customers experience significant decline in the demand of their products, encounter difficulties or defects in their products, or otherwise fail to execute their sales and marketing strategies successfully, it may adversely affect our revenue and results of operations.

Principal line items of statements of operations

The following describes the principal line items set forth in our consolidated statements of operations:

Revenue

We generate revenue primarily from the sale of power semiconductors, consisting of power discretes and power ICs. Historically, a majority of our revenue has been derived from power discrete products. Because our products typically have three-year to five-year life cycles, the rate of new product introduction is an important driver of revenue growth over time. We believe that expanding the breadth of our product portfolio is important to our business prospects, because it provides us with an opportunity to increase our total bill-of-materials within an electronic system and to address the power requirements of additional electronic systems. In addition, a small percentage of our total revenue is generated by providing packaging and testing services to third parties through one of our subsidiaries.

Our product revenue is reported net of the effect of the estimated stock rotation returns and price adjustments that we expect to provide to our distributors. Stock rotation returns are governed by contract and are limited to a specified percentage of the monetary value of products purchased by the distributor during a specified period. At our discretion or upon our direct negotiations with the original design manufacturers ("ODMs") or original equipment manufacturers ("OEMs"), we may elect to grant special pricing that is below the prices at which we sold our products to the distributors. In these situations, we will grant price adjustments to the distributors reflecting such special pricing. We estimate the price adjustments for inventory at the distributors based on factors such as distributor inventory levels, pre-approved future distributor selling prices, distributor margins and demand for our products.

Cost of goods sold

Our cost of goods sold primarily consists of costs associated with semiconductor wafers, packaging and testing, personnel, including share-based compensation expense, overhead attributable to manufacturing, operations and procurement, and costs associated with yield improvements, capacity utilization, warranty and valuation of inventories. As the volume of sales increases, we expect cost of goods sold to increase. While our utilization rates cannot be immune to the market conditions, our goal is to make them less vulnerable to market fluctuations. We believe our market diversification strategy and product growth will drive higher volume of manufacturing which will improve our factory utilization rates and gross margin in the long run.

Operating expenses

Our operating expenses consist of research and development, and selling, general and administrative expenses. We expect our operating expenses as a percentage of revenue to fluctuate from period to period as we continue to exercise cost control measures in response to the declining PC market as well as align our operating expenses to the revenue level.

Research and development expenses. Our research and development expenses consist primarily of salaries, bonuses, benefits, share-based compensation expense, expenses associated with new product prototypes, travel expenses, fees for engineering services provided by outside contractors and consultants, amortization of software and design tools, depreciation of equipment and overhead costs. We continue to invest in developing new technologies and products utilizing our own fabrication and packaging facilities as it is critical to our long-term success. We also evaluate appropriate investment levels and stay focused on new product introductions to improve our competitiveness. We expect that our research and development expenses will fluctuate from time to time.

Selling, general and administrative expenses. Our selling, general and administrative expenses consist primarily of salaries, bonuses, benefits, share-based compensation expense, product promotion costs, occupancy costs, travel expenses, expenses related to sales and marketing activities, amortization of software, depreciation of equipment, maintenance costs and other expenses for general and administrative functions as well as costs for outside professional services, including legal, audit and accounting services. We expect our selling, general and administrative expenses to fluctuate in the near future as we continue to exercise cost control measures.

Income tax expense

We are subject to income taxes in various jurisdictions. Significant judgment and estimates are required in determining our worldwide income tax expense. The calculation of tax liabilities involves dealing with uncertainties in the application of complex tax regulations of different jurisdictions globally. We establish accruals for potential liabilities and contingencies based on a more likely than not threshold to the recognition and de-recognition of uncertain tax positions. If the recognition threshold is met, the applicable accounting guidance permits us to recognize a tax benefit measured at the largest amount of tax benefit that is more likely than not to be realized upon settlement with a taxing authority. If the actual tax outcome of such exposures is different from the amounts that were initially recorded, the differences will impact the income tax and deferred tax provisions in the period in which such determination is made. Changes in the location of taxable income (loss) could result in significant changes in our income tax expense.

We record a valuation allowance against deferred tax assets if it is more likely than not that a portion of the deferred tax assets will not be realized, based on historical profitability and our estimate of future taxable income in a particular jurisdiction. Our judgments regarding future taxable income may change due to changes in market conditions, changes in tax laws, tax planning strategies or other factors. If our assumptions and consequently our estimates change in the future, the deferred tax assets may increase or decrease, resulting in corresponding changes in income tax expense. Our effective tax rate is highly dependent upon the geographic distribution of our worldwide profits or losses, the tax laws and regulations in each geographical region where we have operations, the availability of tax credits and carry-forwards and the effectiveness of our tax planning strategies.

U.S. Tax Cuts and Jobs Act, Enacted December 22, 2017

On December 22, 2017, the United States enacted tax reform legislation through the Tax Cuts and Jobs Act (“the Tax Act”), which significantly changes the existing U.S. tax laws, including, but not limited to, (1) a reduction in the corporate tax rate from 35% to 21%, (2) a shift from a worldwide tax system to a territorial system, (3) eliminating the corporate alternative minimum tax (AMT) and changing how existing AMT credits can be realized, (4) bonus depreciation that will allow for full expensing of qualified property, (5) creating a new limitation on deductible interest expense and (6) changing rules related to uses and limitations of net operating loss carryforwards created in tax years beginning after December 31, 2017.

The Company is not currently subject to the Base Erosion and Anti-Abuse (BEAT) tax, which is a tax imposed on certain entities who make payments to their non U.S. affiliates, where such payments reduce the U.S. tax base . The BEAT tax is imposed at a rate of 10% on Adjusted Taxable Income, excluding certain payments to foreign related entities. It is an incremental tax over and above the corporate income tax and is recorded as a period cost. It is possible that this tax could be applicable in future periods, which would cause an increase to the effective tax rate and cash taxes.

U.S. Coronavirus Aid, Relief and Economic Security Act" ("CARES Act"), Enacted March 27, 2020

On March 27, 2020, the United States enacted the CARES Act, which made the changes to existing U.S. tax laws, including, but not limited to, (1) allowing U.S. federal net operating losses originated in the 2018, 2019 or 2020 tax years to be carried back five years to recover taxes paid based upon taxable income in the prior five years, (2) eliminated the 80% of taxable income limitation on net operating losses for the 2018, 2019 and 2020 tax years (the 80% limitation will be reinstated for tax years after 2020), (3) accelerating the refund of prior year alternative minimum tax credits, (4) modifying the bonus depreciation for qualified improvement property and (5) modifying the limitation on deductible interest expense.

As a result of the ability to carryback net operating losses from the June 2018 and June 2019 years to the June 2015 to June 2017 tax years, net operating losses which were previously tax-effected using the current 21% U.S. federal tax rate were revalued to the U.S. tax rates in effect for the June 2015 to June 2017 tax years due to the ability of receiving tax refunds for the taxes paid in these years. Accordingly, we reported a discrete tax benefit of $1.1 million in the third quarter of fiscal year 2020 related to the re-measurement of the net operating losses that could be realized via the new net operating loss carryback provisions.

"U.S. Consolidated Appropriations Act, 2021" ("CAA 2021"), Enacted December 27, 2020

On December 27, 2020, the United States enacted the Consolidated Appropriations Act, 2021, which made changes to existing U.S. tax laws. There was no material impact of the tax law changes included in the Consolidated Appropriations Act, 2021 to the Company.

"The American Rescue Plan Act of, 2021", Enacted March 11, 2021

On March 11, 2021, the United States enacted the American Rescue Plan Act of 2021, which made changes to existing U.S. tax laws. There was no material impact of the tax law changes included in the American Rescue Plan Act of 2021 to the Company.

"The Chip and Science Act of 2022", Enacted August 2, 2022

In August 2022 the U.S. enacted the Chip and Science Act of 2022 (the Chips Act). The Chips Act provides incentives to semiconductor chip manufacturers in the United States, including providing manufacturing investment credits of 25% for investments in semiconductor manufacturing property placed in service after December 31, 2022, for which construction begins before January 1, 2027. Property investments qualify for the 25% credit if, among other requirements, the property is integral to the operation of an advanced manufacturing facility, defined as having a primary purpose of manufacturing semiconductors or semiconductor manufacturing equipment. Currently, we are evaluating the impact of the Chips Act to us.

Operating results

The following tables set forth our results of operations and as a percentage of revenue for the fiscal years ended June 30, 2022, 2021 and 2020. Our historical results of operations are not necessarily indicative of the results for any future period.

	Year Ended June 30,					
	2022	2021	2020	2022	2021	2020
	(in thousands)			(% of revenue)		
Revenue	$ 777,552	$ 656,902	$ 464,909	100.0 %	100.0 %	100.0 %
Cost of goods sold (1)	508,996	452,359	362,178	65.5 %	68.9 %	77.9 %
Gross profit	268,556	204,543	102,731	34.5 %	31.1 %	22.1 %
Operating expenses:						
Research and development (1)	71,259	62,953	51,252	9.2 %	9.6 %	11.0 %
Selling, general and administrative (1)	95,259	77,514	64,816	12.3 %	11.8 %	13.9 %
Impairment of privately-held investment	—	—	600	— %	— %	0.1 %
Total operating expenses	166,518	140,467	116,668	21.5 %	21.4 %	25.0 %
Operating income (loss)	102,038	64,076	(13,937)	13.0 %	9.7 %	(2.9)%
Other income (loss), net	999	2,456	(1,229)	0.1 %	0.4 %	(0.3)%
Interest expenses, net	(3,920)	(6,308)	(2,743)	(0.5)%	(1.0)%	(0.6)%
Gain on deconsolidation of the JV Company	399,093	—	—	51.3 %	— %	— %
Loss on changes of equity interest in the JV Company, net	(3,140)	—	—	(0.4)%	— %	— %
Net income (loss) before income taxes	495,070	60,224	(17,909)	63.5 %	9.1 %	(3.8)%
Income tax expense	39,258	3,935	348	5.0 %	0.6 %	0.1 %
Net income (loss) before loss from equity method investment	455,812	56,289	(18,257)	58.5 %	8.5 %	(3.9)%
Equity method investment loss from equity investee	2,629	—	—	0.3 %	— %	— %
Net income (loss)	453,183	56,289	(18,257)	58.2 %	8.5 %	(3.9)%
Net income (loss) attributable to noncontrolling interest	20	(1,827)	(11,661)	0.0 %	(0.3)%	(2.5)%
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	$ 453,163	$ 58,116	$ (6,596)	58.2 %	8.8 %	(1.4)%

(1) Includes share-based compensation expense as follows:

	Year Ended June 30,					
	2022	2021	2020	2022	2021	2020
	(in thousands)			(% of revenue)		
Cost of goods sold	$ 5,125	$ 1,756	$ 1,530	0.7 %	0.3 %	0.3 %
Research and development	7,049	5,352	2,895	0.9 %	0.8 %	0.6 %
Selling, general and administrative	19,150	8,216	6,029	2.5 %	1.3 %	1.3 %
	$ 31,324	$ 15,324	$ 10,454	4.1 %	2.4 %	2.2 %

Revenue

The following is a summary of revenue by product type:

	Year Ended June 30,			Change			
	2022	2021	2020	2022		2021	
		(in thousands)		(in thousands)	(in percentage)	(in thousands)	(in percentage)
Power discrete	$ 545,135	$ 482,718	$ 391,941	$ 62,417	12.9 %	$ 90,777	23.2 %
Power IC	220,882	161,726	66,360	59,156	36.6 %	95,366	143.7 %
Packaging and testing services	11,535	12,458	6,608	(923)	(7.4)%	5,850	88.5 %
	$ 777,552	$ 656,902	$ 464,909	$ 120,650	18.4 %	$ 191,993	41.3 %

Fiscal 2022 vs 2021

Total revenue was $777.6 million for fiscal year 2022, an increase of $120.7 million, or 18.4%, as compared to $656.9 million for fiscal year 2021. The increase was primarily due to an increase of $62.4 million in sales of power discrete products and an increase of $59.2 million in sales of power IC products. The increase in power discrete and power IC product sales was primarily due to a 21.0% increase in average selling price as compared to last fiscal year due to a shift in product mix, partially offset by a 2.1% decrease in unit shipments. The decrease in revenue of packaging and testing services for the fiscal year 2022 as compared to last fiscal year was primarily due to decreased demand. During fiscal year 2022, we accelerated the development of new technology platforms which allowed us to introduce 49 medium and high voltage MOSFET products, targeting primarily the industrial markets and communication marketing, and 7 module products primarily for the consumer markets, as well as 14 low voltage MOSFET products primarily for the computing and communication markets. In addition, we introduced 69 Power IC new products for computing applications, communication and consumer markets.

Fiscal 2021 vs 2020

Total revenue was $656.9 million for fiscal year 2021, an increase of $192.0 million, or 41.3%, as compared to $464.9 million for fiscal year 2020. The increase was primarily due to an increase of $90.8 million in sales of power discrete products and an increase of $95.4 million in sales of power IC products. The increase in power discrete and power IC product sales was primarily due to a 23.0% increase in unit shipments and a 14.5% increase in average selling price due to a shift in product mix as compared to last fiscal year. The increase in revenue of packaging and testing services for the fiscal year 2021 as compared to last fiscal year was primarily due to increased demand.

Cost of goods sold and gross profit

	Year Ended June 30,			Change			
	2022	2021	2020	2022		2021	
		(in thousands)		(in thousands)	(in percentage)	(in thousands)	(in percentage)
Cost of goods sold	$ 508,996	$ 452,359	$ 362,178	$ 56,637	12.5 %	$ 90,181	24.9 %
Percentage of revenue	65.5 %	68.9 %	77.9 %				
Gross profit	$ 268,556	$ 204,543	$ 102,731	$ 64,013	31.3 %	$ 101,812	99.1 %
Percentage of revenue	34.5 %	31.1 %	22.1 %				

Fiscal 2022 vs 2021

Cost of goods sold was $509.0 million for fiscal year 2022, an increase of $56.6 million, or 12.5%, as compared to $452.4 million for fiscal year 2021. The increase was primarily due to 18.4% increase in revenue. Gross margin increased by 3.4 percentage points to 34.5% for the fiscal year 2022, as compared to 31.1% for the fiscal year 2021. The increase in gross margin was primarily due to better product mix during the fiscal year ended June 30, 2022. We expect our gross margin to continue to fluctuate in the future as a result of variations in our product mix, semiconductor wafer and raw material pricing, manufacturing labor cost and general economic and PC market conditions.

Fiscal 2021 vs 2020

Cost of goods sold was $452.4 million for fiscal year 2021, an increase of $90.2 million, or 24.9%, as compared to $362.2 million for fiscal year 2020. The increase was primarily due to 41.3% increase in revenue. Gross margin increased by 9.0 percentage points to 31.1% for the fiscal year 2021, as compared to 22.1% for the fiscal year 2020. Our JV Company continued its ramp during the fiscal year 2021, which resulted in an increase in the capacity utilization and contributed to the increase in gross margin.

Research and development expenses

	Year Ended June 30,			Change			
	2022	2021	2020	2022		2021	
		(in thousands)		(in thousands)	(in percentage)	(in thousands)	(in percentage)
Research and development	$ 71,259	$ 62,953	$ 51,252	$ 8,306	13.2 %	$ 11,701	22.8 %

Fiscal 2022 vs 2021

Research and development expenses were $71.3 million for fiscal year 2022, an increase of $8.3 million, or 13.2%, as compared to $63.0 million for fiscal year 2021. The increase was primarily attributable to a $6.8 million increase in employee compensation and benefit expense mainly due to higher bonus accrual, increased headcount and annual merit increase, a $1.7 million increase in share-based compensation expense due to an increase in stock awards granted, a $0.2 million increase in depreciation expenses, and a $0.2 million increase in professional fees, partially offset by a $0.8 million decrease in product prototyping engineering expense as a result of decreased engineering activities. We continue to evaluate and invest resources in developing new technologies and products utilizing our own fabrication and packaging facilities. We believe the investment in research and development are important to meet our strategic objectives.

Fiscal 2021 vs 2020

Research and development expenses were $63.0 million for fiscal year 2021, an increase of $11.7 million, or 22.8%, as compared to $51.3 million for fiscal year 2020. The increase was primarily attributable to a $4.0 million increase in employee compensation and benefit expense mainly due to higher bonus accrual, a $4.2 million increase in product prototyping engineering expense as a result of increased engineering activities, a $2.5 million increase in share-based compensation expense due to higher stock awards price, and a $0.5 million increase in facility expenses as a result of higher office rental expenses and higher utility costs.

Selling, general and administrative expenses

	Year Ended June 30,			Change			
	2022	2021	2020	2022		2021	
		(in thousands)		(in thousands)	(in percentage)	(in thousands)	(in percentage)
Selling, general and administrative	$ 95,259	$ 77,514	$ 64,816	$ 17,745	22.9 %	$ 12,698	19.6 %

Fiscal 2022 vs 2021

Selling, general and administrative expenses were $95.3 million for fiscal year 2022, an increase of $17.7 million, or 22.9%, as compared to $77.5 million for fiscal year 2021. The increase was primarily attributable to a $8.6 million increase in employee compensation and benefits expenses mainly due to increased headcount, annual merit increase, higher bonus expenses and increased employee and business insurance expenses, as well as $10.9 million increase in share-based compensation expense due to increase in stock award granted, partially offset by a $2.2 million decrease in legal expense related to the government investigation.

Fiscal 2021 vs 2020

Selling, general and administrative expenses were $77.5 million for fiscal year 2021, an increase of $12.7 million, or 19.6%, as compared to $64.8 million for fiscal year 2020. The increase was primarily attributable to a $13.2 million increase in employee compensation and benefits expenses, mainly due to increased headcount, higher bonus expenses and increased employee insurance expenses, as well as $2.2 million increase in share-based compensation expense due to higher stock rewards price. The increase was partially offset by a $1.9 million decrease in legal expense related to the government investigation, and a $0.9 million decrease in business travel expenses as a result of the COVID-19 pandemic.

Impairment of privately-held investment

	Year Ended June 30,			Change			
	2022	2021	2020	2022		2021	
		(in thousands)		(in thousands)	(in percentage)	(in thousands)	(in percentage)
Impairment of privately-held investment	$ —	$ —	$ 600	$ —	— %	$ (600)	100.0 %

During the fiscal year 2020, we recorded an other-than-temporary impairment charge for our investment of $0.6 million in a privately-held start-up company. As of June 30, 2022 and 2021, we have remaining a privately-held investment of $0.1 million.

Other income (loss), net

	Year Ended June 30,			Change			
	2022	2021	2020	2022		2021	
		(in thousands)		(in thousands)	(in percentage)	(in thousands)	(in percentage)
Other income (loss), net	$ 999	$ 2,456	$ (1,229)	$ (1,457)	(59.3)%	$ 3,685	(299.8)%

Other income (loss), net decreased by $1.5 million in fiscal year 2022 as compared to the last fiscal year primarily due to increase in foreign currency exchange loss as a result of the depreciation of RMB against USD.

Other income (loss), net increased by $3.7 million in the fiscal year 2021 as compared to the fiscal year 2020 was primarily due to a decrease in foreign currency exchange loss as a result of the appreciation of RMB against USD.

Interest expense, net

	Year Ended June 30,			Change			
	2022	2021	2020	2022		2021	
		(in thousands)		(in thousands)	(in percentage)	(in thousands)	(in percentage)
Interest expense, net	$ (3,920)	$ (6,308)	$ (2,743)	$ 2,388	(37.9)%	$ (3,565)	130.0 %

Interest expense was primarily related to bank borrowings. Interest expense decreased by $2.4 million in fiscal year 2022 as compared to the prior fiscal year primarily because of deconsolidation of the JV Company in December 2021. Interest expense increased by $3.6 million in fiscal year 2021 as compared to the fiscal year 2020 primarily due to an increase in bank borrowings as well as to a reduction in the interest refund from the Chinese government to the JV Company.

Gain on deconsolidation of the JV Company and Gain/loss on changes of equity interest in the JV Company

Effective December 1, 2021, we entered into the STA with the Investor, pursuant to which we sold to the Investor approximately 2.1% of outstanding equity interest held by us in the JV Company for an aggregate purchase price of RMB 108 million or approximately $16.9 million. The STA contained customary representations, warranties and covenants. The Transaction was closed on December 2, 2021. As a result of the Transaction, as of the Closing Date, our equity interest in the JV Company decreased from 50.9% to 48.8%. Also, our right to designate directors on the board of JV Company was reduced to three (3) out of seven (7) directors, from four (4) directors prior to the Transaction. We no longer have a controlling financial interest in the JV Company under generally accepted accounting principles. Loss of control is deemed to have occurred when, among other things, a parent company owns less than a majority of the outstanding common stock in the subsidiary, lacks a controlling financial interest in the subsidiary and, is unable to unilaterally control the subsidiary through other means such as having, or the ability to obtain, a majority of the subsidiary's board of directors. All of these loss of control factors were present for us as of December 2, 2021. Accordingly, since December 2, 2021, AOS has accounted for its investment in the JV Company using the equity method of accounting. On December 24, 2021, we entered into a share transfer agreement with another third-party investor, pursuant to which we sold to this investor 1.1% of outstanding equity interest held by us in the JV Company for an aggregate purchase price of RMB 60 million or approximately $9.4 million. In addition, the JV Company adopted an employee equity incentive plan and issued an equity interest equivalent to 3.99% of the JV Company to exchange in cash. As a result, the Company owned 45.8% of the equity interest in the JV Company as of December 31, 2021. On January 26, 2022, the JV Company completed a financing transaction pursuant to the Financing Agreement between the JV Company and certain New Investors. Under the Financing Agreement, the New Investors purchased newly issued equity interest of the JV Company for a total purchase price of RMB 509 million (or approximately $80 million based on the currency exchange rate as of January 26, 2022). Following the closing of the Investment, the percentage of outstanding JV Company equity interest beneficially owned by us was reduced to 42.2%.

During the fiscal year ended June 30, 2022, we recorded a gain of $399.1 million on deconsolidation of the JV Company, and a $3.1 million of loss on changes of equity interest in the JV Company.

We account for our investment in the JV Company as an equity method investment and report our equity in earnings or loss of the JV Company on a three-month lag due to an inability to timely obtain financial information of the JV Company. For the fiscal year ended June 30, 2022 using lag reporting, we recorded $2.6 million of its equity in loss of the JV Company.

Income tax expense

	Year Ended June 30,			Change			
	2022	2021	2020	2022		2021	
		(in thousands)		(in thousands)	(in percentage)	(in thousands)	(in percentage)
Income tax expense	$ 39,258	$ 3,935	$ 348	$ 35,323	897.7 %	$ 3,587	1,030.7 %

Fiscal 2022 vs 2021

Income tax expense for fiscal years 2022 and 2021 was $39.3 million and $3.9 million, respectively. Income tax expense increased by $35.3 million, or 897.7% in fiscal year 2022 as compared to fiscal year 2021. The income tax expense of $39.3 million for the year ended June 30, 2022 included a $33.5 million discrete tax expense related to the Company's $396.0 million of income from the sale of equity interest in a joint venture and the related deconsolidation gain as the Company changed from the consolidation method of accounting to the equity method of accounting. In addition, we recorded a tax benefit of $0.4 million from other discrete income tax items. The income tax expense of $3.9 million for the year ended June 30, 2021 included a $0.3 million discrete tax benefit. Excluding the discrete income tax items ($396.0 million of income from the sale of equity interest in a joint venture and the related deconsolidation gain as well as other discrete items), the effective tax rate for the years ended June 30, 2022 and 2021 was 6.3% and 7.1%, respectively. The changes in the tax expense and effective tax rate between the periods resulted primarily from the Company reporting pretax book income of $495.0 million ($99.0 million of pretax book income plus the $396.0 million of income from the sale of equity interest in a joint venture and the related deconsolidation gain) for the year ended June 30, 2022 as compared to a pretax book income of $60.2 million for the year ended June 30, 2021 as well as changes in the mix of earnings in various geographic jurisdictions between the current year and the same period of last year.

Fiscal 2021 vs 2020

Income tax expense for fiscal years 2021 and 2020 was $3.9 million and $0.3 million, respectively. Income tax expense increased by $3.6 million in fiscal year 2021 as compared to fiscal year 2020, primarily due to an approximate $80 million increase in pretax book income in fiscal 2021 (in which we reported a pretax book income of $60.2 million) vs. fiscal 2020 (in which we reported pretax book loss of $17.9 million). Excluding discrete income tax items, the effective tax rate for the current fiscal year was 7.1%, compared to (9.6%) for the prior fiscal year. The changes in the effective tax rate and tax expense between the fiscal years resulted primarily from changes in the mix of earnings in various geographic jurisdictions between the current fiscal year and prior fiscal year.

Liquidity and Capital Resources

Our principal need for liquidity and capital resources is to maintain sufficient working capital to support our operations and to invest adequate capital expenditures to grow our business. To date, we finance our operations and capital expenditures primarily through funds generated from operations and borrowings under our term loans, financing lease and other debt agreements.

On August 18, 2021, Jireh Semiconductor Incorporated ("Jireh") entered into a term loan agreement with a financial institution (the "Bank") in an amount up to $45.0 million for the purpose of expanding and upgrading the Company's fabrication facility located in Oregon. The obligation under the loan agreement is secured by substantially all assets of Jireh and guaranteed by the Company. The agreement has a 5.5 year term and matures on February 16, 2027. Jireh is required to make consecutive quarterly payments of principal and interest. The loan accrues interest based on adjusted London Interbank Offered Rate ("LIBOR") plus the applicable margin based on the outstanding balance of the loan. This agreement contains customary restrictive covenants and includes certain financial covenants that the Company is required to maintain. Jireh drew down $45.0 million on February 16, 2022. As of June 30, 2022, Jireh was in compliance with these covenants and the outstanding balance of this loan was $45.0 million.

In October 2019, the Company' subsidiary in China entered into a line of credit facility with Bank of Communications Limited in China. This line of credit matured on February 14, 2021 and was based on the China Base Rate multiplied by 1.05, or 4.99% on October 31, 2019. The purpose of the credit facility is to provide short-term borrowings. The Company could borrow up to approximately RMB 60.0 million or $8.5 million based on the currency exchange rate between the RMB and the U.S. Dollar on October 31, 2019. In September 2021, this line of credit was renewed with maximum borrowings up to RMB 140.0 million with the same terms and a maturity date of September 18, 2022. During the three months ended December 31, 2021, the Company borrowed RMB 11.0 million, or $1.6 million, at an interest rate of 3.85% per annum, with principal due on November 18, 2022. As of June 30, 2022, there was $1.6 million outstanding balance under the loan.

On November 16, 2018, the Company' subsidiary in China entered into a line of credit facility with Industrial and Commercial Bank of China. The purpose of the credit facility was to provide short-term borrowings. The Company could borrow up to approximately RMB 72.0 million or $10.3 million based on currency exchange rate between RMB and U.S. Dollar on November 16, 2018. The RMB 72.0 million consisted of RMB 27.0 million for trade borrowings with a maturity date of December 31, 2021, and RMB 45.0 million for working capital borrowings or trade borrowings with a maturity date of September 13, 2022. During the three months ended December 31, 2021, the Company borrowed RMB 5.0 million, or $0.8 million, at an interest rate of 3.7% per annum, with principal due on September 12, 2022. As of June 30, 2022, the total outstanding balance of this loan was $0.5 million.

In September 2021, Jireh Semiconductor Incorporated ("Jireh") entered into a financing arrangement agreement with a company ("Lender") for the lease and purchase of a machinery equipment manufactured by a supplier. The total purchase price of this machinery equipment was euro 12.0 million, or $12.8 million based on the currency exchange rate between the euro and U.S. Dollar on June 30, 2022. In April 2021, Jireh made a down payment of euro 6.0 million, representing 50% of the total purchase price of the equipment, to the supplier. In June 2022, the equipment was delivered to Jireh after Lender paid 40% of the total purchase price, for euro 4.8 million, to the supplier on behalf of Jireh. Based on the terms of the agreement between Jireh and Lender, after the installation and configuration of the equipment for its intended use, Lender will make the remaining 10% payment for the total purchase price and reimburse Jireh for the down payment made to the supplier. By that time, the title of the equipment will be transferred to Lender. This agreement has a 5 years term, after which Jireh has the option to purchase the equipment for $1. Jireh is required to make a monthly payment of interest at an implied interest rate of 4.75% per annum to Lessor. Principal payment is required to be paid monthly after the completion of the title transfer. The financing arrangement is secured by this machinery equipment which had the carrying amount of $12.8 million as of June 30, 2022. As of June 30, 2022, the outstanding balance of this debt financing was $5.0 million.

On August 9, 2019, one of the Company' wholly-owned subsidiaries (the "Borrower") entered into a factoring agreement with the Hongkong and Shanghai Banking Corporation Limited ("HSBC"), whereby the Borrower assigns certain of its accounts receivable with recourse. This factoring agreement allowed the Borrower to borrow up to 70% of the net amount of its eligible accounts receivable of the Borrower with a maximum amount of $30.0 million. The interest rate was based on one month London Interbank Offered Rate ("LIBOR") plus 1.75% per annum. The Company was the guarantor for this agreement. The Company is accounting for this transaction as a secured borrowing under the Transfers and Servicing of Financial Assets guidance. In addition, any cash held in the restricted bank account controlled by HSBC had a legal right of offset against the borrowing. This agreement, with certain financial covenants required, had no expiration date. On August 11, 2021, the Borrower signed an agreement with HSBC to decrease the borrowing maximum amount to $8.0 million with certain financial covenants required. Other terms remain the same. The Borrower was in compliance with these covenants as of June 30, 2022. As of June 30, 2022, there was no outstanding balance and the Company had unused credit of approximately $8.0 million.

On May 1, 2018, Jireh entered into a loan agreement with the Bank that provided a term loan in an amount of $17.8 million. The obligation under the loan agreement is secured by certain real estate assets of Jireh and guaranteed by the Company. The loan has a five-year term and matures on June 1, 2023. Beginning June 1, 2018, Jireh made consecutive monthly payments of principal and interest to the Bank. The outstanding principal shall accrue interest at a fixed rate of 5.04% per annum on the basis of a 360-day year. The loan agreement contains customary restrictive covenants and includes certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios. In August 2021, Jireh signed an amendment of this loan with the Bank to modify the financial covenants requirement to align with the new term loan agreement entered into on August 18, 2021 discussed above. The amendment was accounted for as a debt modification and no gain or loss was recognized. The Company was in compliance with these covenants as of June 30, 2022. As of June 30, 2022, the outstanding balance of the term loan was $14.2 million.

On August 15, 2017, Jireh entered into a credit agreement with the Bank that provided a term loan in an amount up to $30.0 million for the purpose of purchasing certain equipment for the fabrication facility located in Oregon. The obligation under the credit agreement is secured by substantially all assets of Jireh and guaranteed by the Company. The credit agreement has a five-year term and matures on August 15, 2022. In January 2018 and July 2018, Jireh drew down on the loan in the amount of $13.2 million and $16.7 million, respectively. Beginning in October 2018, Jireh is required to pay to the Bank on each payment date, the outstanding principal amount of the loan in monthly installments. The loan accrues interest based on an adjusted LIBOR as defined in the credit agreement, plus specified applicable margin in the range of 1.75% to 2.25%, based on the outstanding balance of the loan. The credit agreement contains customary restrictive covenants and includes certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios and fixed charge coverage ratio. In August 2021, Jireh signed an amendment of this loan with the Bank to modify the financial covenants requirement to align with the new term loan agreement entered into on August 18, 2021, discussed above. The amendment was accounted for as a debt modification and no gain or loss was recognized. The Company was in compliance with these covenants as of June 30, 2022. As of June 30, 2022, the outstanding balance of the term loan was $1.9 million.

In September 2017, the board of directors approved a repurchase program (the “Repurchase Program”) that allowed us to repurchase our common shares from the open market pursuant to a pre-established Rule 10b5-1 trading plan or through privately negotiated transactions up to an aggregate of $30.0 million. The amount and timing of any repurchases under the Repurchase Program depend on a number of factors, including but not limited to, the trading price, volume, availability of our common shares and the amount of available cash reserve. Shares repurchased under this program are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. During fiscal year 2022, 2021 and 2020, we did not repurchase any shares pursuant to the repurchase program. As of June 30, 2022, the Company had repurchased an aggregate of 6,784,648 shares for a total cost of $67.3 million, at an average price of $9.92 per share, excluding fees and related expenses, since inception of the program. No repurchased shares have been retired. Of the 6,784,648 repurchased shares, 167,395 shares with a weighted average repurchase price of $10.06 per share, were reissued at an average price of $5.00 per share for option exercises and vested restricted stock units (“RSU”). As of June 30, 2022, $13.4 million remain available under the share repurchase program.

The Chinese government imposes certain currency exchange controls on cash transfers out of China. Regulations in China permit foreign owned entities to freely convert the Renminbi into foreign currency for transactions that fall under the “current account,” which includes trade related receipts and payments, interests, and dividend payments. Accordingly, subject to the review and verification of the underlying transaction documents and supporting documents by the account banks in China, our Chinese subsidiaries may use Renminbi to purchase foreign exchange currency for settlement of such “current account” transactions without the pre-approval from China's State Administration of Foreign Exchange (SAFE) or its provincial branch. Pursuant to applicable regulations, foreign-invested enterprises in China may pay dividends only out of their accumulated profits, if any, determined in accordance with Chinese accounting standards and regulations. In calculating accumulated profits, foreign-invested enterprises in China are required to allocate at least 10% of their profits each year, if any, to fund the equity reserve account unless the reserve has reached 50% of the registered capital of the enterprises. While SAFE approval is not statutorily required for eligible dividend payments to the foreign parent, in practice, before making the dividend payment, the account bank may seek SAFE’s opinion with respect to a dividend payment if the payment involves a relatively large amount, which may delay the dividend payment depending on the then overall status of cross-border payments and receipts of China.

Transactions that involve conversion of Renminbi into foreign currency in relation to foreign direct investments and provision of debt financings in China are classified as “capital account” transactions. Examples of “capital account” transactions include repatriations of investments by foreign owners and repayments of loan principal to foreign lenders. "Capital account" transactions require prior approval from SAFE or its provincial branch or an account bank delegated by SAFE to convert a remittance into a foreign currency, such as U.S. dollars, and transmit the foreign currency outside of China. As a result of this and other restrictions under PRC laws and regulations, our China subsidiaries are restricted in their ability to transfer a portion of their net assets to us, and such restriction may adversely affect our ability to generate sufficient liquidity to fund our operations or other expenditures. As of June 30, 2022 and 2021, such restricted portion amounted to approximately

$92.4 million and $209.9 million, or 10.8% and 50.4%, of our total consolidated net assets attributable to the Company, respectively. The decrease of restricted net assets was primarily from deconsolidation of the JV Company in China.

We believe that our current cash and cash equivalents and cash flows from operations will be sufficient to meet our anticipated cash needs, including working capital and capital expenditures, for at least the next twelve months. In addition, we recently commenced an investment plan to expand the manufacturing capacity and upgrade the operational capabilities of our Oregon Fab. We intend to fund the costs by a combination of cash reserve, bank loans and equipment leases. In the long-term, we may require additional capital due to changing business conditions or other future developments, including any investments or acquisitions we may decide to pursue. If our cash is insufficient to meet our needs, we may seek to raise capital through equity or debt financing. The sale of additional equity securities could result in dilution to our shareholders. The incurrence of indebtedness would result in increased debt service obligations and may include operating and financial covenants that would restrict our operations. We cannot be certain that any financing will be available in the amounts we need or on terms acceptable to us, if at all.

Cash, cash equivalents and restricted cash

As of June 30, 2022 and 2021, we had $314.7 million and $204.8 million of cash, cash equivalents and restricted cash, respectively. Our cash, cash equivalents and restricted cash primarily consisted of cash on hand, restricted cash and short-term bank deposits with original maturities of three months or less. Of the $314.7 million and $204.8 million cash and cash equivalents, $212.6 million and $134.6 million, respectively, were deposited with financial institutions outside the United States.

The following table shows our cash flows from operating, investing and financing activities for the periods indicated:

	Year Ended June 30,		
	2022	2021	2020
		(in thousands)	
Net cash provided by operating activities	$ 218,865	$ 128,744	$ 62,315
Net cash used in investing activities	(130,822)	(72,539)	(60,849)
Net cash provided by (used in) financing activities	21,854	(18,991)	37,651
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(59)	4,895	(708)
Net increase in cash, cash equivalents and restricted cash	$ 109,838	$ 42,109	$ 38,409

Cash flows from operating activities

Net cash provided by operating activities of $218.9 million for fiscal year 2022 resulted primarily from net income of $453.2 million, non-cash charges of $287.6 million and net change in assets and liabilities providing net cash of $53.3 million. The non-cash charges of $287.6 million included depreciation and amortization expenses of $42.9 million, share-based compensation expense of $31.3 million, gain on deconsoidation of the JV Company of $399.1 million, loss on changes of equity interest in the JV Company, net of $3.1 million, deferred income tax on deconsolidation and changes of equity interest in the JV Company of $30.0 million, loss on equity investment of $2.6 million, and net deferred income taxes of $1.6 million. The net change in assets and liabilities providing net cash of $53.3 million was primarily due to $76.4 million increase in accrued and other liabilities, income taxes payable on deconsolidation and changes of equity interest in the JV company of $3.5 million, other payable on equity investee of $48.2 million, and $23.8 million increase in accounts payable primarily due to timing of payment, partially offset by $30.1 million increase in accounts receivable due to timing of billings and collection of payments, $57.4 million increase in inventories, $9.4 million increase in other current and long-term assets primarily due to decrease in advance payments to suppliers, and $1.7 million decrease in income taxes payable.

Net cash provided by operating activities of $128.7 million for fiscal year 2021 resulted primarily from net income of $56.3 million, non-cash charges of $70.0 million and net change in assets and liabilities providing net cash of $2.5 million. The non-cash charges of $70.0 million included depreciation and amortization expenses of $52.7 million, share-based compensation expense of $15.3 million, loss on disposal of property and equipment of $0.4 million, and net deferred income taxes of $1.6 million. The net change in assets and liabilities providing net cash of $2.5 million was primarily due to $48.5 million increase in accrued and other liabilities and $1.7 million increase in income taxes payable, partially offset by $22.5 million increase in accounts receivable due to timing of billings and collection of payments, $18.8 million increase in inventories, $5.8 million increase in other current and long-term assets primarily due to decrease in advance payments to suppliers, and $0.5 million decrease in accounts payable primarily due to timing of payments.

Net cash provided by operating activities of $62.3 million for fiscal year 2020 resulted primarily from net loss of $18.3 million, non-cash charges of $56.1 million and net change in assets and liabilities providing net cash of $24.4 million. The non-cash charges of $56.1 million included depreciation and amortization expenses of $45.1 million, share-based compensation expense of $10.5 million, impairment of our investment in a privately-held start-up company of $0.6 million, gain on disposal of property and equipment of $0.1 million, and net deferred income taxes of $0.1 million. The net change in assets and liabilities providing net cash of $24.4 million was primarily due to $27.3 million decrease in other current and long-term assets primarily due to increase in advance payments to suppliers, $11.0 million decrease in accounts receivable due to timing of billings and collection of payments, and $11.0 million increase in accrued and other liabilities, partially offset by $22.8 million increase in inventories, $1.8 million decrease in accounts payable primarily due to timing of payments, and $0.3 million decrease in income taxes payable.

Cash flows from investing activities

Net cash used in investing activities of $130.8 million for the fiscal year 2022 was primarily attributable to $138.0 million purchases of property and equipment, and $20.7 million deconsolidation of cash and cash equivalents of the JV Company, partially offset by $1.4 million government grant related to equipment in the JV Company, $26.3 million proceeds from sale of equity interest in the JV Company and $0.1 million proceeds from sale of property and equipment.

Net cash used in investing activities of $72.5 million for the fiscal year 2021 was primarily attributable to $72.7 million purchases of property and equipment, which was partially offset by $0.1 million government grant related to equipment in the JV Company.

Net cash used in investing activities of $60.8 million for the fiscal year 2020 was primarily attributable to $62.4 million purchases of property and equipment, which was partially offset by $1.3 million government grant related to equipment in the JV Company and $0.3 million of proceeds from sale of property and equipment.

Cash flows from financing activities

Net cash used in financing activities of $21.9 million for the fiscal year 2022 was primarily attributable to $64.3 million of proceeds from borrowings and $6.1 million of proceeds from exercises of share options and issuance of shares under the ESPP, partially offset by $8.6 million in common shares acquired to settle withholding tax related to vesting of restricted stock units, $4.2 million in payments of capital lease obligations, and $35.7 million in repayments of borrowings.

Net cash used in financing activities of $19.0 million for the fiscal year 2021 was primarily attributable to $6.9 million in common shares acquired to settle withholding tax related to vesting of restricted stock units, $16.5 million in payments of capital lease obligations, and $66.6 million in repayments of borrowings, partially offset by $65.9 million of proceeds from borrowings and $5.1 million of proceeds from exercises of share options and issuance of shares under the ESPP.

Net cash provided by financing activities of $37.7 million for the fiscal year 2020 was primarily attributable to $96.2 million of proceeds from borrowings, and $3.4 million of proceeds from exercises of share options and issuance of shares under the ESPP, partially offset by $1.5 million in common shares acquired to settle withholding tax related to vesting of restricted stock units, $11.0 million in payments of capital lease obligations, and $49.4 million in repayments of borrowings.

Contractual Obligations

Our contractual obligations as of June 30, 2022 are as follows:

	Payments Due by Period				
	Total	Less than 1 year	1-3 years	3-5years	More than 5 years
			(in thousands)		
Bank borrowings	$ 68,218	$ 25,638	$ 19,951	$ 22,395	$ 234
Finance leases	5,318	993	2,166	2,159	—
Operating leases	29,141	5,206	7,275	6,323	10,337
Capital commitments with respect to property and equipment	63,438	63,438	—	—	—
Purchase commitments with respect to inventories and others	89,863	89,863	—	—	—
Total contractual obligations	$ 255,978	$ 185,138	$ 29,392	$ 30,877	$ 10,571

As of June 30, 2022, we had recorded liabilities of $2.0 million for uncertain tax positions and $0.2 million for potential interest and penalties, which are not included in the above table because we are unable to reliably estimate the amount of payments in individual years that would be made in connection with these uncertain tax positions.

Commitments

See Note 15 of the Notes to the Consolidated Financial Statements contained in this Annual Report on Form 10-K for a description of commitments.

Off-Balance Sheet Arrangements

As of June 30, 2022, we had no material off-balance sheet arrangements as defined in Item 303(a)(4)(ii) of Regulation S-K.

Critical Accounting Policies and Estimates

The preparation of our consolidated financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses. To the extent there are material differences between these estimates and actual results, our consolidated financial statements will be affected. On an ongoing basis, we evaluate the estimates, judgments and assumptions including those related to stock rotation returns, price adjustments, allowance for doubtful accounts, valuation of inventories, warranty accrual, income taxes, leases, equity method investment, share-based compensation, recoverability of and useful lives for property, plant and equipment and intangible assets, as well as economic implications of the COVID-19 pandemic.

Revenue recognition

We determine revenue recognition through the following steps: (1) identification of the contract with a customer; (2) identification of the performance obligations in the contract; (3) determination of the transaction price; (4) allocation of the transaction price to the performance obligations in the contract; and (5) recognition of revenue when, or as, a performance obligation is satisfied. We recognize revenue at a point in time when product is shipped to the customer, net of estimated stock rotation returns and price adjustments to certain distributors. We present revenue net of sales taxes and any similar assessments. Our standard payment terms range from 30 to 60 days.

We sell our products primarily to distributors, who in turn sell our products globally to various end customers. Our revenue is net of the effect of the variable consideration relating to estimated stock rotation returns and price adjustments that we expect to provide to certain distributors. Stock rotation returns are governed by contract and are limited to a specified percentage of the monetary value of the products purchased by distributors during a specified period. We estimate provision for stock rotation returns based on historical returns and individual distributor agreements. We also provide special pricing to certain distributors primarily based on volume, to encourage resale of our products. We estimate the expected price adjustments at the time the revenue is recognized based on distributor inventory levels, pre-approved future distributor selling prices, distributor margins and demand for our products. If actual stock rotation returns or price adjustments differ from our estimates, adjustments may be recorded in the period when such actual information is known. Allowance for price adjustments is recorded against accounts receivable and provision for stock rotation is recorded in accrued liabilities on the consolidated balance sheets.

Our performance obligations relate to contracts with a duration of less than one year. We elected to apply the practical expedient provided in ASC 606, "Revenue from Contracts with Customers". Therefore, we are not required to disclose the aggregate amount of transaction price allocated to performance obligations that are unsatisfied or partially unsatisfied at the end of the reporting period.

We recognize the incremental direct costs of obtaining a contract, which consist of sales commissions, when control over the products they relate to transfers to the customer. Applying the practical expedient, we recognize commissions as expense when incurred, as the amortization period of the commission asset we would have otherwise recognized is less than one year.

Packaging and testing services revenue is recognized at a point in time upon shipment of serviced products to the customer.

Equity method investment

We use the equity method of accounting when we have the ability to exercise significant influence, but not control, as determined in accordance with general accepted accounting principles, over the operating and financial policies of the investee. Effective December 2, 2021, we reduced our equity interest in the JV Company, which resulted in deconsolidation of our investment in the JV Company. As a result, beginning December 2, 2021, we record our investment under equity method of accounting. Due to difficulties in obtaining accurate financial information from the JV Company in a timely manner, we record our share of earnings or losses of such affiliate on a one quarter lag. Therefore, our share of losses of the JV Company for the period from December 2, 2021 to March 31, 2022 was recorded in our Consolidated Statement of Operations for the fiscal year ended June 30, 2022. We recognize and disclose intervening events at the JV Company in the lag period that could materially affect our consolidated financial statements.

We record our interest in the net earnings of our equity method investees, along with adjustments for unrealized profits or losses on intra-entity transactions and amortization of basis differences, within earnings or loss from equity interests in the Consolidated Statements of Income. Profits or losses related to intra-entity sales with its equity method investees are eliminated until realized by the investor and investee. Basis differences represent differences between the cost of the investment and the underlying equity in net assets of the investment and are generally amortized over the lives of the related assets that gave rise to them. Equity method goodwill is not amortized or tested for impairment; instead the equity method investment is tested for impairment. We review for impairment whenever factors indicate that the carrying amount of the investment might not be recoverable. In such a case, the decrease in value is recognized in the period the impairment occurs in the Condensed Consolidated Statements of Income.

Valuation of inventories

We carry inventories at the lower of cost (determined on a first-in, first-out basis) or net realizable value. Cost primarily consists of semiconductor wafers and raw materials, labor, depreciation expenses and other manufacturing expenses and overhead, and packaging and testing fees paid to third parties if subcontractors are used. Valuation of inventories is based on our periodic review of inventory quantities on hand as compared with our sales forecasts, historical usage, aging of inventories, production yield levels and current product selling prices. If actual market conditions are less favorable than those forecasted by us, additional future inventory write-downs may be required that could adversely affect our operating results. Adjustments to inventory, once established are not reversed until the related inventory has been sold or scrapped. If actual market conditions are more favorable than expected and the products that have previously been written down are sold, our gross margin would be favorably impacted.

Accounting for income taxes

We are subject to income taxes in a number of jurisdictions. We must make certain estimates and judgments in determining income tax expense for financial statement purposes. These estimates and judgments occur in the calculation of tax credits, benefits and deductions, and in the calculation of certain tax assets and liabilities which arise from differences in the timing of recognition of revenue and expense for tax and financial statement purposes, as well as interest and penalties related to uncertain tax positions. There are many transactions and calculations for which the ultimate tax determination is uncertain during the ordinary course of business. We establish accruals for certain tax contingencies based on estimates of whether additional taxes may be due. While the final tax outcome of these matters may differ from the amounts that were initially recorded, such differences will impact the income tax and deferred tax provisions in the period in which such determination is made. As a result, significant changes to these estimates may result in an increase or decrease to our tax provision in a subsequent period.

Significant management judgment is also required in determining whether deferred tax assets will be realized in full or in part. When it is more likely than not that all or some portion of specific deferred tax assets such as net operating losses or foreign tax credit carryforwards will not be realized, a valuation allowance must be established for the amount of the deferred tax assets that cannot be realized. We consider all available positive and negative evidence on a jurisdiction-by-jurisdiction basis when assessing whether it is more likely than not that deferred tax assets are recoverable. We consider evidence such as our past operating results, the existence of cumulative losses in recent years and our forecast of future taxable income. We will maintain a partial valuation allowance equal to the state research and development credit carryforwards until sufficient positive evidence exists to support reversal of the valuation allowance.

We have not provided for withholding taxes on the undistributed earnings of our foreign subsidiaries because we intend to reinvest such earnings indefinitely. However, we have recorded a deferred tax liability of $29.6 million at June 30, 2022 related to our investment in the JV Company. As of June 30, 2022, the cumulative amount of undistributed earnings of our foreign subsidiaries considered permanently reinvested was $314.7 million. The determination of the unrecognized deferred tax liability on these earnings is not practicable. Should we decide to remit this income to the Bermuda parent company in a future period, our provision for income taxes may increase materially in that period.

The Financial Accounting Standards Board ("FASB") has issued guidance which clarifies the accounting for income taxes by prescribing a minimum probability threshold that a tax position must meet before a financial statement benefit is recognized. The minimum threshold is defined as a tax position that is more likely than not to be sustained upon examination by the applicable taxing authority, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The tax benefit to be recognized is measured as the largest amount of benefit that is greater than fifty percent likely to be realized upon ultimate settlement. The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax law and regulations in a multitude of jurisdictions. Although the guidance on the accounting for uncertainty in income taxes prescribes the use of a recognition and measurement model, the determination of whether an uncertain tax position has met those thresholds will continue to require significant judgment by management. If the ultimate resolution of tax uncertainties is different from what is currently estimated, a material impact on income tax expense could result.

Our provision for income taxes is subject to volatility and could be adversely impacted by changes in earnings or tax laws and regulations in various jurisdictions. We are subject to the continuous examination of our income tax returns by the

Internal Revenue Service and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these continuous examinations will not have an adverse effect on our operating results and financial condition. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the impact of changes to reserves, as well as the related net interest and penalties.

Share-based compensation expense

We maintain an equity-settled, share-based compensation plan to grant restricted share units and stock options. We recognize share-based compensation expense based on the estimated fair value of the awards, using the accelerated attribution method. The fair value of restricted share units is based on the fair value of the Company's common share on the date of grant. For restricted stock awards subject to market conditions, the fair value of each restricted stock award is estimated at the date of grant using the Monte-Carlo pricing model. Share-based compensation expense is significant to the consolidated financial statements and is calculated using our best estimates, which involve inherent uncertainties and the application of management's judgment. The Black-Scholes option valuation model requires the input of subjective assumptions, including the expected term and stock price volatility. In addition, judgment is also required in estimating the number of stock-based awards that are expected to be forfeited. Forfeitures are estimated based on historical experience at the time of grant. Changes in estimated forfeitures are recognized in the period of change and impact the amount of stock compensation expenses to be recognized in future periods, which could be material if actual results differ significantly from estimates.

Recently Issued Accounting Pronouncements

See Note 1 of the Notes to the consolidated financial statements under Item 15 in this Annual Report on Form 10-K for a full description of recent accounting pronouncements, including the expected dates of adoption and estimated effects on results of operations and financial condition.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Foreign currency risk

We and our principal subsidiaries use U.S. dollars as our functional currency because most of the transactions are conducted and settled in U.S. dollars. All of our revenue and a significant portion of our operating expenses are denominated in U.S. dollars. The functional currency for our in-house packaging and testing facilities in China is U.S. dollars and a significant portion of our capital expenditures are denominated in U.S. dollars. However, foreign currencies are required to fund our overseas operations, primarily in Taiwan and China. Operating expenses of overseas operations are denominated in their respective local currencies. In order to minimize exposure to foreign currencies, we maintained cash and cash equivalent balances in foreign currencies, including Chinese Yuan ("RMB") as operating funds for our foreign operating expenses. For our subsidiaries which use the local currency as the functional currency, including the JV Company, the results and financial position are translated into U.S. dollar using exchange rates at balance sheet dates for assets and liabilities and using average exchange rates for income and expenses items. The resulting translation differences are presented as a separate component of accumulated other comprehensive income (loss) and noncontrolling interest in the consolidated statements of equity. Our management believes that our exposure to foreign currency translation risk is not significant based on a 10% sensitivity analysis in foreign currencies due to the fact that the net assets denominated in foreign currencies pertaining to foreign operations, principally in Taiwan and China, are not significant to our consolidated net assets.

Interest rate risk

Our interest-bearing assets comprise mainly interest-bearing short-term bank balances. We manage our interest rate risk by placing such balances in instruments with various short-term maturities. Borrowings expose us to interest rate risk. Borrowings are drawn down after due consideration of market conditions and expectation of future interest rate movements. As of June 30, 2022, we had $68.0 million outstanding under our loan and $4.7 million outstanding under our capital leases, which were subject to fluctuations in interest rates. For the year ended June 30, 2022, a hypothetical 10% increase in the interest rate could result in $0.2 million additional annual interest expense. The hypothetical assumptions made above will be different from what actually occurs in the future. Furthermore, the computations do not anticipate actions that may be taken by our management should the hypothetical market changes actually occur over time. As a result, actual impacts on our results of operations in the future will differ from those quantified above.

Commodity Price Risk

We are subject to risk from fluctuating market prices of certain commodity raw materials, particularly gold, that are used in our manufacturing process and incorporated into our end products. Supplies for such commodities may from time-to-time become restricted, or general market factors and conditions may affect the pricing of such commodities. Over the past few years, the price of gold increased significantly and certain of our supply chain partners assess surcharges to compensate for the rising commodity prices. We have been converting some of our products to use copper wires instead of gold wires. Our results of operations may be materially and adversely affected if we have difficulty obtaining these raw materials, the quality of available raw materials deteriorates, or there are significant price changes for these raw materials. For periods in which the prices of these raw materials are rising, we may be unable to pass on the increased cost to our customers which would result in decreased margins for the products in which they are used and could have a material adverse effect on our net earnings. We also may need to record losses for adverse purchase commitments for these materials in periods of declining prices. We do not enter into formal hedging arrangements to mitigate against commodity risk. We estimate that a 10% increase or decrease in the costs of raw materials subject to commodity price risk, such as gold, would decrease or increase our current year's net earnings by $0.7 million, assuming that such changes in our costs have no impact on the selling prices of our products and that we have no pending commitments to purchase metals at fixed prices.

Item 8. Financial Statements and Supplementary Data

See Part IV, Item 15 “Exhibits and Financial Statement Schedules” for our consolidated financial statements and the notes and schedules thereto filed as part of this annual report.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, (the “Exchange Act”)), as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures as of June 30, 2022 have been designed and are functioning effectively to provide reasonable assurance that the information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’ rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Management’s Annual Report on Internal Control over Financial Reporting

Our management, including our Chief Executive Officer and Chief Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our financial statements for external purposes in accordance with generally accepted accounting principles, and includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (2) provide reasonable assurance that transactions are recorded to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are made only in accordance with authorizations of our management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

Our management conducted an assessment of the effectiveness of our internal control over financial reporting based on the criteria set forth in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), as amended from time to time. Based on the assessment, our management has concluded that our internal control over financial reporting was effective as of June 30, 2022 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. GAAP.

The effectiveness of the Company’s internal control over financial reporting as of June 30, 2022 has been audited by BDO, USA LLP, an independent registered public accounting firm, as stated in their report, included on the following page.

Limitation on the Effectiveness of Controls

While our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance that their respective objectives will be met, we do not expect that our disclosure controls and procedures or our internal control over financial reporting are or will be capable of preventing or detecting all errors and all fraud. Any control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended June 30, 2022 that have materially affected or are reasonably likely to materially affect, our internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Shareholders and Board of Directors
Alpha and Omega Semiconductor Limited
Sunnyvale, California

Opinion on Internal Control over Financial Reporting

We have audited Alpha and Omega Semiconductor Limited (a Bermuda corporation) (the "Company's") internal control over financial reporting as of June 30, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (the "COSO criteria"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of June 30, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of the Company as of June 30, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), equity, and cash flows for each of the three years in the period ended June 30, 2022, and the related notes and schedule and our report dated September 19, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Item 9A, Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit of internal control over financial reporting in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ BDO USA, LLP

San Jose, California

September 19, 2022

Item 9B. Other Information

None

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not Applicable.

PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K because we intend to file our definitive proxy statement for our next annual general meeting of shareholders, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended (the "2022 Proxy Statement"), no later than 120 days after the end of fiscal year 2022, and certain information to be included in the 2022 Proxy Statement is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item concerning our directors, executive officers, Section 16 compliance and corporate governance matters is contained in part under the caption "Business - Executive Officers" in Part I of this report, and the remainder is incorporated by reference to the information set forth in the sections titled "Election of Directors" and "Delinquent Section 16(a) Reports" in the 2022 Proxy Statement.

Item 11. Executive Compensation

The information required by this item regarding executive compensation is incorporated by reference from the information set forth under the captions "Compensation of Non-Employee Directors" and "Executive Compensation," in the 2022 Proxy Statement.

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

The information required by this item regarding security ownership of certain beneficial owners and management is incorporated by reference to the information set forth in the section titled "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information" in the 2022 Proxy Statement.

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

The information required by this item regarding related party transactions and director independence is incorporated by reference from the information set forth under the captions "Board of Directors and Committees of the Board" and "Related Party Transactions" in the 2022 Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information required by this item regarding principal accountant fees and services is incorporated by reference from the information set forth under the caption "Principal Accounting Fees and Services" in the 2022 Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this annual report:

(1) Consolidated Financial Statements. The index to the consolidated financial statements is below.

(2) Financial Statement Schedules.

(b) Exhibits

The exhibits listed on the accompanying Index to Exhibits in Item 15(b) below are filed as part of, or hereby incorporated by reference into, this Annual Report on Form 10-K.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Shareholders and Board of Directors
Alpha and Omega Semiconductor, Limited
Sunnyvale, California

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Alpha and Omega Semiconductor Limited (the "Company") as of June 30, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), equity, and cash flows for each of the three years in the period ended June 30, 2022, and the related notes and schedule (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at June 30, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended June 30, 2022**,** in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of June 30, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") and our report dated September 19, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits 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. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Valuation of Inventories

As described in Note 1 to the consolidated financial statements, the Company's consolidated inventories balance, which is stated at lower of cost (determined on a first-in, first-out basis) or net realizable value, was $158.0 million as of June 30, 2022. The valuation of inventories is made based on the Company's periodic review of inventory quantities on hand as compared with sales forecasts, historical usage, aging of inventories, production yield levels and current product selling prices.

We identified the valuation of inventories as a critical audit matter due to the significant judgment and estimates required by Management. Determining whether a decline in value has occurred requires Management's complex judgments related to sales forecasts based on historical sales, demand and expected future orders. Auditing these judgments is especially challenging and involved subjective auditor judgment due to fluctuations in sales trends and evolving customer demands.

The primary procedures we performed to address this critical audit matter included:

- Testing the design and operating effectiveness of automated application controls relating to the inputs used in the analysis.
- Evaluating the completeness and accuracy of data used in the determination of the valuation of inventories by testing the completeness of the inventories analyzed, the inputs used in the analysis, and recalculating the estimated valuation of inventories.
- Analyzing the reasonableness of the methodology Management uses to estimate the valuation of inventories by evaluating quantitative and qualitative factors including excess units on hand based on ending inventory quantities compared to forecasted shipment quantities.
- Evaluating the reasonableness of Management's assumptions related to future demand by (i) performing retrospective review of the Company’s prior year estimates to actual results, and (ii) evaluating the reasonableness of sales forecasts by comparing to current backlog and historical sales data used in the analysis.

Accounting for Equity Method Investment

As described in Notes 1 and 2 to the consolidated financial statements, on December 2, 2021, the Company sold 2.1% of its ownership interest in the JV Company to a third party for approximately $16.9 million contemporaneously with a change in governance of the JV Company that reduced the Company’s Board of Directors representation from four to three seats. Management evaluated the sale and determined that the JV Company was not a variable interest entity and that the Company no longer held voting control, resulting in the deconsolidation of the JV Company from the consolidated financial statements and recognition of a gain on the transaction in the amount of $399.1 million. Subsequent to the deconsolidation, the Company had significant influence and ownership requiring the application of equity method accounting for its remaining ownership interest.

We identified the accounting for the sale of the ownership interest and the accounting for the remaining ownership interest and the related disclosures as a critical audit matter. Identifying and applying complex generally accepted accounting principles, specifically the application of the variable interest model, to the fact pattern of the sale and the remaining ownership interest require significant management judgment. Auditing these elements involved especially challenging auditor judgment due to the nature and extent of audit effort required to address these matters, including the extent of specialized skills or knowledge needed.

The primary procedures we performed to address the critical audit matter included:

- Analyzing applicable agreements and evaluating the applicable accounting standards relevant to the fact pattern of the sale, specifically focusing on management’s evaluation of whether its remaining ownership interest and board representation were determinative of control over the JV Company pursuant to the variable interest model.
- Utilizing personnel with specialized skill and knowledge to assist in evaluating management’s technical accounting analysis relating to application of the variable interest model to the fact pattern of the sale.

Fair Value Determination of Basis Difference in Equity Method Investment

As described in Notes 1 and 2 to the consolidated financial statements, the Company deconsolidated the JV Company subsequent to the sale of the 2.1% equity interest in the JV Company. Management was required to determine the basis difference in the retained ownership interest in the JV Company as of December 2, 2021, as a significant component of accounting for the retained interest in the JV Company pursuant to the equity method.

We identified the determination of the difference between the carrying value of the investment in the JV Company and the Company’s underlying equity in the net assets of the JV Company as a critical audit matter. As part of determining this basis difference, management applied significant judgment in determining the appropriate valuation methodology and the unobservable inputs used in calculating the fair value of intellectual property owned by the JV Company, including projected revenues, discount factor, terminal factor, present value factor and tax amortization benefit. Auditing this element involved especially challenging auditor judgment due to the nature and extent of audit effort required to address these matters, including the extent of specialized skill or knowledge needed.

The primary procedures we performed to address the critical audit matter included:

- Assessing the reasonableness of the forecasts of future revenue by evaluating historical inputs and challenging the revenue growth rate.
- Utilizing personnel with specialized knowledge and skills in valuation to perform procedures to assist in (i) evaluating the valuation methodology used and (ii) assessing the reasonableness of the discount factor, terminal factor, present value factor and tax amortization benefit incorporated in the valuation model.

/s/ BDO USA, LLP

We have served as the Company's auditor since 2018.

San Jose, California

September 19, 2022

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED BALANCE SHEETS
(in thousands, except par value per share)

	June 30, 2022	June 30, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 314,352	$ 202,412
Restricted cash	299	233
Accounts receivable, net	65,681	35,789
Inventories	158,040	154,293
Other current assets	11,220	14,595
Total current assets	549,592	407,322
Property, plant and equipment, net	318,666	436,977
Operating lease right-of-use assets, net	23,674	34,660
Intangible assets, net	10,050	13,410
Equity method investment	378,378	—
Deferred income tax assets	592	5,167
Restricted cash - long-term	—	2,168
Other long-term assets	17,677	18,869
Total assets	$ 1,298,629	$ 918,573
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 87,377	$ 80,699
Accrued liabilities	116,893	69,494
Payable related to equity investee, net	28,989	—
Income taxes payable	4,248	2,604
Short-term debt	25,563	58,030
Finance lease liabilities	802	16,724
Operating lease liabilities	3,850	5,679
Total current liabilities	267,722	233,230
Long-term debt	42,486	77,990
Income taxes payable - long-term	2,158	1,319
Deferred income tax liabilities	28,757	2,448
Finance lease liabilities - long-term	3,932	12,698
Operating lease liabilities - long-term	20,878	30,440
Other long-term liabilities	78,603	44,123
Total liabilities	444,536	402,248
Commitments and contingencies (Note 15)		
Equity:		
Preferred shares, par value $0.002 per share:		
Authorized: 10,000 shares; issued and outstanding: none at June 30, 2022 and 2021	—	—
Common shares, par value $0.002 per share:		
Authorized: 100,000 shares; issued and outstanding: 33,988 shares and 27,371 shares, respectively at June 30, 2022 and 32,975 shares and 26,350 shares, respectively at June 30, 2021	68	66
Treasury shares at cost; 6,617 shares at June 30, 2022 and 6,625 shares at June 30, 2021	(66,000)	(66,064)
Additional paid-in capital	288,951	259,993
Accumulated other comprehensive income	1,080	2,315
Retained earnings	629,994	176,895
Total Alpha and Omega Semiconductor Limited shareholders' equity	854,093	373,205
Noncontrolling interest	—	143,120
Total equity	854,093	516,325
Total liabilities and equity	$ 1,298,629	$ 918,573

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

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Year Ended June 30,		
	2022	2021	2020
Revenue	$ 777,552	$ 656,902	$ 464,909
Cost of goods sold	508,996	452,359	362,178
Gross profit	268,556	204,543	102,731
Operating expenses:			
Research and development	71,259	62,953	51,252
Selling, general and administrative	95,259	77,514	64,816
Impairment of privately-held investment	—	—	600
Total operating expenses	166,518	140,467	116,668
Operating income (loss)	102,038	64,076	(13,937)
Other income (loss), net	999	2,456	(1,229)
Interest expenses, net	(3,920)	(6,308)	(2,743)
Gain on deconsolidation of the JV Company	399,093	—	—
Loss on changes of equity interest in the JV Company, net	(3,140)	—	—
Net income (loss) before income taxes	495,070	60,224	(17,909)
Income tax expense	39,258	3,935	348
Net income (loss) before loss from equity method investment	455,812	56,289	(18,257)
Equity method investment loss from equity investee	2,629	—	—
Net income (loss)	453,183	56,289	(18,257)
Net income (loss) attributable to noncontrolling interest	20	(1,827)	(11,661)
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	$ 453,163	$ 58,116	$ (6,596)
Net income (loss) per common share attributable to Alpha and Omega Semiconductor Limited			
Basic	$ 16.93	$ 2.25	$ (0.27)
Diluted	$ 16.07	$ 2.13	$ (0.27)
Weighted average number of common share attributable to Alpha and Omega Semiconductor Limited used to compute net income (loss) per share:			
Basic	26,764	25,786	24,840
Diluted	28,203	27,272	24,840

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

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in thousands)

	Year ended June 30,		
	2022	2021	2020
Net income (loss) including noncontrolling interest	$ 453,183	$ 56,289	$ (18,257)
Other comprehensive income (loss), net of tax			
Foreign currency translation adjustment	1,307	14,190	(4,839)
Cumulative translation adjustment removal due to deconsolidation of the JV Company	(3,642)	—	—
Comprehensive income (loss)	450,848	70,479	(23,096)
Less: Noncontrolling interest	(1,080)	4,921	(14,066)
Comprehensive income (loss) attributable to Alpha and Omega Semiconductor Limited	$ 451,928	$ 65,558	$ (9,030)

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

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF EQUITY
(in thousands)

	Preferred Shares		Common Shares		Treasury Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (loss)	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
	Shares	Amount	Shares	Amount	Shares	Amount						
Balance, June 30, 2019	—	$ —	31,163	$ 62	(6,646)	$ (66,240)	$ 234,410	$ (2,693)	$ 125,485	$ 291,024	$ 152,265	$ 443,289
Exercise of common stock options and release of RSUs	—	—	562	1	—	—	24	—	—	25		25
Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	—	—	—	7	56	—	—	(56)	—	—	—
Withholding tax on restricted stock units	—	—	(181)	—	—	—	(1,509)	—	—	(1,509)	—	(1,509)
Issuance of shares under Employee Stock Purchase Plan	—	—	400	1	—	—	3,324	—	—	3,325	—	3,325
Share-based compensation expense	—	—	—	—	—	—	9,854	—	—	9,854	—	9,854
Net loss including noncontrolling interest	—	—	—	—	—	—	—	—	(6,596)	(6,596)	(11,661)	(18,257)
Foreign currency translation adjustment	—	—	—	—	—	—	—	(2,434)	—	(2,434)	(2,405)	(4,839)
Balance, June 30, 2020	—	—	31,944	64	(6,639)	(66,184)	246,103	(5,127)	118,833	293,689	138,199	431,888
Exercise of common stock options and release of RSUs	—	—	857	1	—	—	1,698	—	—	1,699	—	1,699
Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	—	—	—	14	120	—	—	(54)	66	—	66
Withholding tax on restricted stock units	—	—	(225)	—	—	—	(6,924)	—	—	(6,924)	—	(6,924)
Issuance of shares under Employee Stock Purchase Plan	—	—	399	1	—	—	3,326	—	—	3,327	—	3,327
Share-based compensation expense	—	—	—	—	—	—	12,190	—	—	12,190	—	12,190
Restricted stock units settlement in connection with service	—	—	—	—	—	—	3,600	—	—	3,600	—	3,600
Net income (loss) including noncontrolling interest	—	—	—	—	—	—	—	—	58,116	58,116	(1,827)	56,289
Foreign currency translation adjustment	—	—	—	—	—	—	—	7,442	—	7,442	6,748	14,190
Balance, June 30, 2021	—	—	32,975	66	(6,625)	(66,064)	259,993	2,315	176,895	373,205	143,120	516,325
Exercise of common stock options and release of RSUs	—	—	652	1	—	—	897	—	—	898	—	898
Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	—	—	—	8	64	—	—	(64)	—	—	—
Withholding tax on restricted stock units	—	—	(183)	—	—	—	(8,641)	—	—	(8,641)	—	(8,641)
Issuance of shares under Employee Stock Purchase Plan	—	—	544	1	—	—	5,244	—	—	5,245	—	5,245
Share-based compensation expense	—	—	—	—	—	—	31,058	—	—	31,058	—	31,058
Restricted stock units settlement in connection with service	—	—	—	—	—	—	400	—	—	400	—	400
Net income (loss) including noncontrolling interest through December 1, 2021	—	—	—	—	—	—	—	—	453,163	453,163	20	453,183
Foreign currency translation adjustment	—	—	—	—	—	—	—	558	—	558	749	1,307
Deconsolidation of noncontrolling interest	—	—	—	—	—	—	—	(1,793)	—	(1,793)	(143,889)	(145,682)
Balance, June 30, 2022	—	$ —	33,988	$ 68	(6,617)	$ (66,000)	$ 288,951	$ 1,080	$ 629,994	$ 854,093	$ —	$ 854,093

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

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended June 30,		
	2022	**2021**	**2020**
Cash flows from operating activities			
Net income (loss) including noncontrolling interest	$ 453,183	$ 56,289	$ (18,257)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Gain on deconsolidation of the JV Company	(399,093)	—	—
Loss on changes of equity interest in the JV Company, net	3,140	—	—
Deferred income tax on deconsolidation and changes of equity interest in the JV Company	29,973	—	—
Depreciation and amortization	42,851	52,685	45,090
Loss on equity investment	2,629	—	—
Share-based compensation expense	31,324	15,324	10,454
Deferred income taxes, net	1,592	1,551	85
(Gain) loss on disposal of property and equipment	18	426	(102)
Impairment of privately-held investment	—	—	600
Changes in assets and liabilities:			
Accounts receivable	(30,085)	(22,517)	11,024
Inventories	(57,416)	(18,765)	(22,793)
Other current and long-term assets	(9,408)	(5,843)	27,306
Payable related to equity investee, net	48,192	—	—
Accounts payable	23,755	(528)	(1,777)
Income taxes payable	(1,687)	1,660	(270)
Income taxes payable on deconsolidation and changes of equity interest in the JV Company	3,490	—	—
Accrued and other liabilities	76,407	48,462	10,955
Net cash provided by operating activities	218,865	128,744	62,315
Cash flows from investing activities			
Proceeds from sale of equity interest in the JV Company	26,347	—	—
Deconsolidation of cash and cash equivalents of the JV Company	(20,734)	—	—
Purchases of property and equipment	(138,014)	(72,700)	(62,398)
Proceeds from sale of property and equipment	135	42	295
Government grant related to equipment	1,444	119	1,254
Net cash used in investing activities	(130,822)	(72,539)	(60,849)
Cash flows from financing activities			
Withholding tax on restricted stock units	(8,641)	(6,924)	(1,509)
Proceeds from exercise of stock options and ESPP	6,143	5,092	3,350
Proceeds from borrowings	64,276	65,876	96,232
Repayments of borrowings	(35,748)	(66,584)	(49,394)
Principal payments on capital leases	(4,176)	(16,451)	(11,028)
Net cash provided by (used in) financing activities	21,854	(18,991)	37,651
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(59)	4,895	(708)
Net increase in cash, cash equivalents and restricted cash	109,838	42,109	38,409
Cash, cash equivalents and restricted cash at beginning of year	204,813	162,704	124,295
Cash, cash equivalents and restricted cash at end of year	$ 314,651	$ 204,813	$ 162,704

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended June 30,		
	2022	2021	2020
Supplemental disclosures of cash flow information:			
Cash paid for interest	$ 3,404	$ 5,641	$ 2,223
Cash paid for income taxes	$ 5,768	$ 970	$ 2,258
Supplemental disclosures of non-cash investing and financing information:			
Property and equipment purchased but not yet paid	$ 62,165	$ 20,204	$ 17,370
Reissuance of treasury stock	$ 64	$ 120	$ 56
Reconciliation of cash, cash equivalents, and restricted cash:			
Cash and cash equivalents	$ 314,352	$ 202,412	$ 158,536
Restricted cash	299	233	2,190
Restricted cash - long-term	—	2,168	1,978
Total cash, cash equivalents, and restricted cash	$ 314,651	$ 204,813	$ 162,704

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

ALPHA AND OMEGA SEMICONDUCTOR LIMITED

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. The Company and Significant Accounting Policies

The Company

Alpha and Omega Semiconductor Limited and its subsidiaries (the “Company”, “AOS”, “we” or “us”) design, develop and supply a broad range of power semiconductors. The Company's portfolio of products targets high-volume applications, including personal computers, graphic cards, flat panel TVs, home appliances, smart phones, battery packs, quick chargers, home appliances, consumer and industrial motor controls and power supplies for TVs, computers, servers and telecommunications equipment. The Company conducts its operations primarily in the United States of America (“USA”), Hong Kong, China, and South Korea.

Basis of Preparation

The consolidated financial statements include the accounts of the Company, its wholly-owned subsidiaries and a subsidiary in which it had a controlling interest until December 1, 2021. As of December 2, 2021, the Company ceased having control over this subsidiary. Therefore, the Company deconsolidated this subsidiary as of that date. Subsequently, the Company has accounted for it using the equity method of accounting. All intercompany account balances and transactions have been eliminated. The consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”).

Reclassification

Certain reclassifications of prior period presentation to conform to current period presentation have been made with no changes made to balance sheet, income statement or statement of cash flows subtotals.

Joint Venture

On March 29, 2016, the Company entered into a joint venture contract (the “JV Agreement”) with two investment funds owned by the Municipality of Chongqing (the “Chongqing Funds”), pursuant to which the Company and the Chongqing Funds formed a joint venture, (the “JV Company”), for the purpose of constructing and operating a power semiconductor packaging, testing and 12-inch wafer fabrication facility in the Liangjiang New Area of Chongqing, China (the “JV Transaction”). As of December 1, 2021, the Company owned 51%, and the Chongqing Funds owned 49%, of the equity interest in the JV Company. The Joint Venture was accounted under the provisions of the consolidation guidance since the Company had controlling financial interest until December 1, 2021. If both parties agree that the termination of the JV Company is the best interest of each party or the JV Company is bankrupt or insolvent where either party may terminate early, after paying the debts of the JV Company, the remaining assets of the JV Company shall be paid to the Chongqing Funds to cover the principal of its total paid-in contributions plus interest at 10% simple annual rate prior to distributing the balance of the JV Company's assets to the Company. The JV Company has reached its targeted production of assembly and testing.

Effective December 1, 2021, the Company entered into a share transfer agreement (the “STA”) with a third-party investor (the “Investor”), pursuant to which the Company sold to the Investor approximately 2.1% of outstanding equity interest held by the Company in the JV Company for an aggregate purchase price of RMB 108 million or approximately $16.9 million (the “Transaction”). The Transaction was closed on December 2, 2021 (the “Closing Date”). As a result of the Transaction, as of the Closing Date, the Company’s equity interest in the JV Company decreased from 50.9% to 48.8%. Also, the Company’s right to designate directors on the board of JV Company was reduced to three (3) out of seven (7) directors from four (4) directors prior to the Transaction. As a result of the Transaction, AOS no longer had a controlling financial interest in the JV Company under generally accepted accounting principles. Loss of control is deemed to have occurred when, among other things, a parent company owns less than a majority of the outstanding equity interest in the subsidiary, lacks a controlling financial interest in the subsidiary and, is unable to unilaterally control the subsidiary through other means such as having, or the ability to obtain or represent, a majority of the subsidiary’s board of directors. Because of these factors, as of December 2, 2021, the Company ceased having control over the JV Company. Therefore, the Company deconsolidated the financial statements of the JV Company as of that date. Subsequently, the Company has accounted for its investment in the JV Company using the equity method of accounting.

On December 24, 2021, the Company entered into a share transfer agreement with another third-party investor, pursuant to which the Company sold to this investor 1.1% of outstanding equity interest held by the Company in the JV Company for an aggregate purchase price of RMB 60 million, or approximately $9.4 million. In addition, on December 30, 2021, the JV

Company adopted an employee equity incentive plan and issued an equity interest equivalent to 3.99% of the JV Company in exchange for cash. As a result, the Company owned 45.8% of the equity interest in the JV Company as of December 31, 2021.

On January 26, 2022, the JV Company completed a financing transaction pursuant to a corporate financing agreement (the "Financing Agreement") between the JV Company and certain third-party investors (the "New Investors"). Under the Financing Agreement, the New Investors purchased newly issued equity interest of the JV Company for a total purchase price of RMB 509 million (or approximately $80 million based on the currency exchange rate as of January 26, 2022) (the "Investment"). Immediately following the closing of the Investment, the percentage of outstanding JV Company equity interest beneficially owned by the Company was further reduced to 42.2%.

Certain Significant Risks and Uncertainties Related to Outbreak of Coronavirus Disease 2019 ("COVID-19")

The COVID-19 pandemic has had and continues to have a negative impact on business and economic activities across the globe. As a result of the COVID-19 pandemic and the global economic downturn and changing consumer behaviors due to various restrictions imposed by governments, the Company has experienced shifting market trends, including an increasing demand in the markets for notebooks, PCs and gaming devices and decreasing demand for mobile phone and industrial products, as more consumers are staying at and working from home. While the Company has recently benefited from the increasing demand of consumer electronics and PC related products, there is no guarantee that this trend will continue, and such increasing demand may discontinue or decline as government authorities relax and terminate COVID-19 related restrictions and consumer behaviors change. Furthermore, as the COVID-19 pandemic continues and global economic downturn and high unemployment persists, consumer spending may slow down substantially, in which case the Company may experience a significant decline of customer orders for its products, including those designed for PC-related applications, and such decline will adversely affect its financial conditions and results of operations. The full extent of the future impact of the COVID-19 pandemic on the Company's operational and financial performance is uncertain and will depend on many factors outside the Company's control, including, without limitation, the timing, extent, trajectory and duration of the pandemic; the availability, distribution and effectiveness of vaccines; the spread of new variants of COVID-19; the continued or renewed imposition of protective public safety measures and government mandates; the continuing disruption of global supply chain affecting the semiconductor industry; and the impact of the pandemic on the global economy and demand for consumer products.

In April 2022, the operations of our two packaging and testing facilities in Shanghai, China were suspended due to a strict lockdown of the city imposed by the local government in response to surging COVID cases. Our facilities in Shanghai were required to be shut down and production was halted beginning in early April. Transportation suspension in and out of Shanghai also interrupted the shipping of raw materials and finished parts to and from our facilities. We received permission to reopen our facilities partially in early May. We gradually ramped up production at these facilities in May and returned to normal operation in June 2022. The suspension of our Shanghai facilities, and the subsequent partial resumption of production, reduced our ability to complete orders from our customers in a timely manner, which adversely affected our revenue and results of operation for the three months ended June 30, 2022.

Risks and Uncertainties

The Company is subject to certain risks and uncertainties. The Company believes changes in any of the following areas could have a material adverse effect on the Company's future financial position or results of operations or cash flows: the timing and success of new product development, including market receptiveness, operation of in-house manufacturing facilities, litigation or claims against the Company based on intellectual property, patent, product regulatory or other factors, competition from other products, general economic conditions, the inability to attract and retain qualified employees, lack of control to the JV Company and ultimately to sustain profitable operations, risks associated with doing business in China, and ability to diversify products and develop digital business; the general state of the U.S., China and world economies; the highly cyclical nature of the industries the Company serves; the loss of any of its larger customers; restrictions on the Company's ability to sell to foreign customers due to trade laws, regulations and requirements; disruptions of the supply chain of components needed for our products; inability to obtain additional financing; inability to meet certain debt covenants; fundamental changes in the technology underlying the Company's products; successful and timely completion of product design efforts; and new product design introductions by competitors. Additional risks and uncertainties that the Company is unaware of, or that the Company currently believes are not material, may also become important factors that adversely affect its business.

The Company's revenue limited by its ability to utilize wafer production and packaging and testing capacity from its in-house facilities and obtain adequate wafer supplies from third-party foundries. The Company recently entered into a new agreement with the JV Company pursuant to which the JV Company agrees to provide us with a guaranteed supply of a fixed number of wafers until December 2023. Currently the Company's main third-party foundry is Shanghai Hua Hong Grace Electronic Company Limited, or HHGrace, located in Shanghai, China. HHGrace has been manufacturing wafers for the Company since 2002. HHGrace manufactured approximately 10.3%, 11.5% and 12.7% of the wafers used in the Company's products for the fiscal years ended June 30, 2022, 2021 and 2020, respectively. Although the Company believes that its volume of production allows the Company to secure favorable pricing and priority in allocation of capacity in its third-party foundries, if the foundries' capacities are constrained due to market demands, HHGrace, together with other foundries from which the Company purchases wafers, may not be willing or able to satisfy all of the Company's manufacturing requirements on a timely basis and/or at favorable prices. The Company is also subject to the risks of service disruptions and raw material shortages by its foundries. Such disruptions, shortages and price increases could harm the Company’s operating results. In addition, manufacturing facilities' capacity affects the Company's gross margin because the Company has certain fixed costs associated with its Oregon Fab and the JV Company, as well as in-house packaging and testing facilities. If the Company fails to utilize its manufacturing facilities' capacity at a desirable level, its financial condition and results of operations will be adversely affected.

Use of Estimates

The preparation of the consolidated financial statements in conformity with U.S. GAAP requires the Company to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses. To the extent there are material differences between these estimates and actual results, the Company's condensed consolidated financial statements will be affected. On an ongoing basis, the Company evaluates the estimates, judgments and assumptions including those related to stock rotation returns, price adjustments, allowance for doubtful accounts, inventory reserves, warranty accrual, income taxes, leases, share-based compensation, recoverability of and useful lives for property, plant and equipment and intangible assets, as well as the economic implications of the COVID-19 pandemic.

Foreign Currency Transactions and Translation

Most of the Company's principal subsidiaries use U.S. dollars as their functional currency because their transactions are primarily conducted and settled in U.S. dollars. All of their revenues and a significant portion of their operating expenses are denominated in U.S. dollars. The functional currencies for the Company's in-house packaging and testing facilities in China are U.S. dollars, and a majority of their capital expenditures are denominated in U.S. dollars. Foreign currency transactions are translated into the functional currencies using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses, resulting from the settlement of such transactions and from the re-measurement of monetary assets and liabilities denominated in foreign currencies using exchange rates at balance sheet date and non-monetary assets and liabilities using historical exchange rates, are recognized in the consolidated statements of operations.

For the Company's subsidiaries which use the local currency as their functional currency, their results and financial position are translated into U.S. dollars using exchange rates at balance sheet dates for assets and liabilities and using average exchange rates for income and expenses items. The resulting translation differences are presented as a separate component of accumulated other comprehensive income (loss) and noncontrolling interest in the consolidated statements of equity.

Cash, Cash Equivalents and Restricted Cash

Cash and cash equivalents primarily consist of cash on hand and short-term bank deposits with original maturities of three months or less. Cash equivalents are highly liquid investments with stated maturities of three months or less as of the dates of purchase. The carrying amounts reported for cash and cash equivalents are considered to approximate fair values based upon their short maturities.

Cash and cash equivalents are maintained with reputable major financial institutions. If, due to current economic conditions or other factors, one or more of the financial institutions with which the Company maintains deposits fails, the Company's cash and cash equivalents may be at risk. Deposits with these banks may exceed the amount of insurance provided on such deposits; however, these deposits typically may be redeemed upon demand and, therefore, bear minimal risk.

The Company maintains restricted cash in connection with cash balances temporarily restricted for regular business operations, including the possibility of a dispute with a vendor. These balances have been excluded from the Company’s cash and cash equivalents balance and are classified as restricted cash in the Company’s consolidated balance sheets. As of June 30, 2022 and 2021, the amount of restricted cash was $0.3 million and $2.4 million, respectively.

Accounts Receivable, net

The allowance for doubtful accounts is based on assessment of the collectability of accounts receivable from customers. The Company reviews the allowance by considering factors such as historical collection experience, credit quality, age of the accounts receivable balances and current economic conditions that may affect a customer's ability to pay. The Company writes off a receivable and charges against its recorded allowance when it has exhausted its collection efforts without success.

Fair Value Measurements

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The fair value hierarchy is based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value, which are the following:

- Level 1 - Quoted prices in active markets for identical assets or liabilities.
- Level 2 - Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Fair Value of Financial Instruments

The fair value of cash equivalents is based on observable market prices and have been categorized in Level 1 in the fair value hierarchy. Cash equivalents consist primarily of short-term bank deposits. The carrying values of financial instruments such as cash and cash equivalents, accounts receivable and accounts payable approximate their carrying values due to their short-term maturities. The carrying value of the company's debt is considered a reasonable estimate of fair value which is estimated by considering the current rates available to the Company for debt of the same remaining maturities, structure and terms of the debts.

Inventories

The Company carries inventories at the lower of cost (determined on a first-in, first-out basis) or net realizable value. Cost includes semiconductor wafer and raw materials, labor, depreciation expenses and other manufacturing expenses and overhead, and packaging and testing fees paid to third parties if subcontractors are used. Valuation of inventories are based on the Company's periodic review of inventory quantities on hand as compared with its sales forecasts, historical usage, aging of inventories, production yield levels and current product selling prices. If actual market conditions are less favorable than those forecasted by management, additional future inventory write-downs may be required that could adversely affect the Company's operating results. Adjustments to inventory once established are not reversed until the related inventory has been sold or scrapped.

Property, Plant and Equipment

Property, plant and equipment are stated at historical cost less accumulated depreciation. Historical cost includes expenditures that are directly attributable to the acquisition of the items and the costs incurred to make the assets ready for their intended use.

Depreciation is provided for on a straight-line basis over the estimated useful lives of the related assets as follows:

Building	20 years
Manufacturing machinery and equipment	8 to 10 years
Equipment and tooling	3 to 5 years
Computer hardware and software	3 to 5 years
Office furniture and equipment	5 years
Leasehold and building improvements	2 to 20 years
Vehicle	5 years

Equipment and construction in progress represent equipment received but the necessary installation has not been fully performed or building construction and leasehold improvements have been started but not yet completed. Equipment and construction in progress are stated at cost and transferred to respective asset class when fully completed and ready for their intended use.

Internal-use software development costs are capitalized to the extent that the costs are directly associated with the development of identifiable and unique software products controlled by the Company that will probably generate economic benefits beyond one year. Costs incurred during the application development stage are required to be capitalized. The application development stage is characterized by software design and configuration activities, coding, testing and installation. Training costs and maintenance are expensed as incurred, while upgrades and enhancements are capitalized if it is probable that such expenditures will result in additional functionality. Costs include employee costs incurred and fees paid to outside consultants for the software development and implementation. Internally developed software is amortized over its estimated useful life of three to five years starting from the date when it is ready for its intended use.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognized as selling, general and administrative expenses in the consolidated statements of operations. Costs of maintenance and repairs that do not improve or extend the lives of the respective assets are expensed as incurred.

Government Grants

The Company occasionally receives government grants that provide financial assistance for certain eligible expenditures in China. These grants include reimbursements on interest expense on bank borrowings, payroll tax credits, credit for property, plant and equipment in a particular geographical location, employment credits as well as business expansion credits. Government grants are not recognized until there is reasonable assurance that the Company will comply with the conditions attaching to it, and that the grant will be received. The Company records such grants either as a reduction of the related expense, a reduction of the cost of the related asset, or as other income depending upon the nature of the grant. As a result of such grants, during the fiscal year ended June 30, 2022, the Company reduced interest expense by $0.9 million, property, plant and equipment by $1.4 million, and operating expenses by $0.2 million. During the fiscal year ended June 30, 2021, the Company reduced interest expense by $3.0 million, property, plant and equipment by $0.1 million, and operating expenses by $3.7 million. During the fiscal year ended June 30, 2020, the Company reduced interest expenses by $6.1 million, property, plant and equipment by $1.3 million, and operating expenses by $4.7 million.

Long-lived Assets

The Company reviews all long-lived assets whenever events or changes in circumstance indicate that these assets may not be recoverable. When evaluating long-lived assets, if the Company concludes that the estimated undiscounted cash flows attributable to the assets are less than their carrying value, the Company recognizes an impairment loss based on the excess of the carrying amount of the assets over their respective fair values, which could adversely affect our results of operations.

There was no impairment of long-lived assets for fiscal years 2022, 2021 and 2020.

Revenue Recognition

The Company determines revenue recognition through the following steps: (1) identification of the contract with a customer; (2) identification of the performance obligations in the contract; (3) determination of the transaction price; (4) allocation of the transaction price to the performance obligations in the contract; and (5) recognition of revenue when, or as, a performance obligation is satisfied. The Company recognizes product revenue at a point in time when product is shipped to the customer, as determined by the agreed upon shipping terms, net of estimated stock rotation returns and price adjustments that it expects to provide to certain distributors. The Company presents revenue net of sales taxes and any similar assessments. Our standard payment terms range from 30 to 60 days.

The Company sells its products primarily to distributors, who in turn sell the products globally to various end customers. The Company allows stock rotation returns from certain distributors. Stock rotation returns are governed by contract and are limited to a specified percentage of the monetary value of products purchased by distributors during a specified period. The Company records an allowance for stock rotation returns based on historical returns, current expectations, and individual distributor agreements. The Company also provides special pricing to certain distributors, primarily based on volume, to encourage resale of the Company's products. Allowance for price adjustments is recorded against accounts receivable and the provision for stock rotation rights is included in accrued liabilities on the consolidated balance sheets.

The Company's performance obligations relate to contracts with a duration of less than one year. The Company elected to apply the practical expedient provided in ASC 606, “Revenue from Contracts with Customers”. Therefore, the Company is not required to disclose the aggregate amount of transaction price allocated to performance obligations that are unsatisfied or partially unsatisfied at the end of the reporting period.

The Company recognizes the incremental direct costs of obtaining a contract, which consist of sales commissions, when control over the products they relate to transfers to the customer. Applying the practical expedient, the Company recognizes commissions as expense when incurred, as the amortization period of the commission asset the Company would have otherwise recognized is less than one year.

Packaging and testing services revenue is recognized at a point in time upon shipment of serviced products to the customer.

Leases

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use (“ROU”) assets, current operating lease liabilities and long-term operating lease liabilities on the Company's consolidated balance sheets. Finance leases are included in property, plant and equipment, finance lease liabilities and long-term finance leases liabilities on the consolidated balance sheets.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. The Company determined its incremental borrowing rate based on the information available at the lease commencement date. The operating lease ROU assets also include any lease payments made and exclude lease incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise such options. Operating lease expense is generally recognized on a straight-line basis over the lease term. Variable lease payments are expensed as incurred and are not included within the operating lease ROU asset and lease liability calculation. The Company does not record leases on the consolidated balance sheet with a term of one year or less. The Company elected to combine its lease and non-lease components as a single lease component for all asset classes.

Product Warranty

The Company provides a standard one-year warranty for the products from the date of purchase by the end customers. The Company accrues for estimated warranty costs at the time revenue is recognized. The Company's warranty obligation is affected by product failure rates, labor and material costs for replacing defective parts, related freight costs for failed parts and other quality assurance costs. The Company monitors its product returns for warranty claims and maintains warranty reserves based on historical experiences and anticipated warranty claims known at the time of estimation.

Shipping and Handling Costs

Shipping and handling costs are included in cost of goods sold.

Research and Development

Research and development costs are expensed as incurred.

Provision for Income Taxes

Income tax expense or benefit is based on income or loss before taxes. Deferred tax assets and liabilities are recognized principally for the expected tax consequences of temporary differences between the tax basis of assets and liabilities and their reported amounts.

The Company is subject to income taxes in a number of jurisdictions. Significant judgment is required in determining the worldwide provision for income taxes. There are many transactions and calculations for which the ultimate tax determination is uncertain during the ordinary course of business. The Company establishes accruals for certain tax contingencies based on estimates of whether additional taxes may be due. While the final tax outcome of these matters may differ from the amounts that were initially recorded, such differences will impact the income tax and deferred tax provisions in the period in which such determination is made.

Significant management judgment is also required in determining whether deferred tax assets will be realized in full or in part. When it is more likely than not that all or some portion of specific deferred tax assets such as net operating losses or research and experimentation tax credit carryforwards will not be realized, a valuation allowance must be established for the amount of the deferred tax assets that cannot be realized. The Company considers all available positive and negative evidence on a jurisdiction-by-jurisdiction basis when assessing whether it is more likely than not that deferred tax assets are recoverable.

The Company considers evidence such as our past operating results, the existence of cumulative losses in recent years and our forecast of future taxable income.

The Financial Accounting Standards Board (FASB), issued guidance which clarifies the accounting for income taxes by prescribing a minimum probability threshold that a tax position must meet before a financial statement benefit is recognized. The minimum threshold is defined as a tax position that is more likely than not to be sustained upon examination by the applicable taxing authority, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The tax benefit to be recognized is measured as the largest amount of benefit that is greater than fifty percent likely to be realized upon ultimate settlement. Although the guidance on the accounting for uncertainty in income taxes prescribes the use of a recognition and measurement model, the determination of whether an uncertain tax position has met those thresholds will continue to require significant judgment by management. If the ultimate resolution of tax uncertainties is different from what is currently estimated, a material impact on income tax expense could result.

The Company's provision for income taxes is subject to volatility and could be adversely impacted by changes in earnings or tax laws and regulations in various jurisdictions. The Company is subject to the continuous examination of our income tax returns by the Internal Revenue Service and other tax authorities. The Company regularly assesses the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the impact of changes to reserves, as well as the related net interest and penalties.

Share-based Compensation Expense

The Company maintains an equity-settled, share-based compensation plan to grant restricted share units and stock options. The Company recognizes expense related to share-based compensation awards that are ultimately expected to vest based on estimated fair values on the date of grant. The fair value of restricted share units is based on the fair value of the Company's common share on the date of grant. For restricted stock awards subject to market conditions, the fair value of each restricted stock award is estimated at the date of grant using the Monte-Carlo pricing model. The fair value of stock options is estimated on the date of grant using the Black-Scholes option valuation model. Share-based compensation expense is recognized on the accelerated attribution basis over the requisite service period of the award, which generally equals the vesting period. The Black-Scholes option valuation model requires the input of subjective assumptions, including the expected term and stock price volatility. In addition, judgment is also required in estimating the number of stock-based awards that are expected to be forfeited. Forfeitures are estimated based on historical experience at the time of grant. Changes in estimated forfeitures are recognized in the period of change and impact the amount of stock compensation expenses to be recognized in future periods, which could be material if actual results differ significantly from estimates.

The Employee Share Purchase Plan (the “ESPP”) is accounted for at fair value on the date of grant using the Black-Scholes option valuation model.

Advertising

Advertising expenditures are expensed as incurred. Advertising expense was $0.2 million, $0.4 million and $0.7 million in the fiscal years ended June 30, 2022, 2021, and 2020, respectively.

Comprehensive Income (Loss)

Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. The Company's accumulated other comprehensive income (loss) consists of cumulative foreign currency translation adjustments.

Recent Accounting Pronouncements

Recently Issued Accounting Standards not yet adopted

In November 2021, the FASB issued Accounting Standards Update (ASU) No. 2021-10, “Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance.” This ASU requires business entities to make annual disclosures about transactions with a government they account for by analogizing to a grant or contribution accounting model under ASC 958-605. The ASU is effective for all entities within their scope for financial statements issued for annual periods beginning after December 15, 2021. The adoption will not have any impacts on the Company's consolidated financial position, results of operations or cash flows.

In August 2020, the FASB issued ASU No. 2020-06, "Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity", which, among other things, provides guidance on how to account for contracts on an entity's own equity. This ASU simplifies the accounting for certain financial instruments with characteristics of liabilities and equity. Specifically, the ASU eliminated the need for the Company to assess (1) whether a contract on the entity's own equity permits settlement in unregistered shares, (2) whether counterparty rights rank higher than shareholder's rights, and (3) whether collateral is required. In addition, the ASU requires incremental disclosure related to contracts on the entity's own equity and clarifies the treatment of certain financial instruments accounted for under this ASU on earnings per share. For public business entities, the ASU is effective for fiscal years beginning after December 15, 2021, and interim periods within those fiscal years. The Company does not expect the adoption of this guidance will have a material impact on its consolidated financial position, results of operations or cash flows.

Recently Adopted Accounting Standards

In January 2020, the FASB issued ASU No. 2020-01, "Investments - Equity Securities (Topic 321), Investments - Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815) - Clarifying the Interactions between Topic 321, Topic 323, and Topic 815." The ASU is based on a consensus of the Emerging Issues Task Force and is expected to increase comparability in accounting for these transactions. ASU 2016-01 made targeted improvements to accounting for financial instruments, including providing an entity the ability to measure certain equity securities without a readily determinable fair value at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. Among other topics, the amendments clarify that an entity should consider observable transactions that require it to either apply or discontinue the equity method of accounting. The adoption of ASU 2020-01 on July 1, 2021 had no material impact on the Company's Consolidated Financial Statements.

In December 2019, the FASB issued ASU No. 2019-12 "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes ("ASU 2019-12") by removing certain exceptions to the general principles. The Company adopted ASU 2019-12 as of July 1, 2021. ASU 2019-12 had no material impact on the Company's Consolidated Financial Statements.

2. Equity Method Investment in Equity Investee

On December 1, 2021 (the "Effective Date"), Alpha & Omega Semiconductor (Shanghai) Ltd. ("AOS SH") and Agape Package Manufacturing (Shanghai) Limited ("APM SH"), each a wholly-owned subsidiary of the Company, entered into a share transfer agreement ("STA") with a third-party investor to sell a portion of the Company's equity interest in the JV Company which consists of a power semiconductor packaging, testing and 12-inch wafer fabrication facility in Chongqing, China (the "Transaction"). The Transaction closed on December 2, 2021 (the "Closing Date"), which reduced the Company's equity interest in the JV Company from 50.9% to 48.8%. Also, the Company's right to designate directors on the board of JV Company was reduced to three (3) out of seven (7) directors, from four (4) directors prior to the Transaction. As a result of the Transaction and other factors, the Company no longer has a controlling financial interest in the JV Company and has determined that the JV Company was deconsolidated from the Company's Consolidated Financial Statements effective as of the Closing Date. In connection with the deconsolidation and in accordance with ASC 810, the Company recorded a gain on deconsolidation of $399.1 million during the fiscal year ended June 30, 2022 in the Consolidated Statements of Income. The gain on deconsolidation of the JV Company was calculated as follows:

		(in thousands)
Cash received for sales of shares in the JV Company	$	16,924
Fair value of retained equity method investment		393,124
Carrying amount of non-controlling interest		143,889
Cumulative translation adjustment removal		1,793
Carrying amount of net assets of the JV Company at December 1, 2021		(156,637)
Gain on deconsolidation of the JV Company	$	399,093

The Company retained significant influence over the operating and financial policies of the JV Company and measured the fair value of the retained investment based on their share of the fair value of the JV Company, which was calculated using the market approach based on the Transaction.

On December 24, 2021, the Company entered into a share transfer agreement with another third-party investor, pursuant to which the Company sold to this investor 1.1% of outstanding equity interest held by the Company in the JV Company. In addition, on December 30, 2021, the JV Company adopted an employee equity incentive plan and issued an equity interest equivalent to 3.99% of the JV Company in exchange to cash. As a result of these two transactions, the Company owned 45.8% of the equity interest in the JV Company as of December 31, 2021.

On January 26, 2022, the JV Company completed a financing transaction pursuant to a corporate investment agreement (the "Investment Agreement") between the JV and certain third-party investors (the "New Investors"). Under the Investment Agreement, the New Investors purchased newly issued equity interest of the JV Company, representing approximately 7.82% of post-transaction outstanding equity interests of the JV Company, for a total purchase price of RMB 509 million (or approximately USD 80 million based on the currency exchange rate as of January 26, 2022) (the "Investment"). Following the closing of the Investment and as of June 30, 2022, the percentage of outstanding JV Company equity interest beneficially owned by the Company was reduced to 42.2%.

The net loss associated with these sales of JV Company equity interest held by the Company were recorded in the fiscal year ended June 30, 2022 as follows:

		(in thousands)
Gain on 1.1% equity interest sold	$	475
Loss on diluted equity interest from issuance of shares under the employee equity incentive plan		(8,116)
Gain on 7.82% equity interest sold		4,501
Loss on changes on equity interest of the JV Company, net	$	(3,140)

The Company accounts for its investment in the JV Company as an equity method investment and reports its equity in earnings or loss of the JV Company on a three-month lag due to an inability to timely obtain financial information of the JV Company. During the fiscal year ended June 30, 2022, the Company recorded $2.6 million of its equity in loss of the JV Company, using lag reporting.

Summarized Financial Information

The following table presents summarized financial information for the JV Company as of and for the period from December 2, 2021 through March 31, 2022, using lag reporting (in thousands):

	As of March 31, 2022	
Current assets	$	198,323
Non-current assets	$	364,777
Current liabilities	$	251,988
Non-current liabilities	$	76,207

	For the periods of December 2, 2021 to March 31, 2022	
Revenue	$	68,972
Gross loss	$	870
Operating expenses	$	2,280
Net loss	$	6,197

3. Related Party Transactions

As of June 30, 2022, the Company owned 42.2% equity interest in the JV Company, which, by definition, is a related party to the Company. The JV Company supplies 12-inch wafers and provides assembly and testing services for 8-inch wafer products to AOS. Due to the right of offset of receivables and payables with the JV Company, as of June 30, 2022, AOS recorded the net amount of $29.0 million as a payable related to equity investee, net, in the Consolidated Balance Sheet. Since the December 2, 2021 deconsolidation of the JV Company and through the fiscal year ended June 30, 2022, the Company purchased finished goods and services of $117.6 million from the JV Company and AOS provided the JV Company with $36.4 million of 8-inch wafers.

4. Net Income (Loss) Per Common Share Attributable to Alpha and Omega Semiconductor Limited

Basic net income (loss) per share is computed using the weighted-average number of common shares outstanding during the period. Diluted net income (loss) per share is computed using the weighted-average number of common shares outstanding, plus potential shares of common stock during the period. Potential shares of common stock include dilutive shares attributable to the assumed exercise of share options, ESPP shares and vesting of RSUs using the treasury stock method and contingent issuances of common shares related to convertible preferred shares, if dilutive. Under the treasury stock method, potential common shares outstanding are not included in the computation of diluted net income per share if their effect is anti-dilutive.

The following table presents the calculation of basic and diluted net income (loss) per share attributable to common shareholders:

	Year Ended June 30,		
	2022	2021	2020
	(in thousands, except per share data)		
Numerator:			
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	$ 453,163	$ 58,116	$ (6,596)
Denominator:			
Basic:			
Weighted average number of common shares used to compute basic net income per share	26,764	25,786	24,840
Diluted:			
Weighted average number of common shares used to compute basic net income per share	26,764	25,786	24,840
Effect of potentially dilutive securities:			
Stock options, RSUs and ESPP shares	1,439	1,486	—
Weighted average number of common shares used to compute diluted net income per share	28,203	27,272	24,840
Net income (loss) per share attributable to Alpha and Omega Semiconductor Limited:			
Basic	$ 16.93	$ 2.25	$ (0.27)
Diluted	$ 16.07	$ 2.13	$ (0.27)

The following potential dilutive securities were excluded from the computation of diluted net income (loss) per share as their effect would have been anti-dilutive:

	Year Ended June 30,		
	2022	2021	2020
	(in thousands)		
Employee stock options and RSUs	277	193	2,028
ESPP	21	71	834
Total potential dilutive securities	298	264	2,862

5. Concentration of Credit Risk and Significant Customers

The Company manages its credit risk associated with exposure to distributors and direct customers on outstanding accounts receivable through the application of credit approvals, credit ratings and other monitoring procedures. In some instances, the Company also obtains letters of credit from certain customers.

Credit sales, which are mainly on credit terms of 30 to 60 days, are only made to customers who meet the Company's credit standards, while sales to new customers or customers with low credit ratings are usually made on an advance payment basis. The Company considers its financial assets to be of good credit quality because its key distributors and direct customers have long-standing business relationships with the Company and the Company has not experienced any significant bad debt write-offs of accounts receivable in the past. The Company closely monitors the aging of accounts receivable from its distributors and direct customers, and regularly reviews their financial positions, where available.

Summarized below are individual customers whose revenue or accounts receivable balances were 10% or higher than the respective total consolidated amounts:

	Year Ended June 30,		
Percentage of revenue	**2022**	**2021**	**2020**
Customer A	24.6 %	28.7 %	29.3 %
Customer B	39.7 %	35.4 %	35.5 %

	June 30,	
Percentage of accounts receivable	**2022**	**2021**
Customer A	24.6 %	12.4 %
Customer B	36.4 %	22.1 %
Customer C	*	21.9 %
Customer D	12.0 %	*

* Less than 10%

6. Balance Sheet Components

Accounts receivable, net

	June 30, 2022	June 30, 2021
	(in thousands)	
Accounts receivable	$ 84,442	$ 48,234
Less: Allowance for price adjustments	(18,731)	(12,415)
Less: Allowance for doubtful accounts	(30)	(30)
Accounts receivable, net	$ 65,681	$ 35,789

Inventories

	June 30, 2022	June 30, 2021
	(in thousands)	
Raw materials	$ 67,960	$ 68,900
Work in-process	80,720	68,824
Finished goods	9,360	16,569
	$ 158,040	$ 154,293

Other current assets

	June 30, 2022	June 30, 2021
	(in thousands)	
VAT receivable	$ 737	$ 1,539
Other prepaid expenses	3,954	1,465
Prepaid insurance	2,590	2,615
Prepaid maintenance	826	1,670
Prepayments to supplier	257	2,540
Prepaid income tax	2,086	2,221
Interest receivable	25	2,207
Customs deposit	—	270
Other receivables	745	68
	$ 11,220	$ 14,595

Property, plant and equipment, net

	June 30, 2022	June 30, 2021
	(in thousands)	
Land	$ 4,877	$ 4,877
Building	16,691	71,454
Manufacturing machinery and equipment	287,574	515,320
Equipment and tooling	28,052	27,017
Computer equipment and software	46,758	41,518
Office furniture and equipment	2,820	3,814
Leasehold improvements	35,254	74,733
Land use rights	—	9,319
	422,026	748,052
Less: accumulated depreciation	(233,340)	(348,749)
	188,686	399,303
Equipment and construction in progress	129,980	37,674
Property, plant and equipment, net	$ 318,666	$ 436,977

Total depreciation expense was $39.9 million, $49.3 million and $43.9 million for fiscal year 2022, 2021 and 2020, respectively.

The Company capitalized $0.3 million, $0.3 million and $1.0 million of software development costs during the fiscal year 2022, 2021 and 2020, respectively. Amortization of capitalized software development costs was $0.4 million in fiscal year 2022, $0.5 million in fiscal year 2021 and $0.5 million in fiscal year 2020. Unamortized capitalized software development costs in each of the periods presented at June 30, 2022 and 2021 were $0.8 million and $1.2 million, respectively.

Other long-term assets

	June 30, 2022	June 30, 2021
	(in thousands)	
Prepayments for property and equipment	$ 6,890	$ 14,882
Investments in privately held companies	100	100
Customs deposit	1,708	1,120
Deposit with supplier	6,396	—
Other long-term deposits	18	927
Office leases deposits	1,012	1,100
Other	1,553	740
	$ 17,677	$ 18,869

Intangible assets, net

	June 30, 2022	June 30, 2021
	(in thousands)	
Patents and technology rights	$ 18,037	$ 18,037
Trade name	268	268
Customer relationships	1,150	1,150
	19,455	19,455
Less: accumulated amortization	(9,674)	(6,314)
	9,781	13,141
Goodwill	269	269
Intangible assets, net	$ 10,050	$ 13,410

The Company is amortizing intangible assets of patents and technology rights related to a license agreement with STMicroelectronices International N.V. Amortization expense for intangible assets was $3.4 million, $3.4 million and $0.1 million for the years ended June 30, 2022, 2021 and 2020, respectively. The estimated useful lives for patents and technology rights and trade name were five years and ten years, respectively. Customer relationships are fully amortized.

Estimated future minimum amortization expense of intangible assets is as follows (in thousands):

Year ending June 30,	
2023	$ 3,286
2024	3,249
2025	3,246
	$ 9,781

Accrued liabilities

	June 30,	
	2022	2021
	(in thousands)	
Accrued compensation and benefits	$ 34,681	$ 32,756
Warranty accrual	2,650	2,795
Stock rotation accrual	4,798	3,917
Accrued professional fees	2,659	3,017
Accrued inventory	2,491	1,138
Accrued facilities related expenses	2,421	2,536
Accrued property, plant and equipment	20,485	8,688
Other accrued expenses	5,159	6,793
Customer deposit	40,578	7,139
ESPP payable	971	715
	$ 116,893	$ 69,494

The activity in the warranty accrual, included in accrued liabilities is as follows:

	Year Ended June 30,		
	2022	2021	2020
	(in thousands)		
Beginning balance	$ 2,795	$ 709	$ 623
Addition	1,127	2,443	895
Utilization	(1,272)	(357)	(809)
Ending balance	$ 2,650	$ 2,795	$ 709

The activity in the stock rotation accrual, included in accrued liabilities is as follows:

	Year Ended June 30,		
	2022	2021	2020
	(in thousands)		
Beginning balance	$ 3,917	$ 3,358	$ 1,921
Addition	5,817	4,742	9,441
Utilization	(4,936)	(4,183)	(8,004)
Ending balance	$ 4,798	$ 3,917	$ 3,358

Other long-term liabilities

	June 30,	
	2022	2021
	(in thousands)	
Deferred payroll taxes	$ —	$ 1,219
Customer deposits	70,301	42,000
Computer software liabilities	8,302	—
Other	—	904
Other long-term liabilities	$ 78,603	$ 44,123

Customer deposits are payments received from customers for securing future product shipments. As of June 30, 2022, $34.5 million were from Customer A and $21.9 million were from Customer B, and $13.9 million were from other customers. As of June 30, 2021, $21.0 million were from Customer A and $21.0 million were from Customer B.

7. Debt

Short-term bank borrowing

In October 2019, the Company's subsidiary in China entered into a line of credit facility with Bank of Communications Limited in China. This line of credit matured on February 14, 2021 and was based on the China Base Rate multiplied by 1.05, or 4.99% on October 31, 2019. The purpose of the credit facility is to provide short-term borrowings. The Company could borrow up to approximately RMB 60.0 million or $8.5 million based on the currency exchange rate between the RMB and the U.S. Dollar on October 31, 2019. In September 2021, this line of credit was renewed with maximum borrowings up to RMB 140.0 million with the same terms and a maturity date of September 18, 2022. During the three months ended December 31, 2021, the Company borrowed RMB 11.0 million, or $1.6 million, at an interest rate of 3.85% per annum, with principal due on November 18, 2022. As of June 30, 2022, there was $1.6 million outstanding balance under the loan.

On November 16, 2018, the Company's subsidiary in China entered into a line of credit facility with Industrial and Commercial Bank of China. The purpose of the credit facility was to provide short-term borrowings. The Company could borrow up to approximately RMB 72.0 million or $10.3 million based on currency exchange rate between RMB and U.S. Dollar on November 16, 2018. The RMB 72.0 million consists of RMB 27.0 million for trade borrowings with a maturity date of December 31, 2021, and RMB 45.0 million for working capital borrowings or trade borrowings with a maturity date of September 13, 2022. During the three months ended December 31, 2021, the Company borrowed RMB 5.0 million, or $0.8 million, at an interest rate of 3.7% per annum, with principal due on September 12, 2022. As of June 30, 2022, the total outstanding balance of this loan was $0.5 million.

Accounts Receivable Factoring Agreement

On August 9, 2019, one of the Company's wholly-owned subsidiaries (the "Borrower") entered into a factoring agreement with the Hongkong and Shanghai Banking Corporation Limited (“HSBC”), whereby the Borrower assigns certain of its accounts receivable with recourse. This factoring agreement allows the Borrower to borrow up to 70% of the net amount of its eligible accounts receivable of the Borrower with a maximum amount of $30.0 million. The interest rate is based on one month London Interbank Offered Rate ("LIBOR") plus 1.75% per annum. The Company is the guarantor for this agreement. The Company is accounting for this transaction as a secured borrowing under the Transfers and Servicing of Financial Assets guidance. In addition, any cash held in the restricted bank account controlled by HSBC has a legal right of offset against the borrowing. This agreement, with certain financial covenants required, has no expiration date. On August 11, 2021, the Borrower signed an agreement with HSBC to decrease the borrowing maximum amount to $8.0 million with certain financial covenants required. Other terms remain the same. The Borrower was in compliance with these covenants as of June 30, 2022. As of June 30, 2022, there was no outstanding balance and the Company had unused credit of approximately $8.0 million.

Debt financing

In September 2021, Jireh Semiconductor Incorporated (“Jireh”) entered into a financing arrangement agreement with a company (“Lender”) for the lease and purchase of a machinery equipment manufactured by a supplier. The total purchase price of this machinery equipment was euro 12.0 million, or $12.8 million based on the currency exchange rate between the euro and U.S. Dollar on June 30, 2022. In April 2021, Jireh made a down payment of euro 6.0 million, representing 50% of the total purchase price of the equipment, to the supplier. In June 2022, the equipment was delivered to Jireh after Lender paid 40% of the total purchase price, for euro 4.8 million, to the supplier on behalf of Jireh. Based on the terms of the agreement between Jireh and Lender, after the installation and configuration of the equipment for its intended use, Lender will make the remaining 10% payment for the total purchase price and reimburse Jireh for the down payment made to the supplier. By that time, the title of the equipment will be transferred to Lendor. This agreement has a 5 years term, after which Jireh has the option to purchase the equipment for $1. Jireh is required to make a monthly payment of interest at an implied interest rate of 4.75% per annum to Lessor. Principal payment is required to be paid monthly after the completion of the title transfer. The financing arrangement is secured by this machneray equipment which had the carrying amount of $12.8 million as of June 30, 2022. As of June 30, 2022, the outstanding balance of this debt financing was $5.0 million.

Long-term bank borrowings

On August 18, 2021, Jireh entered into a term loan agreement with a financial institution (the "Bank") in an amount up to $45.0 million for the purpose of expanding and upgrading the Company’s fabrication facility located in Oregon. The obligation under the loan agreement is secured by substantially all assets of Jireh and guaranteed by the Company. The agreement has a 5.5 years term and matures on February 16, 2027. Jireh is required to make consecutive quarterly payments of principal and interest. The loan accrues interest based on adjusted LIBOR plus the applicable margin based on the outstanding balance of the loan. This agreement contains customary restrictive covenants and includes certain financial covenants that the Company is required to maintain. Jireh drew down $45.0 million on February 16, 2022. As of June 30, 2022, Jireh was in compliance with these covenants and the outstanding balance of this loan was $45.0 million.

On May 1, 2018, Jireh entered into a loan agreement with the Bank that provided a term loan in an amount of $17.8 million. The obligation under the loan agreement is secured by certain real estate assets of Jireh and guaranteed by the Company. The loan has a five-year term and matures on June 1, 2023. Beginning June 1, 2018, Jireh made consecutive monthly payments of principal and interest to the Bank. The outstanding principal shall accrue interest at a fixed rate of 5.04% per annum on the basis of a 360-day year. The loan agreement contains customary restrictive covenants and includes certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios. In August 2021, Jireh signed an amendment of this loan with the Bank to modify the financial covenants requirement to align with the new term loan agreement entered into on August 18, 2021 discussed above. The amendment was accounted for as a debt modification and no gain or loss was recognized. The Company was in compliance with these covenants as of June 30, 2022. As of June 30, 2022, the outstanding balance of the term loan was $14.2 million.

On August 15, 2017, Jireh entered into a credit agreement with the Bank that provided a term loan in an amount up to $30.0 million for the purpose of purchasing certain equipment for the fabrication facility located in Oregon. The obligation under the credit agreement is secured by substantially all assets of Jireh and guaranteed by the Company. The credit agreement has a five-year term and matures on August 15, 2022. In January 2018 and July 2018, Jireh drew down on the loan in the amount of $13.2 million and $16.7 million, respectively. Beginning in October 2018, Jireh is required to pay to the Bank on each payment date, the outstanding principal amount of the loan in monthly installments. The loan accrues interest based on an adjusted London Interbank Offered Rate ("LIBOR") as defined in the credit agreement, plus specified applicable margin in the range of 1.75% to 2.25%, based on the outstanding balance of the loan. The credit agreement contains customary restrictive covenants and includes certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios and fixed charge coverage ratio. In August 2021, Jireh signed an amendment of this loan with the Bank to modify the financial covenants requirement to align with the new term loan agreement entered into on August 18, 2021, discussed above. The amendment was accounted for as a debt modification and no gain or loss was recognized. The Company was in compliance with these covenants as of June 30, 2022. As of June 30, 2022, the outstanding balance of the term loan was $1.9 million.

At June 30, 2022, maturities of short-term debt and long-term debt were as follows (in thousands):

Year ending June 30,		
2023	$	25,638
2024		9,952
2025		9,999
2026		10,047
2027		12,348
Thereafter		234
Total principal of debt		68,218
Less: debt issuance costs		(169)
Total principal of debt, less debt issuance costs	$	68,049

	Short-term Debt		Long-term Debt		Total	
Principal amount	$	25,638	$	42,580	$	68,218
Less: debt issuance costs		(75)		(94)		(169)
Total debt, less debt issuance costs	$	25,563	$	42,486	$	68,049

8. Leases

The Company evaluates contracts for lease accounting at contract inception and assesses lease classification at the lease commencement date. Operating leases are included in operating lease right-of-use ("ROU") assets, operating lease liabilities and operating lease liabilities - long-term on the Company's consolidated balance sheets. Finance leases are included in property, plant and equipment, finance lease liabilities and finance lease liabilities-long-term on the consolidated balance sheets. The Company recognizes a ROU asset and corresponding lease obligation liability at the lease commencement date where the lease obligation liability is measured at the present value of the minimum lease payments. As most of the leases do not provide an implicit rate, the Company uses its incremental borrowing rate at lease commencement. The Company uses an interest rate commensurate with the interest rate to borrow on a collateralized basis over a similar term with an amount equal to the lease payments. Operating leases are primarily related to offices, research and development facilities, sales and marketing facilities, and manufacturing facilities. In addition, long-term supply agreements to lease gas tank equipment and purchase industrial gases are accounted for as operating leases. Lease agreements frequently include renewal provisions and require the Company to pay real estate taxes, insurance and maintenance costs. For operating leases, the amortization of the ROU asset and the accretion of its lease obligation liability result in a single straight-line expense recognized over the lease term. The finance lease is related to the machinery lease financing with a vendor. In addition, the finance lease related to the RMB 400.0 million of lease financing of the JV Company with YinHai Leasing Company and The Export-Import Bank of China was not included in the Company's Consolidated Balance Sheet at June 30, 2022 due to the deconsolidation of the JV Company on December 2, 2021. The Company does not record leases on the consolidated balance sheet with a term of one year or less.

The components of the Company's operating and finance lease expenses are as follows for the years presented (in thousands):

	Fiscal Year Ended June 30, 2022	Fiscal Year Ended June 30, 2021
Operating leases:		
Fixed rent expense	$ 6,262	$ 6,760
Variable rent expense	946	815
Finance lease:		
Amortization of equipment	908	2,200
Interest	976	2,168
Short-term leases:		
Short-term lease expenses	205	221
Total lease expenses	$ 9,297	$ 12,164

Supplemental balance sheet information related to the Company's operating and finance leases is as follows (in thousands, except lease term and discount rate):

	June 30, 2022	June 30, 2021
Operating Leases:		
ROU assets associated with operating leases	$ 23,674	$ 34,660
Finance Lease:		
Property, plant and equipment, gross	$ 4,831	$ 114,404
Accumulated depreciation	(136)	(96,470)
Property, plant and equipment, net	$ 4,695	$ 17,934
Weighted average remaining lease term (in years)		
Operating leases	7.42	8.44
Finance lease	5.00	1.72
Weighted average discount rate		
Operating leases	4.27 %	4.67 %
Finance lease	4.76 %	5.46 %

Supplemental cash flow information related to the Company's operating and finance lease is as follows (in thousands):

	Fiscal Year Ended June 30, 2022	Fiscal Year Ended June 30, 2021
Cash paid from amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 6,480	$ 6,496
Operating cash flows from finance lease	$ 976	$ 2,168
Financing cash flows from finance lease	$ 4,176	$ 16,451
Non-cash investing and financing information:		
Operating lease right-of-use assets obtained in exchange for lease obligations	$ 5,852	$ 5,585

Future minimum lease payments are as follows as of June 30, 2022 (in thousands):

	Operating Leases	Finance Leases
2023	$ 5,206	$ 993
2024	4,053	1,083
2025	3,222	1,083
2026	3,176	1,083
2027	3,147	1,076
Thereafter	10,337	—
Total minimum lease payments	29,141	5,318
Less amount representing interest	(4,413)	(584)
Total lease liabilities	$ 24,728	$ 4,734

9. Shareholders' Equity

Common Shares

The Company's Bye-laws, as amended, authorized the Company to issue 100,000,000 common shares with par value of $0.002. Each common share is entitled to one vote. The holders of common shares are also entitled to receive dividends whenever funds are legally available and when and if declared by the board of directors. No dividends had been declared as of June 30, 2022

In September 2017, the board of directors approved a repurchase program (the “Repurchase Program”) that allowed the Company to repurchase its common shares from the open market pursuant to a pre-established Rule 10b5-1 trading plan or through privately negotiated transactions up to an aggregate of $30.0 million. The amount and timing of any repurchases under the Repurchase Program depend on a number of factors, including but not limited to, the trading price, volume and availability of the Company's common shares. Shares repurchased under this program are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. From time to time, treasury shares may be reissued as part of the Company's stock-based compensation programs. Gains on re-issuance of treasury stock are credited to additional paid-in capital; losses are charged to additional paid-in capital to offset the net gains, if any, from previous sales or re-issuance of treasury stock. Any remaining balance of the losses is charged to retained earnings.

During fiscal year 2022, 2021 and 2020, the Company did not repurchase any shares pursuant to the repurchase program.

As of June 30, 2022, the Company had repurchased an aggregate of 6,784,648 shares for a total cost of $67.3 million, at an average price of $9.92 per share, excluding fees and related expenses, since inception of the program. No repurchased shares have been retired. Of the 6,784,648 repurchased shares, 167,395 shares with a weighted average repurchase price of $10.06 per share, were reissued at an average price of $5.00 per share for option exercises and vested restricted stock units (“RSU”). As of June 30, 2022, $13.4 million remain available under the share repurchase program.

10. Share-based Compensation

2018 Omnibus Incentive Plan

The 2009 Share Option/Share Issuance Plan (the "2009 Plan") was approved in September 2009 at the annual general meeting of shareholders in connection with the Company's IPO. At the annual general meeting of shareholders in November 2018, the 2009 Plan was approved to be terminated and the 2018 Omnibus Incentive Plan (the "2018 Plan") was effective. No further awards will be made under the 2009 Plan. The 2018 Plan authorized the board of directors to grant incentive share options, non-statutory share options and restricted shares to employees, directors, non-employee directors and consultants of the Company and its subsidiaries for up to 2,065,000 common shares. The 2018 Plan does not include an evergreen authorization Therefore, the Company is not permitted to increase the number of shares reserved in the share pool without obtaining further shareholder approval. Outstanding shares under the 2018 Plan and awards granted under the 2009 Plan that expire, are forfeited or cancelled or terminate prior to the issuance of the shares subject to those awards or are settled in cash will be available for subsequent issuance under the 2018 Plan. At the annual general meeting of shareholders in November 2021, the 2018 Plan was approved to increase by 1,000,000 shares to a total of 3,065,000 shares. As of June 30, 2022, 537,260 shares were available for grant under the 2018 Plan.

Beginning with the 2014 Annual Shareholders Meeting, on the date of each annual shareholders meeting, each individual who commences service as a non-employee Board member by reason of his or her election to the Board at such annual meeting and each individual who is to continue to serve as a non-employee Board member, whether or not that individual is standing for re-election to the Board at that particular annual meeting, will automatically be granted an award in the form of restricted share units covering that number of common shares determined by dividing one hundred twenty-five thousand dollars ($125,000) by the average fair market value per share for the ninety (90)-day period preceding the grant date, up to a maximum of 10,000 shares.

Under the 2018 Plan, incentive share options and RSU are to be granted at a price that is not less than 100% and nonstatutory share options are to be granted at not less than 85% of the fair value of the common shares, at the date of grant for employees and consultants. Options and RSUs generally vest over a four-year to five-year period, and are exercisable for a maximum period of ten years after the date of grant.

The fair value of RSU, including time-based restricted stock units and performance-based restricted stock units is based on the market price of the Company's share on the date of grant.

Time-based Restricted Stock Units ("TRSU")

The following table summarizes the Company's TRSU activities:

	Number of Restricted Stock Units		Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Recognition Period (Years)		Aggregate Intrinsic Value
Nonvested at June 30, 2019	906,341	$	14.09	1.62	$	8,465,225
Granted	505,440	$	8.51			
Vested	(455,893)	$	13.53			
Forfeited	(23,750)	$	13.19			
Nonvested at June 30, 2020	932,138	$	11.36	1.66	$	10,141,661
Granted	722,873	$	29.85			
Vested	(567,087)	$	15.70			
Forfeited	(34,400)	$	14.88			
Nonvested at June 30, 2021	1,053,524	$	21.60	1.73	$	32,016,594
Granted	597,381	$	45.83			
Vested	(410,670)	$	20.54			
Forfeited	(70,626)	$	26.79			
Nonvested at June 30, 2022	1,169,609	$	34.03	1.73	$	38,994,764

Performance-based Restricted Stock Units ("PRSU")

In March each year since fiscal year 2017, the Company granted PRSU to certain personnel. The number of shares to be ultimately earned under the PRSU is determined based on the level of attainment of predetermined financial goals. The PRSU vests in four equal annual installments from the first anniversary date after the grant date if certain predetermined financial goals were met. The Company recorded $4.6 million, $2.3 million and $1.5 million of expenses for these PRSUs during the years ended June 30, 2022, 2021 and 2020, respectively.

During the quarter ended June 30, 2019, the Company announced an incentive program. Under this program, each participant's award is denominated in stock and subject to achievement of certain objective goals within certain timelines. In June 2020, the Company believed it was most likely that predetermined goal measures would be met. Therefore, the Company reported such expenses in the other current liabilities line on the condensed consolidated balance sheets as the amount of bonus is to be settled in variable number of RSU's at the completion of the objective goals. Such non-cash compensation expense was recorded as part of share-based compensation expense in the condensed consolidated statements of operations. As of June 30, 2022 and 2021, the Company recorded nil and $0.1 million such expenses in the other current liabilities, respectively. During the fiscal years ended June 30, 2022, 2021 and 2020, the Company recorded $0.3 million, $3.1 million and $0.6 million of non-cash compensation expense, respectively. As of June 30, 2022, the Company granted RSUs valued at $4.0 million to participants, which were fully vested due to achievement of certain objective measures.

The following table summarizes the Company's PRSU activities:

	Number of Performance-based Restricted Stock Units	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Recognition Period (Years)	Aggregate Intrinsic Value
Nonvested at June 30, 2019	596,724	$ 13.95	1.88	$ 5,573,402
Granted	155,000	$ 7.36		
Vested	(110,659)	$ 16.68		
Forfeited	(298,290)	$ 11.32		
Nonvested at June 30, 2020	342,775	$ 12.38	1.60	$ 3,729,392
Granted	165,500	$ 36.27		
Vested	(148,211)	$ 14.24		
Forfeited	(6,240)	$ 17.23		
Nonvested at June 30, 2021	353,824	$ 22.69	1.74	$ 10,752,711
Granted	194,000	$ 48.65		
Vested	(151,199)	$ 19.44		
Forfeited	(7,250)	$ 40.33		
Nonvested at June 30, 2022	389,375	$ 36.56	1.85	$ 12,981,763

Market-based Restricted Stock Units ("MSUs")

In December 2021, the Company granted 1.0 million market-based restricted stock units ("MSUs") to its certain personnel. The number of shares to be earned at the end of performance period is determined based on the Company's achievement of specified stock prices and revenue thresholds during the performance period from January 1, 2022 to December 31, 2024 as well as the recipients remaining in continuous service with the Company through such period. The MSU vests in four equal annual installments after the end of performance period. The Company estimated the grant date fair values of its MSU with derived service periods of 4.1 to 7.1 years using a Monte-Carlo simulation model with the following assumptions: Risk-free interest rate of 1.0%, expected term of 3.1 years, expected volatility of 62.8% and dividend yield of 0%. The Company recorded approximately $4.5 million expenses for these MSUs during the fiscal year ended June 30, 2022.

During the quarter ended September 30, 2018, the Company granted 1.3 million market-based restricted stock units ("MSUs") to certain personnel. The number of shares to be earned at the end of the performance period is determined based on the Company's achievement of specified stock prices and revenue thresholds during the performance period from January 1, 2019 to December 31, 2021 as well as the recipients remaining in continuous service with the Company through such period.

The MSUs vest in four equal annual installments after the end of performance period. On August 31, 2020, the Compensation Committee of the Board approved a modification of the terms of MSU to (i) extend the performance period through December 31, 2022 and (ii) change the commencement date for the four-year time-based service period to January 1, 2023. The modified MSUs were valued immediately before and after the modification, using Morte Carlo simulation pricing model. The Morte Carlo simulation pricing model applied the following assumptions for pre-modification conditions: risk-free interest rate of 0.13%, expected term of 1.3 years, expected volatility of 66.7% and dividend yield of 0%; and for post-modification conditions: risk-free interest rate of 0.14%, expected term of 2.3 years, expected volatility of 59.1% and dividend yield of 0%. The fair value of these MSUs was recalculated to reflect the change as of August 31, 2020 and the unrecognized compensation amount was adjusted to reflect the increase in fair value. The Company recorded approximately $1.6 million, $1.2 million and $0.6 million of expense for these MSUs during the years ended June 30, 2022, 2021 and 2020, respectively.

Stock Option

The following table summarizes the Company's stock option activities:

	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at June 30, 2019	876,478	$ 10.98	3.06	
Granted	—	$ —		
Exercised	(2,500)	$ 10.50		$ 4,726
Canceled or forfeited	(230,000)	$ 17.11		
Outstanding at June 30, 2020	643,978	$ 8.79	2.89	
Granted	—	$ —		
Exercised	(156,103)	$ 11.31		$ 1,272,291
Canceled or forfeited	—	$ —		
Outstanding at June 30, 2021	487,875	$ 7.99	2.32	
Granted	—	$ —		
Exercised	(98,000)	$ 9.15		$ 3,936,675
Canceled or forfeited	—	$ —		
Outstanding at June 30, 2022	389,875	$ 7.70	1.53	$ 9,997,364
Options vested and expected to vest	389,875	$ 7.70	1.53	$ 9,997,364
Exercisable at June 30, 2022	389,875	$ 7.70	1.53	$ 9,997,364

The aggregate intrinsic value for options outstanding at June 30, 2022 in the table above is based on the Company’s common stock closing price on June 30, 2022.

The 2018 Employee Share Purchase Plan

At the annual general meeting of shareholders in November 2018, the 2018 Employee Share Purchase Plan (“Purchase Plan” or “ESPP”) Plan was approved, under which 1,430,000 common shares are available for issuance. The Purchase Plan does not include an evergreen authorization, therefore the Company is not permitted to increase the number of shares reserved in the share pool without obtaining further shareholder approval. At the general meeting of shareholders in November 2021, the ESPP Plan was approved to increase from 1,430,000 shares to 2,500,000 shares. The Purchase Plan provided for a series of overlapping offering periods with a duration of 24 months, generally beginning on May 15 and November 15 of each year. The Purchase Plan allows employees to purchase common shares through payroll deductions of up to 15% of their eligible compensation. Such deductions will accumulate over a six-month accumulation period without interest. After such accumulation period, common shares will be purchased at a price equal to 85% of the fair market value per share on either the first day of the offering period or the last date of the accumulation period, whichever is less. The maximum number of shares that may be purchased by a participant on any purchase date may not exceed 875 shares for a total of 3,500 shares per a 24-

month offering period. In addition, no participant may purchase more than $25,000 worth of common stock in any one calendar year period. No more than 300,000 common shares may be purchased by all participants on any purchase date.

The ESPP is compensatory and results in compensation expense. The fair values of common shares to be issued under the ESPP were determined using the Black-Scholes option pricing model with the following assumptions:

	Year Ended June 30,		
	2022	2021	2020
Volatility rate	66.4% - 69.9%	63.1% - 68.5%	46.4% - 58.3%
Risk-free interest rate	0.3% - 2.1%	0.1% - 0.2%	0.2% - 1.6%
Expected term	1.3 years	1.3 years	1.3 years
Dividend yield	—%	—%	—%

The weighted-average estimated fair value of employee stock purchase rights granted pursuant to the ESPP during the years ended June 30, 2022, 2021 and 2020 was $16.48, $11.11 and $4.33 per share, respectively.

Share-based Compensation Expenses

The total share-based compensation expense related to TRSU, PSUs, MSUs, stock options and ESPP described above, recognized in the consolidated statements of operations for the years presented was as follows:

	Year Ended June 30,		
	2022	2021	2020
	(in thousands)		
Cost of goods sold	$ 5,125	$ 1,756	$ 1,530
Research and development	7,049	5,352	2,895
Selling, general and administrative	19,150	8,216	6,029
	$ 31,324	$ 15,324	$ 10,454

Total unrecognized share-based compensation expense as of June 30, 2022 was $84.3 million including estimated forfeitures, which is expected to be recognized over a weighted-average period of 3.2 years.

11. Employee Benefit Plans

The Company maintains a 401(k) retirement plan for the benefit of qualified employees in the U.S. Employees who participate may elect to make salary deferral contributions to the plan up to 100% of the employees' eligible salary subject to annual Internal Revenue Code maximum limitations. The employer's contribution is discretionary. Effective from April 1, 2022, the Company begins to match 50% of employee contribution up to 4% of eligible compensation for a 2% maximum match. During the fiscal year ended June 30, 2022, the Company made employer match contributions of $0.3 million.

The Company makes mandatory contributions for its employees to the respective local governments in terms of retirement, medical insurance and unemployment insurance, where applicable, according to labor and social security laws and regulations of the countries and areas in which the Company operates. The retirement contribution rate is 7.7% in the U.S., 14.0% to 16.0% in China, and 6.0% in Taiwan. The Company has no obligations for the payment of such social benefits beyond the required contributions as set out above.

12. Income Taxes

The provision for income taxes is comprised of:

	Year Ended June 30,		
	2022	2021	2020
		(in thousands)	
U.S. federal taxes:			
Current	$ 645	$ 31	$ (1,673)
Deferred	2,260	1,955	22
Non-U.S. taxes:			
Current	7,749	2,344	1,940
Deferred	28,599	(396)	58
State taxes, net of federal benefit:			
Current	5	1	1
Total provision for income taxes	$ 39,258	$ 3,935	$ 348

The reconciliation of the federal statutory income tax rate to our effective income tax rate is as follows (in percentage):

	Year Ended June 30,		
	2022	2021	2020
United States statutory rate	21.0 %	21.0 %	21.0 %
Stock-based compensation	0.0	0.1	—
Foreign taxes, net	(14.3)	(14.4)	(36.1)
Outside basis difference on equity method investment	1.2	—	—
Research and development credit	(0.3)	(2.4)	8.0
Non-deductible expenses	0.5	2.4	(1.0)
U.S. Tax Act deferred tax re-measurement	—	—	6.2
Foreign Derived Intangible Income Deduction	(0.3)	—	—
Other	0.1	(0.2)	—
	7.9 %	6.5 %	(1.9)%

The domestic and foreign components of income before taxes are:

	Year Ended June 30,		
	2022	2021	2020
		(in thousands)	
U.S. operations	$ 16,684	$ 9,622	$ 3,549
Non-U.S. operations	478,386	50,602	(21,458)
Loss before income taxes	$ 495,070	$ 60,224	$ (17,909)

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets and liabilities are as follows:

	June 30, 2022	June 30, 2021
	(in thousands)	
Deferred tax assets:		
Accrued compensation	$ 5,742	$ 3,954
Net operating loss carryforwards	61	22,539
Depreciation	4,365	7,924
Tax credits	15,079	15,550
Operating lease liabilities	5,807	7,292
Capitalized intangible assets	—	9,982
Accruals and reserves	643	1,113
Total deferred tax assets	31,697	68,354
Valuation allowance	(5,755)	(41,474)
Total deferred tax assets, net of valuation allowance	25,942	26,880
Deferred tax liabilities:		
Depreciation and amortization	(18,909)	(17,193)
Right of use assets	(5,579)	(6,968)
Investments	(29,619)	—
Total deferred tax liabilities	(54,107)	(24,161)
Net deferred tax assets/(liabilities)	$ (28,165)	$ 2,719

The breakdown between deferred tax assets and liabilities is as follows:

	June 30, 2022	June 30, 2021
	(in thousands)	
Long-term deferred tax assets	$ 592	$ 5,167
Long-term deferred tax liabilities	(28,757)	(2,448)
Net deferred tax assets/(liabilities)	$ (28,165)	$ 2,719

The Company's valuation allowance related to deferred income taxes as reflected in the consolidated balance sheets was $5.8 million and $41.5 million as of June 30, 2022 and 2021, respectively. The change in valuation allowance for June 30, 2022 and 2021 was a decrease of $35.7 million and an increase of $3.6 million, respectively.

At June 30, 2022 and 2021, the Company provided a valuation allowance for its state research and development credit carryforward deferred tax assets of $5.8 million for both years, as it generated more state tax credits each year than it can utilize. The Company intends to maintain a valuation allowance equal to the state research and development credit carryforwards in excess of the state net deferred tax liabilities on all other state book/tax differences and net operating loss carryforward.

At June 30, 2021, the Company provided a valuation allowance mainly for the net operating loss, fixed asset and intangible asset related to deferred tax assets of the JV Company totaling $35.7 million. The valuation allowance related to the deferred tax assets of the JV Company was reduced to $0 at June 30, 2022 as a result of the deconsolidation of the JV Company in December 2021.

At June 30, 2022, the Company had federal research and development tax credit carryforwards of approximately $8.9 million. The federal tax credits begin to expire in 2030, if not utilized. At June 30, 2022, the Company had $0.9 million of state net operating loss carryforwards and had tax credit carryforwards of approximately $7.8 million. Approximately $0.2

million of the state tax credits begin to expire in 2023, if not utilized. The remaining $7.6 million of the state tax credits carryforward indefinitely.

The Company has not provided for withholding taxes on the undistributed earnings of its foreign subsidiaries because it intends to reinvest such earnings indefinitely. However, we have recorded a deferred tax liability of $29.6 million at June 30, 2022 related to our investment in the JV Company. As of June 30, 2022, the cumulative amount of undistributed earnings of its foreign entities considered permanently reinvested is $314.7 million. The determination of the unrecognized deferred tax liability on these earnings is not practicable. Should the Company decide to remit this income to its Bermuda parent company in a future period, its provision for income taxes may increase materially in that period.

A reconciliation of the beginning and ending amount of unrecognized tax benefits from July 1, 2019 to June 30, 2022 is as follows:

	Year Ended June 30,		
	2022	2021	2020
	(in thousands)		
Balance at beginning of year	$ 7,645	$ 7,126	$ 7,150
Additions based on tax positions related to the current year	1,121	677	333
Reductions based on tax positions related to prior years	(40)	(41)	(114)
Reductions due to lapse of applicable statute of limitations	(117)	(117)	(243)
Balance at end of year	$ 8,609	$ 7,645	$ 7,126

At June 30, 2022, the total unrecognized tax benefits of $8.6 million included $6.6 million of unrecognized tax benefits that have been netted against the related deferred tax assets. The remaining $2.0 million of unrecognized tax benefits was recorded within long-term income tax payable on the Company's consolidated balance sheet as of June 30, 2022. The Company cannot reasonably estimate the timing and amount of potential cash settlements on the unrecognized tax benefits.

The total unrecognized tax benefits of $8.6 million at June 30, 2022 included $5.6 million that, if recognized, would reduce the effective income tax rate in future periods. It is reasonably possible that the Company will recognize approximately $0.01 million reduction to its uncertain tax positions during the next twelve months, related to potential expiration of the relevant statute of limitations.

The Company recognizes interest and penalties related to uncertain tax positions in income tax expense. To the extent accrued interest and penalties do not ultimately become payable, amounts accrued will be reduced and reflected as a reduction of the overall income tax provision in the period that such determination is made. The amount of interest and penalties accrued at June 30, 2022 was $0.2 million, of which $32 thousand was recognized in the year ended June 30, 2022. The amount of interest and penalties accrued at June 30, 2021 was $0.1 million, of which $5 thousand was recognized in the year ended June 30, 2021.

The Company files its income tax returns in the United States and in various foreign jurisdictions. The tax years 2001 to 2022 remain open to examination by U.S. federal and state tax authorities. The tax years 2014 to 2022 remain open to examination by foreign tax authorities.

The Company's income tax returns are subject to examinations by the Internal Revenue Service and other tax authorities in various jurisdictions. In accordance with the guidance on the accounting for uncertainty in income taxes, the Company regularly assesses the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of its provision for income taxes. These assessments can require considerable estimates and judgments. If the Company's estimate of income tax liabilities proves to be less than the ultimate assessment, then a further charge to expense would be required. If events occur and the payment of these amounts ultimately proves to be unnecessary, the reversal of the liabilities would result in tax benefits being recognized in the period when the Company determines the liabilities are no longer necessary.

U.S. Tax Cuts and Jobs Act, Enacted December 22, 2017

On December 22, 2017, the United States enacted tax legislation commonly known as the Tax Cuts and Jobs Act (“the Tax Act”), which significantly changed the existing U.S. tax laws, including, but not limited to, (1) a reduction in the corporate tax rate from 35% to 21%, (2) a move from a worldwide tax system toward a territorial system through a “participation exemption” deduction for certain foreign-source dividends, (3) eliminating the corporate alternative minimum tax (AMT) and changing how existing AMT credits can be realized, (4) bonus depreciation that allows for full expensing of qualified property,

(5) creating a new limitation on deductible interest expense and (6) changing rules related to uses and limitations of net operating loss carryforwards created in tax years beginning after December 31, 2017.

The Company is not currently subject to the Base Erosion and Anti-Abuse (BEAT) tax, which is a tax imposed on certain entities who make payments to their non U.S. affiliates, where such payments reduce the U.S. tax base. The BEAT tax is imposed at a rate of 10% on Adjusted Taxable Income, excluding certain payments to foreign related entities. It is an incremental tax over and above the corporate income tax and is recorded as a period cost. It is possible that this tax could be applicable in future periods, which would cause an increase to the effective tax rate and cash taxes.

U.S. Coronavirus Aid, Relief and Economic Security Act" ("CARES Act"), Enacted March 27, 2020

On March 27, 2020, the United States enacted the CARES Act, which made the changes to existing U.S. tax laws, including, but not limited to, (1) allowing U.S. federal net operating losses originated in the 2018, 2019 or 2020 tax years to be carried back five years to recover taxes paid based upon taxable income in the prior five years, (2) eliminated the 80% of taxable income limitation on net operating losses for the 2018, 2019 and 2020 tax years (the 80% limitation will be reinstated for tax years after 2020), (3) accelerating the refund of prior year alternative minimum tax credits, (4) modifying the bonus depreciation for qualified improvement property and (5) modifying the limitation on deductible interest expense.

As a result of the ability to carryback net operating losses from the June 2018 and June 2019 years to the June 2015 to June 2017 tax years, net operating losses which were previously tax-effected using the current 21% U.S. federal tax rate were revalued to the U.S. tax rates in effect for the June 2015 to June 2017 tax years due to the ability of receiving tax refunds for the taxes paid in these years. Accordingly, we reported a discrete tax benefit of $1.1 million in the third quarter of fiscal year 2020 related to the re-measurement of the net operating losses that could be realized via the new net operating loss carryback provisions.

"U.S. Consolidated Appropriations Act, 2021" ("CAA 2021"), Enacted December 27, 2020

On December 27, 2020, the United States enacted the Consolidated Appropriations Act, 2021, which made changes to existing U.S. tax laws. There was no material impact of the tax law changes included in the Consolidated Appropriations Act, 2021 to the Company.

"The American Rescue Plan Act of, 2021", Enacted March 11, 2021

On March 11, 2021, the United States enacted the American Rescue Plan Act of 2021, which made changes to existing U.S. tax laws. There was no material impact of the tax law changes included in the American Rescue Plan Act of 2021 to the Company.

"The Chip and Science Act of 2022", Enacted August 2, 2022

In August 2022 the U.S. enacted the Chip and Science Act of 2022 (the Chips Act). The Chips Act provides incentives to semiconductor chip manufacturers in the United States, including providing a 25% manufacturing investment credits for investments in semiconductor manufacturing property placed in service after December 31, 2022, for which construction begins before January 1, 2027. Property investments qualify for the 25% credit if, among other requirements, the property is integral to the operation of an advanced manufacturing facility, defined as having a primary purpose of manufacturing semiconductors or semiconductor manufacturing equipment. Currently, we are evaluating the impact of the Chips Act to us.

Altera Litigation

On July 27, 2015, in Altera Corp. v. Commissioner, the U.S. Tax Court issued an opinion related to the treatment of stock-based compensation expense in an intercompany cost-sharing arrangement. In the July 2015 ruling, the Tax Court concluded that the sharing of the cost of employee stock compensation in a company's cost-sharing arrangement was invalid under the U.S. Administrative Procedures Act. In June 2019, a panel of the Ninth Circuit of the U.S. Court of Appeals reversed this decision. In July 2019, Altera petitioned U.S. Court of Appeals for the Ninth Circuit to hold an en banc rehearing of the case. The petition was subsequently denied by the Ninth Circuit. Altera appealed the case to the U.S. Supreme Court in February 2020, but the U.S. Supreme Court declined to hear the case in June 2020, leaving intact the U.S. Court of Appeals for the Ninth Circuit's decision. AOS has not recorded any benefit related to the Altera Corporation Tax Court decision in any period through June 2022. The Company will continue to monitor ongoing developments and potential impact to its financial statements.

13. Segment and Geographic Information

The Company is organized as, and operates in, one operating segment: the design, development and supply of power semiconductor products for computing, consumer electronics, communication and industrial applications. The chief operating decision-maker is the Chief Executive Officer. The financial information presented to the Company's Chief Executive Officer is on a consolidated basis, accompanied by information about revenue by customer and geographic region, for purposes of evaluating financial performance and allocating resources. The Company has one business segment, and there are no segment managers who are held accountable for operations, operating results and plans for products or components below the consolidated unit level. Accordingly, the Company reports as a single operating segment.

The Company sells its products primarily to distributors in the Asia Pacific region, who in turn sell these products to end customers. Because the Company's distributors sell their products to end customers which may have a global presence, revenue by geographical location is not necessarily representative of the geographical distribution of sales to end user markets.

The revenue by geographical location in the following tables is based on the country or region in which the products were shipped to:

	Year Ended June 30,		
	2022	2021	2020
	(in thousands)		
Hong Kong	$ 630,238	$ 537,553	$ 390,478
China	120,978	107,325	64,058
South Korea	11,802	5,497	3,303
United States	12,470	5,492	4,465
Other countries	2,064	1,035	2,605
	$ 777,552	$ 656,902	$ 464,909

During the fiscal year ended June 30, 2022, the Company corrected an immaterial error to reduce revenues in Hong Kong by $0.5 million, and to increase the revenues in China by $0.5 million for the fiscal year ended June 30, 2021.

The following is a summary of revenue by product type:

	Year Ended June 30,		
	2022	2021	2020
	(in thousands)		
Power discrete	$ 545,135	$ 482,718	$ 391,941
Power IC	220,882	161,726	66,360
Packaging and testing services	11,535	12,458	6,608
	$ 777,552	$ 656,902	$ 464,909

Long-lived assets, net consisting of property, plant and equipment and land use rights, net, as well as operating lease right-of-use assets, net by geographical area are as follows:

	June 30,	
	2022	2021
	(in thousands)	
China	$ 105,326	$ 350,387
United States	232,731	118,756
Other countries	4,283	2,494
	$ 342,340	$ 471,637

14. Restricted Net Assets

Laws and regulations in China permit payments of dividends by the Company's subsidiaries in China only out of their retained earnings, if any, as determined in accordance with China accounting standards and regulations. Each China subsidiary is also required to set aside at least 10% of its after-tax profit, if any, based on China accounting standards each year to its statutory reserves until the cumulative amount of such reserves reaches 50% of its registered capital. As a result of these China laws and regulations, the Company's China subsidiaries are restricted in their abilities to transfer a portion of their net assets to the Company. As of June 30, 2022 and 2021, such restricted portion amounted to approximately $92.4 million and $209.9 million, or 10.8% and 50.4%, of our total consolidated net assets attributable to the Company, respectively. As the Company's China subsidiaries are not revenue generating operating units, the Company does not expect to repatriate funds in the form of dividends, loans or advances from its China subsidiaries for working capital and other funding purposes.

15. Commitments and Contingencies

Purchase commitments

As of June 30, 2022 and 2021, the Company had approximately $89.9 million and $81.8 million, respectively, of outstanding purchase commitments primarily for purchases of semiconductor raw materials, wafers, spare parts, packaging and testing services and others.

As of June 30, 2022 and 2021, the Company had approximately $63.4 million, and $90.0 million, respectively, of commitments for the purchase of property and equipment.

Other commitments

See Notes 1, 7 and 8 to the Consolidated Financial Statements contained in this annual Report on Form 10-K for descriptions of commitments including Joint Venture, debt and leases.

Contingencies and indemnities

The Company has in the past, and may from time to time in the future, become involved in legal proceedings arising from the normal course of business activities. The semiconductor industry is characterized by frequent claims and litigation, including claims regarding patent and other intellectual property rights as well as improper hiring practices. Irrespective of the validity of such claims, the Company could incur significant costs in the defense of such claims and suffer adverse effects on its operations.

As previously disclosed, U.S. Department of Justice (“DOJ”) commenced an investigation into the Company’s compliance with export control regulations relating to its business transactions with Huawei and its affiliates (“Huawei”), which were added to the “Entity List” by the Department of Commerce (“DOC”) in May 2019. The Company is cooperating fully with federal authorities in the investigation. The Company has continued to respond to inquiries and requests from DOJ for documents and information relating to the investigation, and the matter is currently pending at DOJ, and DOJ has not provided the Company with any specific timeline or indication as to when the investigation will be concluded or resolved. In connection with this investigation, DOC previously requested the Company to suspend shipments of its products to Huawei. The Company complied with such request, and the Company has not shipped any product to Huawei after December 31, 2019. The Company continues to work with DOC to resolve this issue and requested DOC to grant permission to reinstate the Company’s shipments to Huawei. As part of this process and in response to DOC’s request, the Company provided certain documents and materials relating to the Company’s supply chain and shipment process to DOC, and DOC is currently reviewing this matter. DOC has not informed the Company of any specific timeline or schedule under which DOC will provide a response to the Company’s request. Given the case is in still ongoing and neither DOJ nor DOC have provided the Company with any clear indication of the timing and schedule for the investigation, the Company cannot estimate the reasonably possible loss or range of loss that may occur. Also, the Company is unable to predict the duration, scope, result or related costs of the investigation, although the Company expects to incur additional professional fees as a result of this matter. In addition, the Company is unable to predict what, if any, further action that may be taken by the government in connection with the investigation, or what, if any, penalties, sanctions or remedial actions may be sought.

The Company is a party to a variety of agreements that it has contracted with various third parties. Pursuant to these agreements, the Company may be obligated to indemnify another party to such an agreement with respect to certain matters. Typically, these obligations arise in the context of contracts entered into by the Company, under which the Company customarily agrees to hold the other party harmless against losses arising from a breach of representations and covenants related to such matters as title to assets sold, certain intellectual property rights, specified environmental matters and certain income taxes. In these circumstances, payment by the Company is customarily conditioned on the other party making a claim pursuant to the procedures specified in the particular contract, which procedures typically allow the Company to challenge the other party's claim. Further, the Company's obligations under these agreements may be limited in time and/or amount, and in some instances, the Company may have recourse against third parties for certain payments made by it under these agreements. The Company has not historically paid or recorded any material indemnifications, and no accrual was made at June 30, 2022 and 2021.

The Company has agreed to indemnify its directors and certain employees as permitted by law and pursuant to its Bye-laws, and has entered into indemnification agreements with its directors and executive officers. The Company has not recorded a liability associated with these indemnification arrangements, as it historically has not incurred any material costs associated with such indemnification obligations. Costs associated with such indemnification obligations may be mitigated by insurance coverage that the Company maintains. However, such insurance may not cover any, or may cover only a portion of, the amounts the Company may be required to pay. In addition, the Company may not be able to maintain such insurance coverage at reasonable cost, if at all, in the future.

Environmental matters

The Company is subject to various federal, state, local, and foreign laws and regulations governing environmental matters, including the use, handling, discharge, and disposal of hazardous materials. The Company believes that it has been in material compliance with applicable environmental regulations and standards. Complying with current laws and regulations has not had a material adverse effect on the Company’s financial condition and results of operations. However, it is possible that additional environmental issues may arise in the future, which the Company cannot currently predict.

16. Cybersecurity Incident

In April 2022, the Company became aware of a cybersecurity incident involving unauthorized access to one email account at the Company, which caused the Company to make payments to unauthorized bank accounts. As a result, the Company recorded a loss of $1.5 million due to the incident for the three months ended March 31, 2022. The financial impact of this incident was not material, and there were no changes to previously released financial results or financial statements. Immediately following the discovery, the Company commenced an investigation, contained the incident and implemented additional protective measures and internal control policies and procedures. The Company has also retained a professional cybersecurity investigation firm to conduct a full forensic analysis of the incident, and concluded that there were no evidence of malware, persistence mechanisms or other compromised exchange on-premises accounts within the Company's environment. In addition, there was no evidence to suggest that these accounts were accessed via the user agent that has the capability to synchronize or download email messages to the user’s local host. This incident appears to be isolated and its financial impact identified to date was not material. The Company believes that it had not incurred other damages and losses based on the conclusion of the full investigation.

SCHEDULE II

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
VALUATION AND QUALIFYING ACCOUNTS
(in thousands)

	Allowance for Doubtful Accounts	Allowance for Price Adjustments	Allowance for Deferred Tax Assets
June 30, 2019	$ 30	$ 24,075	$ 35,420
Additions	—	140,413	2,407
Reductions	—	(134,396)	—
June 30, 2020	$ 30	$ 30,092	$ 37,827
Additions	—	178,902	3,647
Reductions	—	(196,579)	—
June 30, 2021	$ 30	$ 12,415	$ 41,474
Additions	—	170,651	—
Reductions	—	(164,335)	(35,719)
June 30, 2022	$ 30	$ 18,731	$ 5,755

(b) Index to Exhibits:

Number	Description
3.1	Memorandum of Association of Registrant (incorporated by reference to Exhibit 3.1 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)
3.2	Amended and Restated Bye-laws of Registrant (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed with the Commission on November 12, 2015)
3.3	Amendment No. 1 to Amended and Restated Bye-Laws of Registrant (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed with the Commission on November 14, 2017)
4.1	Form of Common Share Certificate (incorporated by reference to Exhibit 4.2 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)
10.7††	Foundry Agreement dated as of January 10, 2002 between the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.16 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)
10.8††	First Addendum to Foundry Agreement dated as of July 28, 2005 between the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.17 from Registration Statement on Form F-1 (File No. 333-165823) initially filed with the Commission on March 31, 2010)
10.9††	Second Addendum to Foundry Agreement dated as of April 11, 2007 between the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.18 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)
10.10††	Foundry Service Agreement dated as of November 2, 2009 between Alpha & Omega Semiconductor (Macau), Ltd. and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.6 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)
10.11	Non-Exclusive Distributor Agreement dated as of July 27, 2010 between Alpha & Omega Semiconductor (Hong Kong) Limited and Frontek Technology Corporation (incorporated by reference to Exhibit 4.17 from Annual Report on Form 20-F (File No. 001-34717) filed with the Commission on September 2, 2010)
10.12††	Supplement to Non-Exclusive Distributor Agreement dated as of July 27, 2010 between Alpha & Omega Semiconductor (Hong Kong) Limited and Frontek Technology Corporation (incorporated by reference to Exhibit 4.18 from Annual Report on Form 20-F (File No. 001-34717) filed with the Commission on September 2, 2010)
10.13††	First Amendment of Supplement to Distribution Agreement dated as of April 21, 2011 between Alpha & Omega Semiconductor (Hong Kong) Limited and Frontek Technology Corporation(incorporated by reference to Exhibit 10.15 from Annual Report Form 10-K (File No. 001-34717) filed with the Commission on September 9, 2011)
10.14	Supplement to Distribution Agreement dated as of July 27, 2010 between the Registrant and Frontek Technology Corporation (incorporated by reference to Exhibit 10.1 from Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on February 6, 2015)
10.15	Non-Exclusive Distributor Agreement dated as of July 27, 2010 between Alpha & Omega Semiconductor (Hong Kong) Limited and Promate Electronic Co., Ltd. (incorporated by reference to Exhibit 4.19 from Annual Report on Form 20-F (File No. 001-34717) filed with the Commission on September 2, 2010)
10.16††	Supplement to Non-Exclusive Distributor Agreement dated as of July 27, 2010 between Alpha & Omega Semiconductor (Hong Kong) Limited and Promate Electronic Co., Ltd. (incorporated by reference to Exhibit 4.20 from Annual Report on Form 20-F (File No. 001-34717) filed with the Commission on September 2, 2010)
10.17††	First Amendment of Supplement to Distribution Agreement dated as of April 21, 2011 between Alpha & Omega Semiconductor (Hong Kong) Limited and Promate Electronic Co., Ltd. (incorporated by reference to Exhibit 10.18 from Annual Report Form 10-K (File No. 001-34717) filed with the Commission on September 9, 2011)
10.18	Supplement to Distribution Agreement dated as of July 27, 2010 between the Registrant and Promate Electronic Co., Ltd (incorporated by reference to Exhibit 10.2 from Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on February 6, 2015)

10.19	Lease dated as of December 23, 2009 between Alpha and Omega Semiconductor Incorporated and OA Oakmead II, LLC (incorporated by reference to Exhibit 10.19 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)
10.20	Guarantee dated as of January 5, 2010 between the Registrant and OA Oakmead II, LLC (incorporated by reference to Exhibit 10.20 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)
10.21(+)	Form of Employment Agreement between the Registrant and Mike F. Chang (incorporated by reference to Exhibit 10.13 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)
10.22(+)	Form of Retention Agreement (incorporated by reference to Exhibit 10.14 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)
10.24	Third Addendum to Foundry Agreement dated as of March 6, 2012 by and among the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.34 from Annual Report on Form 10-K (File No.: 001-34717) filed with the Commission on August 31, 2012)
10.25(+)	Amended Form of Restricted Share Unit Issuance Agreement (incorporated by reference to Exhibit 10.35 from Annual Report on Form 10-K (File No.: 001-34717) filed with the Commission on August 31, 2012)
10.27(+)	Form of Restricted Share Unit Agreement (incorporated by reference to Exhibit 10.3 from Quarterly Report on Form 10-Q (File No: 001-34717) filed with the Commission on May 9, 2014)
10.28††	Joint Venture Contract on Incorporation of Chongqing Alpha and Omega Semiconductor Limited, dated as of March 29, 2016, among the Registrant, certain subsidiaries of the Registrant, Chongqing Strategic Emerging Industry Equity Investment Fund Partnership (LP), and Chongqing Liangjiang New Area Strategic Emerging Industry Equity Investment Fund Partnership (LP) (English Translation) (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 10, 2016)
10.29 (+)	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on February 9, 2017)
10.30††	Engineering, Procurement and Construction Contract dated January 10, 2017 between Chongqing Alpha and Omega Semiconductor Limited and The IT Electronics Eleventh Design & Research Institute Scientific and Technological Engineering Corporation Limited (the "EPC Contract") (English Translation) (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 4, 2017)
10.31††	Amendment No. 1 to EPC Contract effective as of January 10, 2017 (English Translation) (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 4, 2017)
10.32*††	Financing Lease Contract, dated May 9, 2018, by and between Chongqing Alpha and Omega Semiconductor Limited and Chongqing YinHai Financing Lease Co., Ltd. (English Translation) (incorporated by reference to Exhibit 10.38 from Annual Report on Form 10-K (File No. 001-34717) filed with the Commission on August 23, 2018)
10.33*††	Real Estate Mortgage Contract, dated May 14, 2018, by and between Chongqing Alpha and Omega Semiconductor Limited and the Export-Import Bank of China (English Translation) (incorporated by reference to Exhibit 10.39 from Annual Report on Form 10-K (File No. 001-34717) filed with the Commission on August 23, 2018)
10.34	Second Supplemental Agreement to the Joint Venture Contract on Incorporation of Chongqing Alpha and Omega Semiconductor Limited (English Translation) (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 11, 2020)
10.35	Third Supplemental Agreement to the Joint Venture Contract on Incorporation of Chongqing Alpha and Omega Semiconductor Limited (English Translation) (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 11, 2020)
10.36	First Amendment to Lease dated as of December 23, 2009 between Alpha and Omega Semiconductor Incorporated and ECI Five Oakmead, LLC (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 11, 2020)
10.37	Amended and Restated 2018 Omnibus Incentive Plan (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K (File No. 001-34717) filed with the Commission on November 12, 2019)

10.38	Supplemental Agreement to Financing Lease Contract, dated as of June 28, 2020 between YinHai Leasing Company and China Import/Export Bank and Chongqing Alpha and Omega Semiconductor Technology Co., Ltd. (English Translation) (incorporated by reference to Exhibit 10.44 from Annual Report on Form 10-K (File No. 001-34717) filed with the Commission on September 2, 2020)
10.39	Amendment to Market Performance Restricted Share Unit Agreement (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on November 6, 2020)
10.40	Supplemental Agreement to Financing Lease Contract, dated August 3, 2020 between YinHai Leasing Company and Chongqing Alpha and Omega Semiconductor Technology Co., Ltd (English Translation) (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on November 6, 2020)
10.41	Letter Agreement of Severance Benefit Program for Yifan Liang, dated April 28, 2010 (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on February 8, 2021)
10.43(+)	Alpha and Omega Semiconductor Limited Calendar Year 2021 Executive Incentive Cash Bonus Plan (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 7, 2021)
10.44(+)	First Amendment to CEO Employment Agreement between Dr. Mike Chang and Alpha and Omega Semiconductor Limited (incorporated by reference to Exhibit 10.44 from Annual Report on Form 10-K (File No. 001-34717) filed with the Commission on August 30, 2021)
10.45(+)	2021 Officer Form Retention Agreement for Executive Officers of Alpha and Omega Semiconductor Limited (incorporated by reference to Exhibit 10.45 from Annual Report on Form 10-K (File No. 001-34717) filed with the Commission on August 30, 2021)
10.47(+)	Second Amendment To Lease US Sunnyvale Office (incorporated by reference to Exhibit 10.47 from Annual Report on Form 10-K (File No. 001-34717) filed with the Commission on August 30, 2021)
10.48(+)	Third Amendment To Lease US Sunnyvale Office (incorporated by reference to Exhibit 10.48 from Annual Report on Form 10-K (File No. 001-34717) filed with the Commission on August 30, 2021)
10.49	Amended and Restated Director Compensation Policy (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on November 5, 2021)
10.50	Equity Transfer Agreement of Chongqing Alpha and Omega Semiconductor Limited dated as of December 1, 2021 (English Translation) (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on February 9, 2022)
10.51	The fourth Supplementary Agreement to the Joint Venture Contract on Incorporation of Chongqing Alpha and Omega Semiconductor Limited dated as of December 1, 2021 (English Translation) (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on February 9, 2022)
10.52	Fourth Addendum to Foundry Agreement dated as of July 28, 2005 between the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 10, 2022)
10.53	Fifth Addendum to Foundry Agreement dated as of July 28, 2005 between the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 10, 2022)
10.54*†	Shareholders Contract of Chongqing Alpha and Omega Semiconductor Limited dated as of July 12, 2022
21.1*	List of Subsidiaries of the Registrant
23.1*	Consent of BDO USA, LLP, independent registered public accounting firm
31.1*	Certification of Chief Executive Officer required by Rule 13(a)-14(a) under the Exchange Act
31.2*	Certification of Chief Financial Officer required by Rule 13(a)-14(a) under the Exchange Act
32.1*	Certification of Chief Executive Officer required by Rule 13a-14(b) under the Exchange Act and Section 1350 of Chapter 63 of Title 18 of the United States Code
32.2*	Certification of Chief Financial Officer required by Rule 13a-14(b) under the Exchange Act and Section 1350 of Chapter 63 of Title 18 of the United States Code
99.1*	Chongqing Alpha and Omega Semiconductor Limited Report of Independent Auditor

101.INS	XBRL Instance
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation
101.DEF	XBRL Taxonomy Extension Definition
101.LAB	XBRL Taxonomy Extension Labels
101.PRE	XBRL Taxonomy Extension Presentation

* Filed with this Annual Report on Form 10-K.
† Certain provisions in this exhibit have been omitted as confidential information.

†† Confidential treatment has been granted for certain information contained in this document pursuant to an order of the Securities and Exchange Commission. Such information has been omitted and filed separately with the Securities and Exchange Commission.

(+) Indicates management contract or compensatory plan or arrangement.

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.

September 19, 2022

ALPHA AND OMEGA SEMICONDUCTOR LIMITED

By: /s/ MIKE F. CHANG

Mike F. Chang
Chief Executive Officer
(Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Mike F. Chang and Yifan Liang, and each or any one of them, his or her true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his or her substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ MIKE F. CHANG **Mike F. Chang, Ph.D.**	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	September 19, 2022
/s/ YIFAN LIANG **Yifan Liang**	Chief Financial Officer and Corporate Secretary (Principal Financial Officer and Principal Accounting Officer)	September 19, 2022
/s/ LUCAS S. CHANG **Lucas S. Chang**	Director	September 19, 2022
/s/ CLAUDIA CHEN **Claudia Chen**	Director	September 19, 2022
/s/ YUEH-SE HO **Yueh-Se Ho, Ph.D.**	Director	September 19, 2022
/s/ SO-YEON JEONG **So-Yeon Jeong**	Director	September 19, 2022
/s/ HANQING (HELEN) LI **Hanqing (Helen) Li**	Director	September 19, 2022
/s/ KING OWYANG **King Owyang**	Director	September 19, 2022
/s/ MICHAEL L. PFEIFFER **Michael L. Pfeiffer**	Director	September 19, 2022
/s/ MICHAEL J. SALAMEH **Michael J. Salameh**	Director	September 19, 2022

Exhibit 10.54

[*] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED.

SHAREHOLDERS CONTRACT OF CHONGQING ALPHA AND OMEGA SEMICONDUCTOR LIMITED

Article 1 General Provisions

This Shareholders Contract (this "**Contract**") is entered into in Chongqing on July 12, 2022 by and among:

1.1 [*], a limited company duly established in [*] under the Laws of China.

1.2 **Alpha and Omega Semiconductor Limited ("AOS")**, a company duly established under the laws of Bermuda.

1.3 **Alpha & Omega Semiconductor (Shanghai) Ltd. ("AOS Shanghai")**, a company duly established in Shanghai under the laws of the People's Republic of China ("**China**").

1.4 **Agape Package Manufacturing (Shanghai) Limited.** ("**Agape**", together with AOS and AOS Shanghai collectively referred to as "**AOS Parties**"), a company duly established in Shanghai under the Laws of China.

1.5 [*], a partnership duly established in [*] under the Laws of China.

1.6 [*], a limited company duly established in [*] under the Laws of China.

1.7 [*], a partnership duly established in [*] under the Laws of China.

1.8 [*], a partnership duly established in [*] under the Laws of China.

1.9 [*], a partnership duly established in [*] under the Laws of China.

1.10 [*], a partnership duly established in [*] under the Laws of China.

1.11 [*], a partnership duly established in [*] under the Laws of China.

1.12 [*], a partnership duly established in [*] under the Laws of China.

1.13 [*], together with [*], [*], [*], [*] and [*] collectively referred to as **"Employee Stock Ownership Platform")**, a partnership duly established in [*] under the Laws of China.

1.14 [*], a partnership duly established in [*] under the Laws of China.

1.15 [*], a partnership duly established in [*] under the Laws of China.

1.16 [*], a partnership duly established in [*] under the Laws of China.

1.17 [*], a partnership duly established in [*] under the Laws of China.

1.18 [*], a partnership duly established in [*] under the Laws of China.

1.19 [*], a partnership duly established in [*] under the Laws of China.

1.20 [*], a partnership duly established in [*] under the Laws of China.

1.21 **Chongqing Alpha and Omega Semiconductor Limited (the "Company")**, a company duly established in Chongqing under the Laws of China.

The parties above are hereinafter collectively referred to as the "**Parties**" or "**Shareholders**" and individually as one "**Party**".

Whereas:

1. AOS, AOS Shanghai, Agape, Chongqing Strategic Emerging Industry Equity Investment Fund Partnership (L.P.) ("**Strategic Industry Fund**") and Chongqing Liangjiang New Area Strategic Emerging Services Equity Investment Fund Partnership (L.P.) ("**Liangjiang Strategic Fund**", together with Strategic Industry Fund collectively referred to as the "**Fund Parties**"; AOS Parties and the Fund Parties collectively referred to as the "**Original Shareholders**") entered into the Joint Venture Contract for the Establishment of Chongqing Alpha and Omega Semiconductor Limited (the "**Joint Venture Company**") ("**Joint Venture Contract**") on March 29, 2016, and established the Company on April 22, 2016 based on the Joint Venture Contract;

2. The Original Shareholders have entered into the Supplementary Contract to the Joint Venture Contract for the Establishment of Chongqing Alpha and Omega Semiconductor Limited (the "**Joint Venture Company**"), the Second Supplementary Contract to the Joint Venture Contract for the Establishment of Chongqing Alpha and Omega Semiconductor Limited (the "**Joint Venture Company**") and the Third Supplementary Contract to the Joint Venture Contract for the Establishment of Chongqing Alpha and Omega Semiconductor Limited (the "**Joint Venture Company**"), and the Original Shareholders and [*] have entered into the Fourth Supplementary Contract to the Joint Venture Contract for the Establishment of Chongqing Alpha and Omega Semiconductor Limited (the "**Joint Venture Company**") (all the above Supplementary Contracts hereinafter collectively referred to as "**Supplementary Contracts to the Joint Venture Contract**");

3. [*] entered into the Equity Transfer Agreement with AOS Shanghai and Agape on December 1, 2021, under which AOS Shanghai and Agape shall respectively transfer to [*] 1.05263% equity of the Company held by them. The change registration formalities for the equity transfer have been completed with the company registration authority.

4. On December 27, 2021, Liangjiang Strategic Fund and Strategic Industry Fund entered into the Equity Transfer Agreement with [*], under which Liangjiang Strategic Fund and Strategic Industry Fund shall respectively transfer 15.9885% equity of the Company (representing the registered capital contribution of the Company of USD 60,596,254) and 32.7177% equity of the Company (representing the registered capital contribution of the Company of USD 124,000,000) to [*]. After the equity transfer, [*] shall hold 48.7061% equity of the Company (representing the registered capital contribution of the Company of USD 184,596,254);

5. On December 27, 2021, Liangjiang Strategic Fund entered into the Equity Transfer Agreement with [*], under which Liangjiang Strategic Fund shall transfer 0.3704% equity of the Company it holds (representing the registered capital contribution of the Company of USD 1,403,746) to [*]. After the equity transfer, [*] shall hold 0.3704% equity of the Company (representing the registered capital contribution of the Company of USD 1,403,746);

6. On December 24, 2021, AOS Shanghai entered into the Equity Transfer Agreement with [*], under which AOS Shanghai shall transfer 1.1111% equity of the Company it holds (representing the registered capital contribution of the Company of USD 4,211,111) to [*].

After the equity transfer, [*] shall hold 1.1111% equity of the Company (representing the registered capital contribution of the Company of USD 4,211,111);

7. The Employee Stock Ownership Platform was established in December 2021, and has subscribed for a total of USD 15,752,900 of the new registered capital of the Company. As of the date of execution of this Shareholders Contract, it holds 3.9906% equity of the Company, and AOS Parties, [*], [*], [*] and [*] have their equity diluted under this capital increase by the Employee Stock Ownership Platform in proportion to their shareholding ratio in the Company.

8. [*], [*], [*], [*], [*], [*], [*] and [*] respectively entered into the Capital Increase Agreement of Chongqing Alpha and Omega Semiconductor Limited ("**Capital Increase Agreement**") with the Company in January 2022, and subscribed for the new registered capital of USD [33,488,204.35] of the Company (the "**Capital Increase**") at the capital increase price of RMB [509,000,000] ("**Capital Increase Price**") according to the terms and conditions stipulated in the Capital Increase Agreement, specifically:

（a）[*] subscribed for USD [4,605,450.50] of the new registered capital at the subscription price of RMB [70,000,000];

（b）[*] subscribed for USD [6,908,175.75] of the new registered capital at the subscription price of RMB [105,000,000];

（c）[*] subscribed for USD [7,829,265.85] of the new registered capital at the subscription price of RMB [119,000,000];

（d）[*] subscribed for USD [5,263,372.00] of the new registered capital at the subscription price of RMB [80,000,000];

（e）[*] subscribed for USD [1,315,843.00] of the new registered capital at the subscription price of RMB [20,000,000];

（f）[*] subscribed for USD [3,289,607.50] of the new registered capital at the subscription price of RMB [50,000,000];

（g）[*] subscribed for USD [2,302,725.25] of the new registered capital at the subscription price of RMB [35,000,000];

（h）[*] subscribed for USD [1,973,764.50] of the new registered capital at the subscription price of RMB [30,000,000];

In accordance with the Foreign Investment Law of the People's Republic of China ("**Foreign Investment Law**"), the Company Law of the People's Republic of China (amended in 2018) ("**Company Law**") and other relevant laws and regulations of China, and based on the principles of equality and mutual benefit, the Parties hereby reach the following agreement through consultation on the rights and obligations of Shareholders and the operation of the Company after the completion of the Capital Increase:

Article 2 Definitions

The following terms used herein shall have the following meanings:

2.1 "**Claim**" refers to any claim, appeal, lawsuit, arbitration, inquiry, proceedings or investigation brought by or to any national, provincial, municipal, local or similar government authorities or departments, regulatory authorities or departments, or administrative authorities or departments or any court, tribunal or judicial authorities or arbitration institutions in China;

2.2 “**Affiliate(s)**”, in respect of any person or entity, refers to any other person or entity that directly or indirectly controls, is controlled by, or is under common control with such person or entity by holding shares or equity or by any other arrangement. In respect of natural persons, Affiliate(s) also include their spouses, parents and parents of spouses, brothers and sisters and spouses of the brothers and sisters, children over 18 years of age and their spouses, brothers and sisters of their spouses and parents of children’s spouses, or any entity that such natural persons or their close family members directly or indirectly control or where they serve as directors, supervisors and officers; and other Affiliate(s) identified in accordance with the Accounting Standard for Business Enterprises – Basic Standard (Order No.76 of the Ministry of Finance of the People’s Republic of China) and Accounting Standard for Business Enterprises No.36 – Related Party Disclosure;

2.3 “**Articles of Association**” refers to the Articles of Association of the Company reviewed and approved by the Shareholder’s Meeting (by the board of directors before the establishment of the Shareholder’s Meeting), and any further amendments or supplements that may be made thereto from time to time thereafter;

2.4 “**Shareholder’s Meeting**” refers to the Shareholder’s Meeting of the Company;

2.5 “**Board of Directors**” refers to the board of directors of the Company;

2.6 “**Business License**” refers to the business license of the Company issued by the registration authority for the establishment of the Company and the subsequent registration change of the Company;

2.7 “**Contract**” or “**Shareholders Contract**” refers to this Shareholders Contract entered into by and among the Parties, and the amendments or supplements that may be made by the Parties from time to time;

2.8 “**Capital Contribution Ratio**” shall have the meaning specified in Article 6.1;

2.9 “**Control**” (including “**controlled**” and “**under common control**”), in respect of any person, means the right to direct or instruct others to direct the affairs or management of a person directly or indirectly through one or several intermediaries, or as a trustee, personal representative or executor, whether by owning voting securities, by contracts or otherwise;

2.10 “**Days**” means calendar days;

2.11 “**Directors**” refers to the directors of the Company;

2.12 “**Establishment Date**” refers to the date when the Company’s first Business License is issued;

2.13 “**Generally Accepted Accounting Principles or US GAAP**” refers to the US accounting reporting standards formulated by the US Accounting Standards Board, including US accounting standards and related interpretations;

2.14 “**Background Technologies**” refers to all unpatented or patented tangible or intangible proprietary and/or confidential know-hows, trade secrets, information, data and materials (i) developed, conceived, obtained or licensed by one Party before the effective date of this Contract and the Joint Venture Contract, or (ii) conceived or implemented by one Party completely beyond the performance of its obligations under this Contract or the Joint Venture Contract and without using the equipment, supplies, resources, trade secrets or confidential information and technologies of other Parties and the Company, or (iii) licensed by third parties to one Party, including but not limited to specifications, engineering and technical data, blueprints, diagrams, charts, computer programs, designs, technologies, methods, procedures, manufacturing data and marketing information and any matters related to the above items. For the avoidance of doubt, the Background Technologies of AOS do not include the patents and technologies transferred to the Company as AOS's capital contribution to the Company confirmed by the agreement between AOS and the Company or other Shareholders, and the Background Technologies of any Party do not include the technologies that are already in the public domain and against which no person may or is able to claim any rights;

2.15 "**Person**" refers to any individual, partnership, enterprise, company, association, trust, unincorporated organization or government authority;

2.16 "**China**" refers to Chinese mainland, excluding Hong Kong Special Administrative Region, Macao Special Administrative Region and Taiwan for the purpose of this Contract;

2.17 "**China's Accounting System**" refers to all the financial and accounting laws, regulations, rules and systems in China and applicable to the Company;

2.18 "**Laws of China**" refers to any published and effective laws, administrative regulations, provincial or other local regulations, departmental rules and departmental normative documents in China;

2.19 "**Registration Authority**" refers to China's State Administration for Market Regulation or its local counterpart it authorizes for company registration;

2.20 "**Subsidiaries**" refers to any entity ("Entity") that, on the date when the relevant decision is made, meets one of the following conditions: (i) the Company owns fifty percent (50%) or more of the voting shares of the Entity for the election of Directors or other equities or the Company directly or indirectly owns or controls the profits or rights and interests in fifty percent (50%) or more of the registered capital of the Entity; or (ii) the assets of the Entity or part of its assets are combined with the net income of the Company, and recorded in the Company's books according to China's Accounting System and International Financial Reporting Standards and for the purpose of financial reporting; or (iii) the business and policies of the Entity are directly or indirectly controlled by the Company.

2.21 "**Taxes**" refers to any and all taxes, fees, impositions, taxation, duties, levies and other charges of any kind levied by any government department (together with any and all interest, fines, tax surcharges and extra amounts levied in connection with the foregoing), including but not limited to taxes or other charges related to income, franchise, mining right, unexpected income or other profits, total income, property, sales, use, share capital, salary, employment of personnel, social insurance fund, labor compensation, unemployment compensation, etc., or taxes or other charges with the nature of consumption tax, withholding tax, ad valorem tax, stamp duty, transfer tax, value-added tax, capital gains tax, and licensing fees, registration fees and documentation fees, as well as customs levies, duties and similar charges;

2.22 "**Term**" refers to the business term of the Company as stipulated in Article 12 of this Contract;

2.23 "**Fund Parties**" refers to Chongqing Strategic Emerging Industry Equity Investment Fund Partnership (L.P.) and Chongqing Liangjiang New Area Strategic Emerging Services Equity Investment Fund Partnership (L.P.);

2.24 "**AOS Parties**" refers to AOS, AOS Shanghai and Agape;

2.25 "**Original Shareholders**" refers to AOS Parties and Fund Parties;

2.26 "[*]" refers to [*];

2.27 "[*]" refers to [*];

2.28 “[*]” refers to [*];

2.29 “[*]” refers to [*];

2.30 “**Employee Stock Ownership Platform**” refers to the platform set up for the convenience of employee stock ownership of the Company, specifically referring to [*], [*], [*], [*], [*] and [*];

2.31 “**New Investors**” refers to [*], [*], [*], [*], [*], [*], [*] and [*];

2.32 “**Shareholders of the Company**” refers to AOS, AOS Shanghai, Agape, [*], [*], Employee Stock Ownership Platform, [*], [*] and New Investors;

2.33 “**Capital Increase Agreement**” refers to the Capital Increase Agreement of Chongqing Alpha and Omega Semiconductor Limited that the New Investors respectively entered into with the Company in January 2022;

2.34 “**Investors’ Investment Unit Price**” refers to the issue price of each USD of registered capital corresponding to the shares issued under the Capital Increase Agreement;

2.35 “**USD**” or “**US/$**” refers to the statutory currency of the United States of America;

2.36 “**Qualified Listing**” refers to the Company’s initial public offering and listing for trading of RMB ordinary shares at Shanghai Stock Exchange or Shenzhen Stock Exchange, excluding the listing and public transfer of the Company’s shares at the National Equities Exchange and Quotations, or the listing of the Company’s shares at other exchanges than Shanghai Stock Exchange or Shenzhen Stock Exchange, such as Beijing Stock Exchange, New York Stock Exchange, NASDAQ and Stock Exchange of Hong Kong Ltd.

2.37 “**Officers**” refers to the general manager, deputy general managers, financial directors, secretary of the Board of Directors (if any) and other personnel specified in the Articles of Association of the Company;

2.38 “**Or more**” is inclusive of the specified number, while “more than half” is not.

Article 3 Shareholders of the Company

Shareholders of the Company are as follows:

（1） [*], an enterprise established under the Laws of China and existing as a limited company, with its registered address located at [*]. It is registered in [*] with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Legal Representative
Nationality: [*]

（2） **AOS** (Alpha and Omega Semiconductor Limited), a company established and existing under the laws of Bermuda, with its registered address located at Clarendon House, 2 Church Street, Hamilton HM 11, Bermuda, and business registration number being 29275.

Authorized Representative: Name: [*]
Title: Chairman
Nationality: [*]

(3) **AOS Shanghai**, a company established under the Laws of China and existing as an enterprise legal person, with its registered address located at Building 8/9, No.91, Lane 109, Rongkang Road, Xiaokunshan Town, Songjiang District, Shanghai China. It is registered in Shanghai with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Legal Representative
Nationality: [*]

(4) **Agape**, a company established under the Laws of China and existing as an enterprise legal person, with its registered address located at Type B1 Standard Workshop of Dongkai Real Estate Park, Zone B, Songjiang Export Processing Zone, Songjiang District, Shanghai. It is registered in Shanghai with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Legal Representative
Nationality: [*]

(5) [*], an enterprise established under the Laws of China and existing as a partnership, with its registered address located at [*]. It is registered in [*] with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

(6) [*], an enterprise established under the Laws of China and existing as a limited company, with its registered address located at [*]. It is registered in [*], with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Legal Representative
Nationality: [*]

(7) [*], a partnership established under the Laws of China and existing as a partnership, with its main business place located at [*]. It is registered in [*], with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

(8) [*], a partnership established under the Laws of China and existing as a partnership, with its main business place located at [*]. It is registered in [*], with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

(9) [*], a partnership established under the Laws of China and existing as a partnership, with its main business place located at [*]. It is registered in [*], with a unified social credit code of [*].

Authorized Representative: Name: [*]

Title: Representative Appointed by Managing Partner
Nationality: [*]

(10) [*], a partnership established under the Laws of China and existing as a partnership, with its main business place located at [*]. It is registered in [*], with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

(11) [*], a partnership established under the Laws of China and existing as a partnership, with its main business place located at [*]. It is registered in [*], with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

(12) [*], a partnership established under the Laws of China and existing as a partnership, with its main business place located at [*]. It is registered in [*], with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

(13) [*], a partnership established under the Laws of China and existing as a partnership, with its main business place located at [*]. It is registered in [*], with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

(14) [*], a partnership established under the Laws of China and existing as a partnership, with its registered address located at [*]. It is registered in [*] with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

(15) [*], a partnership established under the Laws of China and existing as a partnership, with its registered address located at [*]. It is registered in [*] with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

(16) [*], a partnership established under the Laws of China and existing as a partnership, with its registered address located at [*]. It is registered in [*] with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner

Nationality: [*]

（17） [*], a partnership established under the Laws of China and existing as a partnership, with its registered address located at [*]. It is registered in [*] with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

（18） [*], a partnership established under the Laws of China and existing as a partnership, with its registered address located at [*]. It is registered in [*] with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

（19） [*], a partnership established under the Laws of China and existing as a partnership, with its registered address located at [*]. It is registered in [*] with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

（20） [*], a partnership established under the Laws of China and existing as a partnership, with its registered address located at [*]. It is registered in [*] with a unified social credit code of [*].

Authorized Representative: Name: [*]
Title: Representative Appointed by Managing Partner
Nationality: [*]

Article 4 Basic Information of the Company

4.1 Basic Information of the Company

(a) The English name of the Company is "**Chongqing Alpha and Omega Semiconductor Limited**".

(b) The Chinese name of the Company is "**重庆万国半导体科技有限公司**".

(c) The legal address of the Company is No.288 Yuefu Avenue, Beibei District, Chongqing, China.

4.2 Nature of the Company

The Company is a limited liability company with corporate legal personality under the Company Law. The establishment and activities of the Company shall be in compliance with the relevant provisions of Laws of China, and its legitimate rights and interests shall be protected by Laws of China.

4.3 Limited Liability

As a limited liability company established under the Laws of China, the Company shall be liable for its debts with all its assets, and in any case, the Shareholders of the Company shall be liable to the Company and share the risks only to the extent of their respective contributions to the Company's registered capital expressly subscribed in accordance with the provisions of Article [6.1] below. In addition, the Shareholders of the Company shall not be individually or jointly and severally liable for any debts of the Company. Shareholders of the Company shall share the Company's profits in proportion to their paid-in capital contribution to the Company and bear the Company's losses in proportion to their subscribed capital contribution to the Company.

4.4 Branches

The Company may, as required, set up Subsidiaries in and outside China with the approval of the Shareholder's Meeting; or set up branches or representative offices in and outside China with the approval of the Board of Directors.

Article 5 Business Scope

5.1 Business Scope

The business scope of the Company shall be summarized as follows: design, manufacture and sales of semiconductor chips; design, manufacture and sales of semiconductor chip packaging; undertaking processing and trade services for semiconductor chips or semiconductor chip packaging. (Items in the Company's business scope that require approval as provided in laws and administrative regulations shall be approved in accordance with the law.)

Article 6 Registered Capital and Capital Contribution Ratio

6.1 Registered Capital and Capital Contribution Ratio

After the Capital Increase is completed, the registered capital of the Company shall be USD (428,241,104.35), and the amount and proportion of capital contribution subscribed by Shareholders of the Company ("**Capital Contribution Ratio**") are as follows:

No.	Investor's Name	Subscribed Capital Contribution (USD)	Capital Contribution Ratio (%)	Mode of Capital Contribution
1	[*]	184,596,254.00	43.1057	Cash
2	AOS Shanghai	22,799,415.00	5.3240	In kind
3	Agape	39,010,526.00	9.1095	In kind
4	AOS	119,000,000.00	27.7881	Patent, technology and cash

5	[*]	7,978,948.00	1.8632	In kind
6	[*]	4,211,111.00	0.9834	In kind
7	[*]	4,693,353.50	1.0960	Cash
8	[*]	9,742,000.00	2.2749	Cash
9	[*]	2,394,100.00	0.5591	Cash
10	[*]	1,323,900.00	0.3091	Cash
11	[*]	924,700.00	0.2159	Cash
12	[*]	740,600.00	0.1729	Cash
13	[*]	627,600.00	0.1466	Cash
14	[*]	4,605,450.50	1.0754	Cash
15	[*]	6,908,175.75	1.6132	Cash
16	[*]	7,829,265.85	1.8282	Cash
17	[*]	5,263,372.00	1.2291	Cash
18	[*]	1,315,843.00	0.3073	Cash
19	[*]	1,973,764.50	0.4609	Cash
20	[*]	2,302,725.25	0.5377	Cash
Total		**428,241,104.35**	**100**	/

6.2 Payment of Capital Contribution

(a) As of the execution date of this Contract, the Original Shareholders, [*] and [*] have completed the capital contribution in full, including contribution in cash, equipment and intellectual property, in accordance with the Joint Venture Contract, the Supplementary Contracts to the Joint Venture Contract or other relevant agreements or legal documents.

(b) The New Investors shall pay the subscription price to the account designated by the Company in accordance with the Capital Increase Agreement.

6.3 Equity Transfer

(a) Before the listing of the Company, the Parties shall ensure that the equity transfer is carried out as provided by the Company Law and the Articles of Association in accordance with the criteria for determining the ownership of control rights in relevant laws and regulations and on the premise that the Company has no actual controller.

(b) Shareholders of the Company may transfer all or part of their equity to each other.

(c) A Shareholder's transfer of equity to persons other than Shareholders shall be approved by more than half of other Shareholders. The Shareholder shall notify other Shareholders in writing about the transfer of equity for approval. If other Shareholders fail to reply within 30 days from the date of receipt of the written notice, it will be deemed that they have agreed to the transfer. If half or more of other Shareholders don't agree to the transfer, the Shareholders who don't agree shall purchase the equity to be transferred; the Shareholders who don't purchase shall be deemed to have agreed to the transfer.

(d) For the equity transferred with the consent of Shareholders, other Shareholders shall have the right of first refusal under the same conditions. If two or more Shareholders claim exercise of the right of first refusal, they shall determine their respective purchase proportions through consultation; if consultation fails, they shall exercise the right of first refusal in proportion to their paid-in capital contribution at the time of transfer.

(e) No Shareholder may transfer the equity of the Company it holds to the companies or enterprises listed in Schedule 1 to this Shareholders Contract.

(f) Where laws, regulations and the Articles of Association have other provisions on equity transfer, such provisions shall prevail.

6.4 Equity Pledge

Without the unanimous consent of other Shareholders of the Company, no Party may use all or part of the Company's equity corresponding to its subscribed capital contribution as pledge, nor as other forms of security.

6.5 Qualified Listing

The Parties agree that they will use every effort to promote the listing process of the Company. For the purpose of listing, at the request of the Company and on the premise of abiding by Laws of China, the Company and the existing Shareholders shall reform the Company into a company limited by shares and actively promote the listing of the Company. For the purpose of listing and without prejudice to the listing, the Company and existing Shareholders agree to use every effort to actively cooperate and provide necessary assistance, and under the guidance and with the suggestions of the listing intermediaries, ensure that the Company, Shareholders (including indirect shareholders) and other aspects meet the listing conditions provided by the government departments and relevant stock exchanges in China, including but not limited to conditions on:

Equity adjustment: To reduce its shareholding ratio according to the fair market price recognized by the transferor and transferee, amend this Contract, the Articles of Association and handle relevant change registration according to the number of equity and timeline as planned in the equity adjustment plan approved by the internal authority of the Company and confirmed by AOS and [*];

Related party transactions: Shareholders shall adjust the proportion of related party transactions with the Company under the guidance and with suggestions of the Company's listing intermediaries and the plan confirmed and agreed to by the Shareholders in writing that constitute related party transactions, so as to make it meet the relevant requirements of Qualified Listing.

All Shareholders warrant that the Company has the ability to directly face the market for going concern independently, and that the Company meets the requirements of independence such as asset integrity, personnel independence, financial independence, institutional independence and business independence.

Other matters that require the assistance of the Parties for Qualified Listing.

Article 7 Responsibilities of the Parties

7.1 Shareholders of this Contract shall actively perform their obligations and responsibilities as stipulated in this Contract and the Articles of Association.

7.2 Intellectual Property

(a) AOS's intellectual property. AOS is the sole and exclusive owner of (i) AOS's Background Technologies; and (ii) any improvements and modifications made by AOS to AOS's Background Technologies; (iii) all rights, interests and benefits (including but not limited to all intellectual property rights that should be enjoyed according to Laws of China) under any new technology independently developed by AOS on and after the effective date of this Contract and the Joint Venture Contract related to the products operated by the Company and the improvements and modifications made thereto (collectively referred to as "AOS's Intellectual Property"). Under the circumstances that the Company's production, continuous production, OEM production, use, sale, offer for sale, import, export and other use of products or services are necessary to fulfill the orders of AOS or AOS's Affiliates, AOS shall grant the Company free of charge the right to use AOS's Intellectual Property required to complete such orders. However, if the Company requires to use AOS's Intellectual Property beyond the above authorization scope, including but not limited to technology research and development, and providing any services or products to third parties, the Company shall consult with AOS in advance to obtain the license for using such intellectual property.

(b) The Company's Intellectual property. The Company is the sole and exclusive owner of (i) the patents and technologies transferred by AOS to the Company as capital contribution; (ii) any improvement or modification made by the Company to the patents and technologies transferred by AOS to the Company as capital contribution; and (iii) all rights, interests and benefits (including but not limited to all intellectual property rights that should be enjoyed under the Laws of China) under any new technology independently developed by the Company on and after the effective date of this Contract and the Joint Venture Contract and the improvements or modifications thereto (collectively referred to as the "Company's Intellectual Property").

(c) For the purpose of Company's Intellectual Property specified in Article 7.2(b)(i), the Company hereby agrees to grant the non-sublicensable, non-transferable right of use and license of the Intellectual Property to AOS, AOS's Affiliates and processing agents for free for their production, continuous production, OEM production, use, sale, offer for sale, import, export and other use of any products or services. Notwithstanding the foregoing, the processing agents of AOS shall not provide the intellectual property and related products licensed by the Company free of charge to any third party with or without consideration.

According to the requirements of the laws, regulations and review rules in force then, if Article 7.2(c) of this Contract fails to meet the relevant laws, regulations and review requirements at the time when the Company applies for listing counseling and filing, the Parties agree to settle the matter through friendly consultation in accordance with the relevant rules and considering the interests of all Parties to meet the listing requirements, and the Parties will urge the securities traders to use every effort to communicate with the listing regulatory authorities on this clause.

(d) Technical improvement or modification
Without the permission of the other Party, AOS or the Company shall not make any modification or improvement to the intellectual property of the other Party; in case of

similar needs, the two Parties shall make a special agreement through friendly consultation in advance. For the avoidance of ambiguity, AOS shall, in accordance with the Joint Venture Contract, be the sole and exclusive owner of all rights, interests and benefits (all intellectual property rights that shall be enjoyed under the Laws of China) under any improvement or modification to AOS's Background Technologies made by the Company alone or in cooperation with AOS before the execution and effectiveness of this Shareholders Contract.

(e) Technical cooperation and development.
Subject to Article 7.2(a) and (b), AOS and the Company may agree to jointly develop new technologies pursuant to a separate technical cooperation and development contract and/or make improvements and modifications thereto.

(f) Under the circumstances that the production, continuous production, OEM production, use, sale, offer for sale, import, export and other use of products or services by the Company, its Subsidiaries and branches are necessary to fulfill the orders of AOS or AOS's Affiliates, AOS shall authorize the Company, Subsidiaries, branches and processing agents of the Company to use the trademark rights owned by AOS related to the products or services free of charge. However, if the Company intends to use AOS's trademark beyond the above authorization scope, including but not limited to providing any services or products to third parties, the Company shall consult with AOS in advance to obtain the trademark use license.

(g) If the Company or AOS intends to use the intellectual property of the other Party beyond the scope stipulated in this Contract, the two Parties shall consult amicably and sign a technology license contract in accordance with Laws of China to set forth the specific content of the license.

Article 8 Shareholder's Meeting

8.1 Functions and Powers of Shareholder's Meeting

The Shareholder's Meeting is composed of all Shareholders of the Company. It is the authority of the Company and exercises the following functions and powers:

(a) To decide on the business policies and investment plans of Company;

(b) To elect and replace Directors and supervisors that are not appointed from representatives of staff and workers, and to decide on matters concerning the remuneration of Directors and supervisors;

(c) To review and approve reports of the Board of Directors;

(d) To review and approve reports of the board of supervisors;

(e) To review and approve the annual budget plan of routine connected transaction forecast;

(f) To review and approve the annual financial budget plan (except for the annual routine connected transaction forecast) and final accounting plan of the Company;

(g) To pass resolutions on the issuance of corporate bonds;

(h) To review and approve the Company's annual profit distribution plan and plan for making up losses;

(i) To pass resolutions on the increase or reduction of registered capital or listing of the Company;

(j) To pass resolutions on the merger, division, dissolution, liquidation or change of corporate form of the Company;

(k) To amend the Articles of Association;

(l) To pass resolutions on the Company's investment in other enterprises or providing security for others;

(m) To examine and approve the non-routine related party transactions (except for acceptance of cash assets as gifts, debts that simply relieve the Company's obligations, and acceptance of securities and subsidies) that the Company intends to have with Affiliates and reach the following standard, and related party transactions that exceed the scope of annual routine connected transaction forecast in the annual financial budget and reach the following standard: transactions with a total transaction amount of more than RMB 50 million or a single transaction amount of more than RMB 10 million in a fiscal year;

(n) To decide to sell, transfer, license or otherwise dispose of the Company's patents, trademarks or other intellectual property rights; or set encumbrance on the Company's patents, trademarks or other intellectual property rights;

(o) To decide to engage or dismiss the accounting firm that undertakes the audit business of the Company;

(p) To examine and approve the Company's equity incentive plan (including but not limited to establishing, revising or terminating the employee stock ownership plan or similar incentive plan, and issuing incentive equity or options through the Employee Stock Ownership Platform or other means);

(q) To examine and approve the Company's single or cumulative purchase and sale of major assets or the security with an amount of more than 30% of the Company's latest audited total assets within one year;

(r) To examine and approve the appointment of independent auditors to audit the Company's accounts on behalf of Shareholders;

(s) To examine and approve the establishment of subsidiaries in China;

(t) Other functions and powers provided by laws, administrative regulations and Articles of Association.

8.2 <u>Resolution of Shareholder's Meeting</u>

The resolutions of the Shareholder's Meeting on the matters discussed shall be adopted by Shareholders representing more than half of the voting rights. However, the matters involved in Article 8.1(e) to (n) shall be adopted by Shareholders representing two thirds or more of the voting rights.

The Shareholder's Meeting shall be convened by the Board of Directors and presided over by the board chairman; if the chairman is unable to or does not perform his duty, the meeting shall be presided over by the vice chairman; if the vice chairman is unable to or does not perform his duty, the meeting shall be presided over by a Director jointly designated by more than half of the Directors.

An extraordinary Shareholder's Meeting may be convened upon the proposal of Shareholders representing one tenth (1/10) or more of the voting rights, one third (1/3) or more of the Directors or the board of supervisors. The chairman shall convene and preside over the Shareholder's Meeting within ten days after receipt of the proposal.

Article 9 Board of Directors, Board of Supervisors, General Manager and Management Organization

9.1 Composition of the Board of Directors

The Parties agree that the Board of Directors is composed of seven (7) Directors, of whom three (3) are appointed by AOS; three (3) by Yujiangxin; and one (1) by the Employee Stock Ownership Platform. Shareholders of the Company shall vote in favor of the Directors appointed by other Parties in accordance with this Contract when considering the proposal of electing the Company's Directors at the Shareholder's Meeting. During the term of this Contract, if the Capital Contribution Ratio of Shareholders of the Company changes, the Parties may make corresponding amendments to this Contract, including but not limited to making appropriate amendments to the composition of the Bboard of Directors and the number of Directors appointed by the Parties according to the agreement reached by the Parties otherwise through consultation at the time.

9.2 Term of Office

The term of office of Directors shall be specified in the Articles of Association, and each Director's term of office shall be three (3) years. When the term of office of a Director expires, the Director may serve consecutive terms if re-elected. If an appointed Director is replaced, the Party that replaces the Director shall notify all Shareholders and the Company in writing. The change of Directors shall be decided by the Shareholder's Meeting, and the change shall be registered and filed with the Registration Authority. Each Party shall take appropriate measures to maintain the number of Directors appointed by itself in the Board of Directors.

9.3 Chairman and Vice Chairman

(a) The Board of Directors shall have a chairman and a vice chairman. The chairman and the vice chairman shall be elected by the Board of Directors.

(b) The functions and powers of the chairman include the following:

(i) To convene and preside over board meetings;

(ii)To perform other functions and powers granted by the Shareholder's Meeting and the Board of Directors or specified in this Contract and the Articles of Association.

9.4 Board Meeting

(a) The Board of Directors shall hold at least two (2) regular meetings every year. Upon the written request of one third (1/3) or more of the Directors, the chairman shall convene an extraordinary meeting of the Board of Directors to discuss related matters within thirty (30) days after receipt of the request.

(b) All board meetings shall be convened and presided over by the chairman or vice chairman or a Director (elected by more than half of the Directors). Fifteen (15) days before each board meeting, a written notice (including notice by email) shall be sent to each Director to inform the Director of the time, place and agenda of the meeting. The chairman shall formulate the agenda of the board meeting. At least ten (10) days before each meeting, documents related to the meeting (if any) shall be sent to each Director. Any board meeting held without proper and timely notice to each Director in accordance with this paragraph shall be deemed invalid, unless the Director who has not received proper and timely notice expresses to the chairman or vice chairman in writing to waive the requirement for notice before, during or after the board meeting. Any Director who does not receive proper notice but attends the meeting shall be deemed to have waived the requirement for notice. With the mutual agreement among all Directors in writing, the notice period of board meeting and the sending period of meeting documents specified in this Contract and the Articles of Association may be shortened or exempted.

(c) Other details about the board meeting will be specified in the Articles of Association or the rules of procedure of the Board of Directors of the Company.

(d) Meeting method: on-the-spot meeting, through instant messaging such as video or telephone, or by written execution such as email (referring to the meeting method of making resolutions on proposals by sending them for examination or circulation respectively). The convener of the board meeting shall provide appropriate methods for Directors to attend the board meeting according to the convenience of Directors to attend the meeting.

9.5 Quorum and Adoption of Resolutions

(a) The formal meeting of the Board of Directors may be held only when more than half of the Directors are present. For resolutions made by the Board of Directors, matters in (d) to (n) of Article 9.6 shall be adopted by two thirds or more of all the Directors, and other matters in Article 9.6 shall be adopted by more than half of all the Directors. Attending in person (including by telephone or video conference) and appointing a proxy to attend the meeting shall both be deemed as proper attendance. If the quorum is not met, the resolutions adopted by the board meeting will be invalid and have no effect. However, if the quorum of the duly convened board meeting cannot be reached due to the two consecutive absences of the Director appointed by each Party hereto or his proxy without reasonable reasons, even if the aforementioned Director fails to attend the meeting, the board meeting shall be deemed to have been duly held, and the resolutions adopted at the board meeting shall be deemed to be valid.

(b) Each Director attending the board meeting has one vote. If any Director is unable to attend the board meeting for any reason, the Director may entrust a proxy in writing to attend the board meeting on his behalf, and the proxy shall be a Director of the Company. Any appointed proxy enjoys the same rights as the Director who appoints the proxy, but one Director cannot act for two or more Directors at the same time. A proxy shall have one vote for each Director he represents, and he also has one vote for himself as a Director.

(c) The resolutions of the Board of Directors may be adopted in writing without a board meeting and executed by all Directors of the Board, but the written resolutions to be adopted must be sent to each Director. To this end, each Director may execute different copies of the same written resolution, all of which together constitute a valid written resolution, and for this purpose, the scanned or faxed copies of the Directors' signatures shall be valid and binding. Such written resolutions shall have the same effect as those adopted at the duly held board meeting.

9.6 Functions and Powers of the Board of Directors

The Board of Directors shall be responsible to Shareholder's Meeting and exercise the following functions and powers:

(a) To convene the Shareholder's Meeting and report its work to the Shareholder's Meeting;

(b) To implement the resolutions of the Shareholder's Meeting;

(c) To decide on the business plan and investment plan of the Company;

(d) To formulate the annual budget plan for routine connected transaction forecast;

(e) To formulate the annual financial budget plan (except for the annual routine connected transaction forecast) and final accounting plan of the Company;

(f) To formulate the Company's annual profit distribution plan and plan for making up losses;

(g) To formulate plans for the increase or reduction of the registered capital of the Company;

(h) To formulate plans for merger, division, dissolution or change of corporate form, issuance of bonds or other securities and listing of the Company;

(i) To formulate the Company's equity incentive plan (including but not limited to establishing, revising or terminating the employee stock ownership plan or similar incentive plan, and issuing incentive equity or options through the Employee Stock Ownership Platform or other means);

(j) To decide on the establishment of the Company's internal management bodies;

(k) To decide on the Company's investment, acquisition and sale of assets, mortgage of assets, provision of security and related party transactions within the scope authorized by the Shareholder's Meeting;

(l) To examine and approve the following transactions (whether a single transaction or a series of related transactions) that exceed the annual budget of the Company: (i) loans or other debts of more than RMB 30 million beyond the annual budget; (ii) expenses of more than RMB 5 million beyond the annual budget; (iii) purchase or disposal of business or assets of more than RMB 5 million beyond the annual budget; (iv) other transactions beyond the annual budget and outside the normal business operation with a total amount of more than RMB 5 million in 12 consecutive months;

(m) To examine and approve the non-routine related party transactions of the Company which reach the following standards and related party transactions beyond the annual forecast range of routine related party transactions in the annual financial budget which reach the following standards: related party transactions with related natural persons with a total transaction amount of RMB 1 million or more in one fiscal year, or related party transactions with a single transaction amount of RMB 300,000 or more; related party transactions with related legal persons with a total transaction amount of RMB 10 million or more in one fiscal year or a single transaction amount of RMB 3 million or more (except for the Company's provision of security and acceptance of cash assets as gifts, debts that simply relieve the Company's obligations, and acceptance of securities and subsidies);

(n) To decide on the appointment or removal of the general manager of the Company and his remuneration, and to decide on the appointment or removal of deputy general manager, financial directors and other Officers of the Company according to the recommendation of the general manager and their remuneration; to set performance targets of Officers and make evaluation every year;

(o) To formulate the basic management system of the Company;

(p) To propose to the Shareholder's Meeting to engage or replace the accounting firm that audits for the Company;

(q) To examine and approve the establishment of branches or representative offices of the Company in and outside China;

(r) Other functions and powers granted by laws, regulations, departmental rules or the Articles of Association of the Company.

9.7 Directors

(a) The remuneration of serving Directors and their proxies shall be borne by the appointing Party. The expenses incurred by Directors and their proxies for attending board meetings shall be reimbursed by the Company in RMB or USD based on the reimbursement vouchers permitted by China's Accounting System.

(b) All Directors, including the chairman and vice chairman, shall perform their duties in accordance with the relevant provisions of this Contract and the Articles of Association.

(c) Each Director shall faithfully perform his duties according to the provisions of this Contract and the Articles of Association, safeguard the interests of the Company and avoid conflicts with the interests of the Company.

(d) Directors and Officers shall not commit any of the following acts:

(i) Misappropriating the funds of the Company;

(ii) Depositing the funds of the Company in an account opened in his personal name or in the name of another individual;

(iii) In violation of the provisions of the Articles of Association, lending the funds of the Company to others or providing security for others with the property of the Company without the consent of the Shareholder's Meeting or the Board of Directors;

(iv) Entering into a contract or transaction with the Company in violation of the provisions of the Articles of Association or without the consent of the Shareholder's Meeting;

(v) Taking advantage of his position to seek for himself or others business opportunities that belong to the Company, or operating by himself or for others the same type of business as that of the Company without the consent of the Shareholder's Meeting;

(vi) Accepting as his own the commissions of a transaction between another person and the Company;

(vii) Disclosing the secrets of the Company without authorization;

(viii) Other acts that violate his fiduciary obligation to the Company.

The income obtained by Directors and Officers in violation of the provisions of the preceding paragraph shall belong to the Company.

9.8 Minutes of Board Meeting

The Board of Directors shall keep complete and correct meeting minutes in Chinese, including copies of all meeting notices; all meeting minutes and resolutions adopted shall be recorded by the meeting secretary appointed by the Board of Directors and submitted to all Directors for review within sixty (60) days after each meeting. All resolutions of the Board of Directors shall be executed by all voting Directors, kept by a special person appointed by the Board of Directors, and kept in the minutes book of the board meetings of the Company. The appointment and replacement of board members shall also be recorded in the minutes book of board meetings.

9.9 Board of Supervisors

The Company shall have a board of supervisors, consisting of three supervisors, one appointed by AOS, one by Yujiangxin, and one employee supervisor elected by the congress of workers and staff. The board of supervisors of the Company shall have a chairman who is elected by the board of supervisors. The appointing Party may appoint or replace its nominated supervisor after notifying the Company in writing and sending a copy of the notice to other Parties. The term of office of the first supervisors shall start from the Establishment Date of the Company. The term of office of each supervisor shall be three (3) years. Upon expiration of the term of office, the supervisor may serve consecutive terms if re-elected. No supervisor may concurrently serve as a Director or Officer.

9.10 Functions and Powers of the Board of Supervisors

The board of supervisors of the Company shall exercise the following functions and powers:

(a) To inspect the Company's financial affairs;

(b) To supervise the behavior of Directors and Officers in performing their duties to the Company, and proposing the removal of Directors and Officers who violate laws, administrative regulations, the Articles of Association or the resolutions of the Shareholder's Meeting;

(c) To request Directors and Officers to make corrections when their behavior harms the interests of the Company;

(d) To propose to convene an extraordinary Shareholder's Meeting, and convene and preside over the Shareholder's Meeting when the Board of Directors fails to fulfill the provisions of the Articles of Association in respect of convening and presiding over a Shareholder's Meeting;

(e) To make proposals to the Shareholder's Meeting;

(f) To bring a lawsuit against the Directors and Officers in accordance with the provisions of Article 151 of the Company Law;

(g) Other functions and powers provided by laws and administrative regulations, and granted by the Articles of Association or the Shareholder's Meeting.

Supervisors may attend the board meeting as non-voting attendees, and make inquiries or suggestions on matters to be resolved by the Board of Directors. If supervisors discover material irregularities in the operation of the Company, they may conduct an investigation through the board of supervisors, or if necessary, jointly engage an accounting firm to assist them in their work, and the expenses incurred therefrom shall be borne by the Company.

9.11 Meeting of Supervisors

The meeting of the board of supervisors shall be held at least once a year, and the time and place of the meeting shall be the same as that of the annual meeting of the Board of Directors. Upon the proposal of one or more supervisor, an extraordinary meeting of the board of supervisors shall be held. The meeting of the board of supervisors shall be held only when more than half of the supervisors are present. The resolutions made by the board of supervisors according to their functions and powers shall be valid only when they are approved by more than half of the supervisors.

When voting on a resolution of the board of supervisors, each supervisor present at the meeting shall have one vote. The board of supervisors shall make minutes of the decisions on the matters discussed, and the supervisors shall facilitate the complete and accurate minutes of all resolutions in Chinese, and the minutes shall be executed by all supervisors; the Company shall, subject to the financial regulations of the Company, reimburse the supervisors for the reasonable expenses and costs (such as travel expenses and hotel accommodation expenses within reasonable limits) incurred in performing their duties and obligations under this Contract and the Articles of Association.

9.12 Officers and Legal Representative

The Company shall have general manager, deputy general manager, financial directors, secretary of the Board of Directors (if any) and other personnel specified in the Articles of Association as Officers. The general manager of the Company shall be appointed by the Board of Directors, and other Officers shall be nominated by the general manager and appointed by the Board of Directors. The general manager of the Company shall serve as the legal representative.

If any Officer of the Company is removed from office by the Board of Directors, the Board of Directors shall formally appoint the succeeding Officers according to its rules of procedure within thirty (30) days after the removal. Within thirty (30) days before the expiration of each term of the Officers, the Board of Directors shall appoint the succeeding Officers.

9.13 Management of the Company and Standing Committee of the Board of Directors

(a) The Company shall have a standing committee of the Board of Directors ("Board Committee"). The establishment of the Board Committee may be amended by the Board of Directors from time to time according to the needs of the Company. Each member of the Board Committee shall be appointed by the Board of Directors and may serve consecutive terms. The daily management and operation of the Company shall be carried out by Officers under the leadership of the general manager.

(b) The Board Committee shall have two committees: Audit Committee and Remuneration Committee. The establishment of the Board Committee and its rules of procedure shall be separately prepared and adopted by the Board of Directors.

(c) If any Officer concurrently serves as a Director, the member shall not vote as a Director on his personal remuneration, or on his removal from his position as a Director, or on his removal from his position as an Officer.

(d) The general manager shall prepare and submit reports on the Company's operation, production, marketing, capital expenditure, personnel and other business matters to the Board of Directors.

(e) The financial director shall be responsible for preparing and submitting the annual financial report to the Board of Directors.

(f) The person in charge of internal audit of the Company shall report to the Board of Directors on a regular basis.

9.14 Exemption of Personal Liability

Directors and Officers shall not bear any personal liability for their normal duties within their respective scope of office. The Company shall, to the maximum extent permitted by relevant Laws of China, protect and compensate the members of the management organization from any claims or accusations against them (including but not limited to compensation for their reasonable attorney fees, litigation and arbitration fees, etc.), except for claims or accusations caused by intentional misconduct, gross negligence or fraud of the members of the management organization. The Company shall purchase liability insurance for Directors and Officers at its own expense.

Article 10 Labor and Personnel Management

10.1 Policy of Employee

Any policies, programs, and contracts regarding recruitment, employment, training, incentive, dismissal, resignation, wage, labor safety, social insurance or other benefit and labor discipline, and other matters related to the company's employees shall be handled by the management bodies in accordance with relevant Chinese laws. The Company has autonomy over its employees and labor management. The Company shall sign a employment contract with each employee.

10.2 Hiring of Employees

The Company should select the best employees according to the needs of its operation and development. If the Company recruits new employees through examinations or assessments, only candidates who have achieved excellent results in the examinations or assessments will be hired.

10.3 Remuneration of Employees

The policies related to the wages, benefits and other treatment of the Company's employees shall be formulated by the Company in accordance with relevant Chinese laws and in light of the Company's actual situation. The Company enjoys the autonomy to decide employee's remuneration and related benefits based on its operating and economic conditions.

10.4 Termination of Labor Relationship

(a) Employees of the Company should be allowed to resign in accordance with relevant Chinese laws and their respective employment contracts. However, if an employee has participated in a training program sponsored by the Company and signed an agreement with the Company on the term of service, and the term of service has not expired, the employee must make compensation in accordance with relevant Chinese laws and the provisions of the agreement on service term before being allowed to resign. Unless otherwise provided by Chinese law, resigning employees shall notify the Company in writing at least thirty (30) days in advance.

(b) The Company shall ensure that: (i) its employment contract with each employee includes a non-disclosure clause whereby each employee shall keep confidential any confidential information he has learned during his employment with the Company, and an invention assignment agreement whereby the employee shall assign to the Company any and all intellectual property rights relating to the Company; and (ii) its employment contracts with employees who hold management positions or have access to the Company's know-how or other confidential information shall include a non-compete clause whereby after termination of the employment contract with the Company, such employees shall not directly or indirectly work for any of the Company's competitors within the period permitted by relevant Chinese laws, provided that the Company shall pay them a certain amount of compensation in accordance with relevant labor laws and regulations.

Article 11 Tax, Accounting, Audit and Profit Distribution

11.1 Tax

The Company shall pay various taxes in accordance with relevant Chinese laws applicable to it.

11.2 Individual Income Tax

All employees of the Company shall pay individual income tax in accordance with the Individual Income Tax Law of the People's Republic of China and other applicable Chinese laws, and the Company shall withhold and pay the individual income tax.

11.3 Accounting System

(a) The Company shall establish its financial and accounting system in accordance with the Chinese Accounting System. If required, the Company's financial and accounting system should be reported to the local financial department and taxation agency for the record.

(b) Subject to Chinese laws and regulations, the Company shall timely and accurately provide AOS with the annual audit report, quarterly audit report, and other information required for a US listed company to comply with the US GAAP, to meet the requirements on AOS's financial reporting, quarterly review and annual audit, and U.S. regulatory agency's disclosure requirements. AOS will assume additional charges of external auditors for quarterly and annual audits required by AOS.

(c) The Company shall use the accounting accrual basis and debit and credit accounting method for bookkeeping, and shall prepare complete and accurate quarterly and annual financial statements in accordance with the Chinese Accounting System.

(d) The Company's fiscal year is based on the Gregorian calendar, starting on January 1 and ending on December 31 each year. The first fiscal year of the Company shall start from the date of its establishment and end on December 31 of the same year.

11.4 Shareholder's Right to Information

(a) The Company shall engage a reputable accounting firm practicing in China as its external auditor. The external auditor shall review the Company's accounts and issue the Company's consolidated annual financial audit report in accordance with the Chinese Accounting System. The above report shall be submitted by the Company's general manager to the board of directors for approval. The Company shall provide the external auditor with all documents and accounting books required by the external auditor to conduct the normal external audit work. The external auditor must agree to keep confidential all information obtained during the audit.

(b) Shareholders may request to inspect the Company's accounting books. If a Shareholder requests to inspect the Company's accounting books, it shall submit a written request to the Company explaining the purpose. If the Company has reasonable grounds to believe that the Shareholder's inspection of the accounting books has an improper purpose and may damage the Company's legitimate interests, it may refuse the request, and shall reply to the Shareholder in writing and explain the reasons within 15 days from the date of the Shareholder's written request. If the Company so refuses, the Shareholder may request the people's court to order the Company to provide inspection.

(c) From the execution date hereof, the Company shall provide Shareholders with the following information and materials from time to time:

(i) Providing before April 30 of each year the financial statements and operating reports of the Company and the consolidated financial statements and operating reports of the Company and its subsidiaries for the previous fiscal year audited by an accounting firm;

(ii) Providing unaudited financial statements (including income statement, balance sheet, cash flow statement) of the Company and its subsidiaries respectively for each year within forty-five (45) days after the end of the year;

(iii) Providing unaudited financial statements (including income statement, balance sheet and cash flow statement) of the Company and its subsidiaries respectively for each quarter within thirty (30) days after the end of the quarter;

(iv) Providing the financial budget for each year before March 31 of the year;

(v) Providing, at the request of Shareholders of the Company, all information necessary to satisfy such Shareholders' tax filing, internal audit or compliance requirements within a reasonable time;

(vi) Promptly notifying Shareholders of the Company of material lawsuits brought against the Company, administrative penalties, material non-compliance notices issued by government authorities against any group member, and other events that may have a material adverse effect on the operations of any group member;

(vii) Providing other documents and materials required by the Shareholders.

(d) Upon the reasonable request of Shareholders or their appointed directors, they have the right to request relevant personnel of the Company to cooperate with them to understand relevant information of the Company, provided that the normal business activities of the Company shall not be affected.

11.5 Foreign Exchange

All foreign exchange matters of the Company shall be handled in accordance with Chinese laws on foreign exchange. Subject to the applicable provisions on foreign exchange, the foreign exchange funds in the Company's foreign exchange account shall be used for the following purposes:

(a) Repayment of principal and interest of the Company’s foreign currency loans;

(b) Payment for the purchase of imported equipment and materials;

(c) Payment for profit distribution to AOS or damages as agreed in this Contract; and

(d) Other foreign exchange expenditures.

11.6 Related Party Transactions

The Parties shall ensure the fairness of the Company's related party transactions, ensure that the Company's related party transactions will not harm the interests of the Company and all Shareholders, be in line with the principles of fairness, impartiality and openness, and meet relevant requirements for Qualified Listing. Subject to the above principles, the Company and AOS shall negotiate amicably a fair market price after considering the market conditions, purchase volume and other factors.

Since AOS is a major customer of the Company, the company shall provide AOS with a wafer production capacity guarantee of [*] wafers per month from the effective date of this Contract to December 31, 2023, and after the Company's wafer production capacity reaches [*] wafers per month, the Company shall provide AOS with a wafer production capacity guarantee of [*] wafers per month. Meanwhile, AOS shall provide the Company with a specific production capacity demand plan on a regular basis. The annual daily related party transaction plan prepared by the Company shall include the production capacity guarantee arrangement stipulated in this article, and all Shareholders shall vote for the production capacity guarantee arrangement at the Company's Shareholder’s Meeting. According to the current requirements of laws, regulations and review rules, if this article does not meet the relevant laws, regulations and review requirements at the time of listing counseling and filing, the Parties agree to negotiate amicably to resolve such issue to meet the listing requirements in accordance with relevant rules and considering the interests of the Parties, and the Parties will procure the securities firm to use its best efforts to communicate with the listing regulator on this article.

11.7 Profit Distribution

(a) When the Company distributes the after-tax profits of the current year, 10% of its profits shall be allocated to its statutory reserve. If the accumulative amount of the Company's statutory reserve reaches 50% or more of the Company's registered capital, no more statutory reserve is required to withdraw;

(b) After the Company has withdrawn the statutory reserve from the after-tax profit, it can also withdraw any optional reserve from the after-tax profit upon a resolution of the Shareholder's Meeting;

(c) The remaining after-tax profits of the Company after making up the losses and withdrawing the reserves shall be distributed according to the proportion of the actual capital contribution of each Party in the Company. If there is any loss in the previous year, the profit distribution shall be made after making up the loss. The undistributed distributable profits of previous years can be combined into the profits of the current year for distribution;

(d) The Company shall wire the profits distributed to the Parties to their respective bank accounts designated in writing. Among them, the profits distributed to AOS shall be paid in USD.

Article 12 Term of the Company

12.1 Term of the Company

The Term of the Company shall be permanent starting from April 22, 2016.

Article 13 Dissolution and Liquidation

13.1 Dissolution

The Company shall be dissolved for the following reasons:

(a) The business period stipulated in the Company's Articles of Association expires or other reasons for dissolution stipulated in the Company's Articles of Association occur;

(b) The Shareholder's Meeting resolve to dissolve the Company;

(c) The Company is required to dissolve for merger or division;

(d) The Company has its business license revoked, is ordered to close down or is cancelled according to law;

(e) The Company is dissolved by the people's court according to Article 182 of the Company Law.

13.2 Liquidation Group

(a) If the Company is dissolved in accordance with the reasons stipulated in the Articles of Association, a liquidation group shall be established to start the liquidation within 15 days from the date of occurrence of the reasons for dissolution. The Company's liquidation group shall be composed of Shareholders. If a liquidation group is not established for liquidation within the time limit, the creditors may apply to the people's court to designate relevant personnel to form a liquidation group for liquidation.

(b) The costs and expenses of the liquidation group shall be paid by the Company.

(c) After the liquidation of the Company is completed, the liquidation group shall prepare a liquidation report, submit it to the Shareholder’s Meeting or the people's court for confirmation, and file it to the Company’s registration authority for cancelling the Company's registration and announcing termination of the Company.

13.3 Survival

If this Contract is terminated early and the Company is required to be liquidated, any obligations and liabilities of either Party to the Company or the other Party arising before the date on which the Shareholder’s Meeting makes the decision to liquidate the Company shall survive and continue to be performed.

13.4 Liquidation Preference

In the case of the Company’s liquidation due to early termination of the Company, the distribution of the remaining property of the Company after paying relevant expenses and debts stipulated in the Company Law and the Company's Articles of Association shall be made as follows:

(a) Priority shall be given to new investors in proportion to their respective total paid-in capital contributions under the capital increase agreement; provided however that the new investor’s total paid-in capital contributions under the capital increase agreement shall not be exceeded; then

(b) Distributed to other Shareholders other than the new investors in proportion to their paid-in capital contributions, provided however that the total paid-in capital contributions of such Shareholders shall not be exceeded; then

(c) The balance after the Company's distribution shall be distributed among all Shareholders of the Company according to the paid-in capital contribution ratio at the time of liquidation.

(d) The above-mentioned liquidation preference for new investors shall not apply to the capital contributions of the Original Shareholders assumed by the new investors.

Article 14 Breach and Liability

14.1 Breach

If one Party fails to perform any of its obligations under this Contract or the Articles of Association, or if any of its representations or warranties under this Contract are untrue or inaccurate, it shall constitute a breach of this Contract.

14.2 Liability for Breach

(a) In the event of a breach of this Contract or the Articles of Association, the breaching Party shall be liable for the direct actual loss of the other Parties arising from its breach.

(b) If either Party breaches this Contract, and the breaching Party fails to take remedial measures to the satisfaction of the non-breach Parties within 30 days after the breach, the breaching Party shall be liable for compensation. In the event of the above breach of contract, the non-breaching Party has the right to suspend the performance of the obligations under this Contract until the breaching Party takes remedial measures to the satisfaction of the non-breaching Parties or bears full compensation liability.

(c) If one Party fails to perform any of its obligations under this Contract or the Articles of Association, or if any representations or warranties it makes in this Contract are materially untrue or inaccurate, it shall constitute a breach of this Contract and the Party shall be the breaching Party. In such event, the other Parties shall notify the breaching Party in writing of the breach of this Contract, and where such breach is remediable, the breaching Party shall remedy its breach within thirty (30) days from the date of notification. If the breach cannot be remedied, or the breaching Party has not remedied the breach by the expiration of the thirty (30)-day period, the other Parties shall have the right to terminate this Contract by giving written notice to the breaching Party.

14.3 Dispute over Remedies

If the breaching Party has a dispute over the other Party's right to terminate this Contract in accordance with the provisions hereof, the dispute shall be resolved in accordance with the provisions of Article 19 (Dispute Resolution) of this Contract.

Article 15 Insurances

The Company can purchase various insurances from foreign insurance companies or Chinese insurance companies that are registered in China and can provide insurances to the Company.

Article 16 Force Majeure

16.1 Force Majeure Events

A force majeure event ("**Force Majeure**") means any act or event that is reasonably unforeseeable and unavoidable and beyond the control of the affected Party, including but not limited to earthquakes, typhoons, floods, other natural disasters, fires, wars, riots, terrorisms, COVID-19 pandemic and other public health emergencies, or any other unforeseeable or unavoidable acts or events that are recognized as force majeure events according to international business practices. However, for the purpose of this Contract, Force Majeure shall not include any shortage of funds, general change of economy or market or any labor disputes.

16.2 Occurrence of Event

If one Party cannot perform any of its obligations and responsibilities under this Contract due to the occurrence of any force majeure event, it shall notify the other Parties in writing within thirty (30) days after the occurrence of the force majeure event, provide the other Parties with the details of and documents proving the event (including written evidence issued by a government department or judicial department or any other competent authority), explain the reasons for its inability to perform this Contract, and, where possible, take steps to mitigate losses.

16.3 Exemption of Liability

In the event of a force majeure event, neither Party shall be liable for any damages, increased costs or losses that may be suffered by the other Parties due to the failure or delay in the performance of any of its obligations under this Contract, and such failure or delay in performance shall not be deemed a breach of this Contract. The Party claiming the occurrence of force majeure event shall take appropriate measures to reduce or eliminate the effects of force majeure, and try to resume performance of the obligations affected by the force majeure event as soon as possible.

Article 17 Representations, Warranties and Undertakings

17.1 Representations, Warranties and Undertakings of [*]

(a) It is a limited partnership which is duly established, validly existing and in good standing under the Laws of China;

(b) It has full legal right, power and authority to execute, deliver and perform this Contract and all contracts, agreements and documents as mentioned herein to which it is a party;

(c) It has taken all appropriate and necessary actions (including shareholder's resolutions and/or board resolutions, as the case may be) to authorize the execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein, and its representative signing this Contract has been fully authorized to sign this Contract and bind it under a valid power of attorney;

(d) It has obtained all necessary consents, approvals and authorizations of the Company, any third party or otherwise as required by laws and regulations for the valid execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein to which it is a party, and this Contract, upon entry into force, shall constitute its legal, valid and binding obligation which may be enforceable against it in accordance with the terms hereof;

(e) The execution and performance of this Contract or the consummation of the transaction contemplated by this Contract shall not violate or conflict with any term or provision of any Articles of Association, contracts, agreements, laws, and regulations to which it is a party or which bind it, shall not cause a violation of such term or provision, nor shall constitute a breach under such term or provision, including its constitutional documents, business license, rules of procedure or Articles of Association;

(f) There are no pending or threatened claims against it in respect of the matters under this Contract or any claims that may in any way affect its ability to enter into or perform this Contract;

(g) All documents, representations and information held by it relating to the transaction contemplated by this Contract that may have a material adverse effect on its ability to fully perform its obligations under this Contract, or, if disclosed to the other Parties, will have a material adverse effect on the other Parties' willingness to enter into this Contract have been fully disclosed to the other Parties, and none of the documents previously provided by it to the other Parties contains any untrue statements of material facts, or has omitted any material facts necessary for the statements contained therein to be not misleading;

(h) It has no unfulfilled commitments or obligations (whether contractual or otherwise) that may in any way interfere with its ability or right to enter into and perform this Contract;

(i) It has not possessed or used and does not possess or use the Company's property for free;

(j) It has paid all the registered capital subscribed by it to the Company and the capital contribution is legal. The source of funds used for its capital contribution is legal. If its capital contribution is made in any property other than cash, there is no over-valuation or under-valuation of such property.

17.2 Representations, Warranties and Undertakings of [*]

(a) It is a limited liability company which is duly established, validly existing and in good standing under the Laws of China;

(b) It has full legal right, power and authority to execute, deliver and perform this Contract and all contracts, agreements and documents as mentioned herein to which it is a party;

(c) It has taken all appropriate and necessary actions to authorize the execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein, and its representative signing this Contract has been fully authorized to sign this Contract and bind it under a valid power of attorney;

(d) It has obtained all necessary consents, approvals and authorizations of the Company, any third party or otherwise as required by laws and regulations for the valid execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein to which it is a party, and this Contract, upon entry into force, shall constitute its legal, valid and binding obligation which may be enforceable against it in accordance with the terms hereof;

(e) The execution and performance of this Contract or the consummation of the transaction contemplated by this Contract shall not violate or conflict with any term or provision of any Articles of Association, contracts, agreements, laws, and regulations to which it is a party or which bind it, shall not cause a violation of such term or provision, nor shall constitute a breach under such term or provision, including its constitutional documents, business license, rules of procedure or Articles of Association;

(f) There are no pending or threatened claims against it in respect of the matters under this Contract or any claims that may in any way affect its ability to enter into or perform this Contract;

(g) All documents, representations and information held by it relating to the transaction contemplated by this Contract that may have a material adverse effect on its ability to fully perform its obligations under this Contract, or, if disclosed to the other Parties, will have a material adverse effect on the other Parties' willingness to enter into this Contract have been fully disclosed to the other Parties, and none of the documents previously provided by it to the other Parties contains any untrue statements of material facts or has omitted any material facts necessary for the statements contained therein to be not misleading

(h) It has no unfulfilled commitments or obligations (whether contractual or otherwise) that may in any way interfere with its ability or right to enter into and perform this Contract;

(i) It has not possessed or used and does not possess or use the Company's property for free;

(j) It has paid all the registered capital subscribed by it to the Company and the capital contribution is legal. The source of funds used for its capital contribution is legal. If its capital contribution is made in any property other than cash, there is no over-valuation or under-valuation of such property.

17.3 Representations, Warranties and Undertakings of [*]

(a) It is a limited partnership which is duly established, validly existing and in good standing under the Laws of China;

(b) It has full legal right, power and authority to execute, deliver and perform this Contract and all contracts, agreements and documents as mentioned herein to which it is a party;

(c) It has taken all appropriate and necessary actions (including shareholder's resolutions and/or board resolutions, as the case may be) to authorize the execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein, and its representative signing this Contract has been fully authorized to sign this Contract and bind it under a valid power of attorney;

(d) It has obtained all necessary consents, approvals and authorizations of the Company, any third party or otherwise as required by laws and regulations for the valid execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein to which it is a party, and this Contract, upon entry into force, shall constitute its legal, valid and binding obligation which may be enforceable against it in accordance with the terms hereof;

(e) The execution and performance of this Contract or the consummation of the transaction contemplated by this Contract shall not violate or conflict with any term or provision of any Articles of Association, contracts, agreements, laws, and regulations to which it is a party or which bind it, shall not cause a violation of such term or provision, nor shall constitute a breach under such term or provision, including its constitutional documents, business license, rules of procedure or Articles of Association;

(f) There are no pending or threatened claims against it in respect of the matters under this Contract or any claims that may in any way affect its ability to enter into or perform this Contract;

(g) All documents, representations and information held by it relating to the transaction contemplated by this Contract that may have a material adverse effect on its ability to fully perform its obligations under this Contract, or, if disclosed to the other Parties, will have a material adverse effect on the other Parties' willingness to enter into this Contract have been fully disclosed to the other Parties, and none of the documents previously provided by it to the other Parties contains any untrue statements of material facts, or has omitted any material facts necessary for the statements contained therein to be not misleading;

(h) It has no unfulfilled commitments or obligations (whether contractual or otherwise) that may in any way interfere with its ability or right to enter into and perform this Contract;

(i) It has not possessed or used and does not possess or use the Company's property for free;

(j) It has paid all the registered capital subscribed by it to the Company and the capital contribution is legal. The source of funds used for its capital contribution is legal. If its capital contribution is made in any property other than cash, there is no over-valuation or under-valuation of such property.

17.4 <u>Representations, Warranties and Undertakings of the Employee Stock Ownership Platform</u>

(a) It is a limited partnership which is duly established, validly existing and in good standing under the Laws of China;

(b) It has full legal right, power and authority to execute, deliver and perform this Contract and all contracts, agreements and documents as mentioned herein to which it is a party;

(c) It has taken all appropriate and necessary actions to authorize the execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein, and its representative signing this Contract has been fully authorized to sign this Contract and bind it under a valid power of attorney;

(d) It has obtained all necessary consents, approvals and authorizations of the Company, any third party or otherwise as required by laws and regulations for the valid execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein to which it is a party, and this Contract, upon entry into force, shall constitute its legal, valid and binding obligation which may be enforceable against it in accordance with the terms hereof;

(e) The execution and performance of this Contract or the consummation of the transaction contemplated by this Contract shall not violate or conflict with any term or provision of any Articles of Association, contracts, agreements, laws, and regulations to which it is a party or which bind it, shall not cause a violation of such term or provision, nor shall constitute a breach under such term or provision, including its constitutional documents, business license, rules of procedure or Articles of Association;

(f) There are no pending or threatened claims against it in respect of the matters under this Contract or any claims that may in any way affect its ability to enter into or perform this Contract;

(g) All documents, representations and information held by it relating to the transaction contemplated by this Contract that may have a material adverse effect on its ability to fully perform its obligations under this Contract, or, if disclosed to the other Parties, will have a material adverse effect on the other Parties' willingness to enter into this Contract have been fully disclosed to the other Parties, and none of the documents previously provided by it to the other Parties contains any untrue statements of material facts, or has omitted any material facts necessary for the statements contained therein to be not misleading;

(h) It has no unfulfilled commitments or obligations (whether contractual or otherwise) that may in any way interfere with its ability or right to enter into and perform this Contract;

(i) It has not possessed or used and does not possess or use the Company's property for free;

(j) It has paid all the registered capital subscribed by it to the Company and the capital contribution is legal. The source of funds used for its capital contribution is legal. If its capital contribution is made in any property other than cash, there is no over-valuation or under-valuation of such property.

17.5 Representations, Warranties and Undertakings of AOS

(a) It is a company which is duly established, validly existing and in good standing under the laws of its place of registration;

(b) It has full legal right, power and authority to execute, deliver and perform this Contract and all contracts, agreements and documents as mentioned herein to which it is a party;

(c) It has taken all appropriate and necessary actions to authorize the execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein, and its representative signing this Contract has been fully authorized to sign this Contract and bind it under a valid power of attorney;

(d) It has obtained all necessary consents, approvals and authorizations of the Company, any third party or otherwise as required by laws and regulations for the valid execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein to which it is a party, and this Contract, upon entry into force, shall constitute its legal, valid and binding obligation which may be enforceable against it in accordance with the terms hereof;

(e) The execution and performance of this Contract or the consummation of the transaction contemplated by this Contract shall not violate or conflict with any term or provision of any Articles of Association, contracts, agreements, laws, and regulations to which it is a party or which bind it, shall not cause a violation of such term or provision, nor shall constitute a breach under such term or provision, including its constitutional documents, business license, rules of procedure or Articles of Association;

(f) There are no pending or threatened claims against it in respect of the matters under this Contract or any claims that may in any way affect its ability to enter into or perform this Contract;

(g) All documents, representations and information held by it relating to the transaction contemplated by this Contract that may have a material adverse effect on its ability to fully perform its obligations under this Contract, or, if disclosed to the other Parties, will have a material adverse effect on the other Parties' willingness to enter into this Contract have been fully disclosed to the other Parties, and none of the documents previously provided by it to the other Parties contains any untrue statements of material facts or has omitted any material facts necessary for the statements contained therein to be not misleading;

(h) It has no unfulfilled commitments or obligations (whether contractual or otherwise) that may in any way interfere with its ability or right to enter into and perform this Contract;

(i) It has not possessed or used and does not possess or use the Company's property for free;

(j) It has paid all the registered capital subscribed by it to the Company and the capital contribution is legal. The source of funds used for its capital contribution is legal. If its capital contribution is made in any property other than cash, there is no over-valuation or under-valuation of such property.

17.6 Representations, Warranties and Undertakings of [*]

(a) It is a limited liability company which is duly established, validly existing and in good standing under the Laws of China;

(b) It has full legal right, power and authority to execute, deliver and perform this Contract and all contracts, agreements and documents as mentioned herein to which it is a party;

(c) It has taken all appropriate and necessary actions to authorize the execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein, and its representative signing this Contract has been fully authorized to sign this Contract and bind it under a valid power of attorney;

(d) It has obtained all necessary consents, approvals and authorizations of the Company, any third party or otherwise as required by laws and regulations for the valid execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein to which it is a party, and this Contract, upon entry into force, shall constitute its legal, valid and binding obligation which may be enforceable against it in accordance with the terms hereof;

(e) The execution and performance of this Contract or the consummation of the transaction contemplated by this Contract shall not violate or conflict with any term or provision of any Articles of Association, contracts, agreements, laws, and regulations to which it is a party or which bind it, shall not cause a violation of such term or provision, nor shall constitute a breach under such term or provision, including its constitutional documents, business license, rules of procedure or Articles of Association;

(f) There are no pending or threatened claims against it in respect of the matters under this Contract or any claims that may in any way affect its ability to enter into or perform this Contract;

(g) All documents, representations and information held by it relating to the transaction contemplated by this Contract that may have a material adverse effect on its ability to fully perform its obligations under this Contract, or, if disclosed to the other Parties, will have a material adverse effect on the other Parties' willingness to enter into this Contract have been fully disclosed to the other Parties, and none of the documents previously provided by it to the other Parties contains any untrue statements of material facts or has omitted any material facts necessary for the statements contained therein to be not misleading;

(h) It has no unfulfilled commitments or obligations (whether contractual or otherwise) that may in any way interfere with its ability or right to enter into and perform this Contract;

(i) It has not possessed or used and does not possess or use the Company's property for free;

(j) It has paid all the registered capital subscribed by it to the Company and the capital contribution is legal. The source of funds used for its capital contribution is legal. If its capital contribution is made in any property other than cash, there is no over-valuation or under-valuation of such property.

17.7 Each of [*], [*], [*], [*], [*], [*] and [*] represents, warrants and undertakes that

(a) It is a [limited partnership] which is duly established, validly existing and in good standing under the laws of [China];

(b) It has full legal right, power and authority to execute, deliver and perform this Contract and all contracts, agreements and documents as mentioned herein to which it is a party;

(c) It has taken all appropriate and necessary actions (including shareholder's resolutions and/or board resolutions, as the case may be) to authorize the execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein, and its representative signing this Contract has been fully authorized to sign this Contract and bind it under a valid power of attorney;

(d) It has obtained all necessary consents, approvals and authorizations of the Company, any third party or otherwise as required by laws and regulations for the valid execution, delivery and performance of this Contract and all contracts, agreements and documents as mentioned herein to which it is a party, and this Contract, upon entry into force, shall constitute its legal, valid and binding obligation which may be enforceable against it in accordance with the terms hereof;

(e) The execution and performance of this Contract or the consummation of the transaction contemplated by this Contract shall not violate or conflict with any term or provision of any Articles of Association, contracts, agreements, laws, and regulations to which it is a party or which bind it, shall not cause a violation of such term or provision, nor shall constitute a breach under such term or provision, including its constitutional documents, business license, rules of procedure or Articles of Association;

(f) There are no pending or threatened claims against it in respect of the matters under this Contract or any claims that may in any way affect its ability to enter into or perform this Contract;

(g) All documents, representations and information held by it relating to the transaction contemplated by this Contract that may have a material adverse effect on its ability to fully perform its obligations under this Contract, or, if disclosed to the other Parties, will have a material adverse effect on the other Parties' willingness to enter into this Contract have been fully disclosed to the other Parties, and none of the documents previously provided by it to the other Parties contains any untrue statements of material facts, or has omitted any material facts necessary for the statements contained therein to be not misleading;

(h) It has no unfulfilled commitments or obligations (whether contractual or otherwise) that may in any way interfere with its ability or right to enter into and perform this Contract;

(i) It has not possessed or used and does not possess or use the Company's property for free;

(j) It has paid all the registered capital subscribed by it to the Company and the capital contribution is legal. The source of funds used for its capital contribution is legal. If its capital contribution is made in any property other than cash, there is no over-valuation or under-valuation of such property.

(k) It hereby confirms that, in order to achieve the Qualified Listing of the Company, from the date when the Company submits the listing materials ("**Listing Application**") to the relevant regulatory authorities and exchanges where the Company is listed, including but not limited to the China Securities Regulatory Commission, the Shanghai Stock Exchange or the Shenzhen Stock Exchange and such Listing Application is accepted by the aforementioned authorities, it shall terminate its special rights in this Contract or all other documents (including the right with respect to corporate governance, equity transfer restrictions, right of first refusal, right of co-sale, pre-emptive right, anti-dilution right, drag-along rights, liquidation preference, etc.), and actively cooperate with the Company to sign documents and issue relevant statements, commitments, etc.

Article 18 Confidentiality

18.1 Confidentiality

Before the signing and during the term of this Contract, each Party has disclosed or may disclose confidential or proprietary information concerning its business, financial condition, know-how, research and development and other confidential matters to the other Parties, and during the term of this Contract, the Parties may also disclose the above information to the Company, and the Company's such information (including but not limited to this Contract and the Articles of Association) may also be disclosed to the Parties (hereinafter collectively referred to as "Confidential Information"). Each Party and Company receiving the Confidential Information shall, during the term of this Contract (including any renewal thereof) and for three (3) years after termination of this Contract:

(a) limit access to the Confidential Information to the directors, officers and employees who are required to access to such information for the performance of this Contract;

(b) not directly or indirectly disclose, communicate, assign, transfer, license or deliver any Confidential Information to any third party; and

(c) not use the Confidential Information for any purpose other than the performance of this Contract.

18.2 Exceptions

Article 18.1 on non-disclosure does not apply to the following:

(a) Confidential communications with respective affiliates, professional advisers or banks of the Parties who assume equivalent obligation of confidentiality;

(b) Disclosures required by applicable laws and regulations; provided that the Party encountering such a request must promptly notify the Party providing the Confidential Information in writing of such a request;

(c) Information that has become public knowledge through no fault of the receiving Party of the confidential information;

(d) Submitting this Shareholders Contract for handling government filing, registration or approval procedures related to this Shareholders Contract, including but not limited submitting the same according to the requirements of the administration for market regulation or other relevant government departments;

(e) Providing this Shareholders Contract to relevant financier and its nominee (provided that the financier has properly and promptly signed a confidentiality agreement with the Company) according to the due diligence investigation required for or other legal procedure relating to the financing needs of the Company; and

(f) Any information disclosed in good faith to the recipient by a third party who is not bound by any obligation of confidentiality.

18.3 Confidentiality Measures

The Parties shall ensure that the Company informs its directors, supervisors, officers and employees who have access to any Confidential Information of the existence and requirements of Article 18.1, and formulate rules and regulations to procure the directors, supervisors, officers, and employees of the Parties and their respective affiliates to comply with the confidentiality obligations set out in Article 18.1. The Parties shall, and shall ensure the Company to, sign confidentiality agreements with all directors, supervisors, officers and employees who have access to any Confidential Information (if the employment contracts or other relevant contracts or agreements that have been signed with such personnel include confidentiality terms, it shall be deemed that a confidentiality agreement has been signed).

Article 19 Dispute Resolution

19.1 Dispute Resolution

Any disputes, controversies or claims arising out of or in connection with this Contract or any breach of this Contract (collectively the "**Disputes**") shall be submitted to the Hong Kong International Arbitration Centre ("**HKIAC**") for arbitration in accordance with its Arbitration Rules which shall be deemed to be incorporated into Article [19] of this Contract, except as amended by this Article [19]. The arbitration shall be conducted by an arbitral tribunal composed of three (3) arbitrators. Among them, the Party or Parties making the arbitration application shall appoint one arbitrator; the Party or Parties to which the arbitration application is made shall appoint another arbitrator; the third arbitrator shall be appointed by the above two arbitrators and shall serve as the presiding arbitrator . If the first two arbitrators are unable to appoint the third arbitrator within twenty one (21) days of the appointment of the second arbitrator, the third arbitrator shall be appointed by the Chairman of the HKIAC. The award made by the arbitral tribunal shall be final and binding on the Parties to the dispute.

19.2 Place and Language of Arbitration

The place of arbitration shall be Hong Kong, and the language used in the arbitration proceedings shall be Chinese.

19.3 Period for Making the Arbitral Award

The Parties irrevocably agree that the arbitral tribunal shall make a final award within six (6) months from the date of its constitution; however, the arbitral tribunal has the power to extend the above period at the well-founded request of either Party or as it deems necessary.

19.4 Continue to Perform

During the dispute resolution period, the Parties shall continue to perform other terms of this Contract except the disputed matters.

Article 20 Special Arrangements

20.1 Patent Maintenance

The Company shall be responsible for the costs of maintaining its patents, including existing and future sublicensed technology.

20.2 Pre-emptive Right

After the completion of this transaction, if the Company increases capital or issues new shares before its listing filing, each Shareholder has the right to subscribe for the Company's new series of capital increase on the same conditions and in accordance with the proportion of each Shareholder's capital contribution to the Company before the capital increase or issuance of new shares, except for the issue of new shares for the purpose of employee equity incentives.

The Company shall, at least sixty (60) days prior to the proposed capital increase or issue of new shares, give each of the Company's Shareholders a written notice of the proposed capital increase or issue of new shares (the "Proposed Capital Increase Notice"), setting out (i) the amount, type and terms of the proposed capital increase; (ii) the consideration that the Company can receive after implementation of the proposed capital increase.

If each Party elects to exercise the pre-emptive right within twenty (20) days of receipt of the Proposed Capital Increase Notice (the "Subscription Period"), it shall submit a written notice to the Company (the "Exercise Notice") setting out the amount of the proposed capital increase that it intends to purchase. If any Shareholder of the Company fails to submit the Exercise Notice within the Subscription Period, it is deemed that such party (“Unsubscribing Shareholder”) has waived the exercise of the preemptive rights in relation to the proposed capital increase. The Company shall, within three (3) days after the expiration of the Subscription Period, notify other investors who have exercised their pre-emptive rights in full (“Subscribing Shareholders”) in writing of the Unsubscribing Shareholders’ failure to exercise their pre-emptive rights. Subscribing Shareholders may submit a written notice (“Second Subscription Notice”) to the Company within seven (7) days after receipt of the Company’s written notice (“Second Subscription Period”) confirming the purchase of the proposed capital increase unsubscribed by the Unsubscribing Shareholder ("Unsubscribed Proposed Capital Increase"). If two or more Subscribing Shareholders reply in writing to the Company to continue the subscription, they shall purchase the Unsubscribed Proposed Capital Increase in proportion to their respective capital contributions. If the Subscribing Shareholders fail to submit a Second Subscription Notice to the Company within the Second Subscription Period, they shall be deemed to have waived purchase of the Unsubscribed Proposed Capital Increase.

3 Anti-dilution Rights

20.3.1 If the Company increases its registered capital within [24] months after the signing of this Contract, and new investors subscribe for the Company's newly increased registered capital (the "Subsequent Financing") at a price per share lower than the Investors’ Investment Unit Price, New Investors have the right to require the Company to undertake anti-dilution obligations to them so that the New Investors obtain additional equity (“Compensation Equity”). The Compensation Equity shall be calculated and determined in accordance with the generalized weighted average method so that its investment unit price is consistent with the new issue price.

20.3.2 In order to obtain Compensation Equity, the Company shall actively promote the performance and implementation of the above-mentioned anti-dilution obligations in Article 20.3.1. The Company may choose one of the following methods to facilitate the New Investors to obtain Compensation Equity:

(a) To the extent permitted by the current applicable law, the Company shall issue additional equity to the New Investors at a price not lower than the nominal value of the registered capital (for the avoidance of doubt, the subscription price paid by the New Investors for subscription of such newly increased registered capital shall be reimbursed by the Company); or

(b) To the extent permitted by the current applicable law, the Company will pay cash compensation directly to the New Investors. The amount of cash compensation is: the equivalent cash amount of the capital contribution corresponding to the difference between the equity to be obtained by the New Investors which is adjusted according to the consideration paid by the new investors who have subscribed for the new registered capital of the Subsequent Financing and the equity of the Company that the new investors have acquired through this capital increase.

20.3.3 Exceptions to Anti-dilution Rights

Issue of shares under the following circumstances is not subject to anti-dilution rights: (i) issue of new shares or increase of registered capital in accordance with the employee stock incentive plan approved by the board of directors; (ii) adjustment due to stock splits, dividend distributions, recapitalizations and similar transactions; (iii) any acquisition transaction of the Company in which the Company issues shares as consideration.

Article 21 Miscellaneous Provisions

21.1 Effectiveness, Term and Extension

(a) This Contract shall become effective and binding upon the Parties after it is signed by the duly authorized representatives of the Parties. This Contract is made in [thirty (30)] counterparts.

(b) This Contract shall continue in effect until the expiry or early termination of the Company’s Term. When the Company’s Term is extended, the term of this Contract shall be extended accordingly.

21.2 Applicable Law

The conclusion, validity, interpretation and performance of this Contract and the settlement of any disputes arising hereunder shall be governed by the Laws of China.

21.3 Entire Agreement

This Contract supersedes all previous oral agreements, commitments and communications between the Parties based on the Joint Venture Contract for the Establishment of Chongqing Alpha and Omega Semiconductor Limited (the "Joint Venture") signed by the Original Shareholders on March 29, 2016. The rights and obligations before this Contract takes effect shall be understood and explained in accordance with the provisions of the Joint Venture Contract, and the rights and obligations after this Contract takes effect shall be understood and explained in accordance with the provisions of this Contract.

If the content of this Contract is inconsistent with relevant provisions of the Company's Articles of Association and the current laws and regulations, the provisions of the current relevant laws and regulations shall prevail.

21.4 Headings

The headings in this Contract are for convenience only and shall not be taken into account when interpreting this Contract.

21.5 Amendment

No amendment to this Contract shall become effective until the duly authorized representatives of the Parties sign a written agreement.

21.6 Severability

If any term or provision of this Contract is held to be invalid or unenforceable in whole or in part under any applicable law, such term or provision shall be excluded from this Contract only to the extent of such invalidity or unenforceability, and all other terms and provisions shall remain in full force and effect. In such event, the Parties shall use their best efforts to enforce the letter and spirit of this Contract and shall substitute valid and enforceable term or provision that conform to the spirit and purpose of such invalid or unenforceable term or stipulation as far as possible.

21.7 Successors and Assigns

This Contract shall bind and insure for the benefit of the Parties and their respective successors and managers as well as the assigns who receive the benefit of the Parties in the Company according to laws and the terms and conditions of this Contract.

21.8 Costs and Expenses

(a) Each Party shall assume any costs, expenses or amounts incurred before the signing of this Contract, unless other Parties agree in writing to share the same or agree in writing that the Company shall assume the same.

(b) After the signing of this Contract, any expenses related to company registration incurred by either Party shall be borne by the Company if it is provided that the registered company shall assume such expenses according to the Chinese law; otherwise, the Company may assume such expenses upon the approval of the Shareholder's Meeting.

(c) Unless as otherwise stipulated in this Article 21.8, if this Contract has any special provisions on costs and expenses, such special provisions shall apply.

21.9 Waiver

The delay or failure by either Party to exercise any of its powers, rights or remedies hereunder shall be construed as a waiver of such powers, rights or remedies, and any single or partial exercise shall not preclude any other exercise. No waiver by one Party of any provision of this Contract shall be deemed a waiver of any other provision of this Contract, nor shall such waiver be construed as a waiver of such provision with respect to any other event or circumstance (whether past, present or future). In addition, the remedies provided in this Contract are cumulative and do not exclude any remedies provided by law.

21.10 Notice

Any significant communications between the Parties and between a party and the Company shall be sent by (i) personal delivery or (ii) postage prepaid air express (using an internationally recognized express company such as FedEx, UPS, DHL, EMS, and EMS can only be used for mailing to addresses within China), respectively, to the following addresses of each Party and the Company or to the following e-mail addresses stipulated in this Contract. All the above notices shall be deemed to be effectively delivered or received (i) upon receipt in the case of personal delivery; (ii) on the tenth (10^{th}) working day (subject to the working day in the recipient's country) after delivery to an internationally recognized express company in the case of air express; (iii) upon receipt of the recipient's confirmation of receiving the communication in the case of email.

(a) To [*]:

Email：[*]
Address： [*]
Attention： [*]

Email：[*]
Address： [*]
Attention： [*]

(b) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(c) To AOS:

Email：[*]
Address： [*]
Attention： [*]

(d) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(e) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(f) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(g) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(h) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(i) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(j) To [*]:

Email：[*]

Address： [*]
Attention： [*]

(k) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(l) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(m) To [*]:

Email：[*]
Address： [*]
Attention： [*]

(n)To [*]:

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(p)To [*]:

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Address： [*]
Attention： [*]

(q)To [*]:

Email：[*]
Address： [*]
Attention： [*]

(r) To [*]:

Email：[*]
Address： [*]
Attention： [*]

During the term of this Contract, either Party may change its address at any time, but it shall immediately notify the other investors and the Company in writing.

[Signature page follows]

(Signature page of Shareholders Contract of Chongqiong Alpha and Omega Semiconductor Limited)

[*]

Signature of Authorized Representative:
Name: [*]
Title: Legal Representative

(Enterprise Seal)

(Signature page of Shareholders Contract of Chongqiong Alpha and Omega Semiconductor Limited)

Alpha & Omega Semiconductor (Shanghai) Ltd.

Signature of Authorized Representative:
Name: Zhen Du
Title: Legal Representative

(Enterprise Seal)

(Signature page of Shareholders Contract of Chongqiong Alpha and Omega Semiconductor Limited)

Agape Package Manufacturing (Shanghai) Limited.

Signature of Authorized Representative:
Name: BING XUE
Title: Legal Representative

(Enterprise Seal)

(Signature page of Shareholders Contract of Chongqiong Alpha and Omega Semiconductor Limited)

Alpha and Omega Semiconductor Limited

Signature of Authorized Representative:
Name: MIKE FUSHING CHANG
Title: Chairman

(Signature page of Shareholders Contract of Chongqiong Alpha and Omega Semiconductor Limited)

[*]

Signature of Authorized Representative:
Name: [*]
Title: Representative Appointed by Managing Partner

(Enterprise Seal)

(Signature page of Shareholders Contract of Chongqiong Alpha and Omega Semiconductor Limited)

[*]

Signature of Authorized Representative:
Name: [*]
Title: Legal Representative

(Enterprise Seal)

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Signature of Authorized Representative:
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Title: Representative Appointed by Managing Partner

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(Signature page of Shareholders Contract of Chongqiong Alpha and Omega Semiconductor Limited)

[*]

Signature of Authorized Representative:
Name: [*]
Title: Representative Appointed by Managing Partner

(Enterprise Seal)

(Signature page of Shareholders Contract of Chongqiong Alpha and Omega Semiconductor Limited)

[*]

Signature of Authorized Representative:
Name: [*]
Title: Representative Appointed by Managing Partner

(Enterprise Seal)

Exhibit 21.1

SUBSIDIARIES OF THE REGISTRANT

Subsidiary Name	Incorporated Location	Percentage Owned
Alpha and Omega Semiconductor Incorporated	California, United States	100% owned by AOS
Alpha and Omega Semiconductor (Cayman) Ltd.	Cayman	100% owned by AOS
Alpha and Omega Semiconductor (Shanghai) Co., Ltd.	China	100% owned by AOS
Alpha & Omega Semiconductor (Shenzhen) Limited	China	100% owned by AOS
Alpha & Omega Semiconductor (Hong Kong) Limited	Hong Kong	100% owned by AOS
Alpha & Omega Semiconductor (Macau), Ltd.	Macau	100% owned by AOS
Alpha & Omega Semiconductor (Taiwan) Limited	Taiwan	100% owned by AOS
Alpha & Omega Semiconductor (Germany) GmbH	Germany	100% owned by AOS
Agape Package Manufacturing Ltd.	Cayman	100% owned by AOS
Agape Package Manufacturing (Shanghai) Ltd.	China	100% owned by AOS
Agape Limited	Hong Kong	100% owned by AOS
Jireh Semiconductor Incorporated	Oregon, United States	100% owned by AOS
Chongqing Alpha and Omega Semiconductor Limited	Chongqing, China	42% owned by AOS
Alpha and Omega Semiconductor International LP	Canada	100% owned by AOS
Alpha and Omega Semiconductor (Delaware) LLC	Delaware, United States	100% owned by AOS

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Alpha and Omega Semiconductor Limited
Sunnyvale, California

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-261036, 333-166403, 333-172173, 333-180126, 333-186480, 333-190935, 333-207987, and 333-228297) of Alpha and Omega Semiconductor Limited of our reports dated September 19, 2022, relating to the consolidated financial statements and schedule and the effectiveness of Alpha and Omega Semiconductor Limited's internal control over financial reporting, which appear in this Form 10-K.

/s/ BDO USA, LLP
San Jose, California
September 19, 2022

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mike F. Chang, certify that:

1. I have reviewed this report on Form 10-K of Alpha and Omega Semiconductor Limited;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: September 19, 2022

/s/ MIKE F. CHANG

Mike F. Chang

Chief Executive Officer

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Yifan Liang, certify that:

1. I have reviewed this report on Form 10-K of Alpha and Omega Semiconductor Limited;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: September 19, 2022

/s/ YIFAN LIANG

Yifan Liang
Chief Financial Officer
and Corporate Secretary

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. § 1350, AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

I, Mike F. Chang, the chief executive officer of Alpha and Omega Semiconductor Limited (the “Company”), certify for the purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

a. the Annual Report of the Company on Form 10-K for the fiscal year ended June 30, 2022 (the “Report”), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
b. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: September 19, 2022

/s/ MIKE F. CHANG

Mike F. Chang
Chief Executive Officer

Exhibit 32.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. § 1350, AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

I, Yifan Liang, the chief financial officer of Alpha and Omega Semiconductor Limited (the "Company"), certify for the purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

a. the Annual Report of the Company on Form 10-K for the fiscal year ended June 30, 2022 (the "Report"), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
b. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: September 19, 2022

/s/ YIFAN LIANG

Yifan Liang
Chief Financial Officer
and Corporate Secretary

Exhibit 99.1

Chongqing Alpha and Omega Semiconductor Limited
Index to Financial Statements

REPORT OF INDEPENDENT AUDITOR

The Board of Directors of Chongqing Alpha and Omega Semiconductor Limited

Opinion on the Financial Statements

We have audited the accompanying financial statements of Chongqing Alpha and Omega Semiconductor Limited ("the Company") which comprise the balance sheet as of December 31, 2021, and the related statements of operations, equity and cash flows for the period from December 1, 2021 to December 31, 2021, and the related notes to the financial statements (collectively referred to as the "financial statements").

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021, and the results of its operations and its cash flows for the period from December 1, 2021 to December 31, 2021 in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Company and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

The accompanying financial statements of the Company have been prepared with the purpose of providing financial information to Alpha and Omega Semiconductor Limited ("AOS") to assist AOS in satisfying its reporting responsibilities under Regulation S-X, Rule 3-09.

Convenience Translation

Our audit also comprehended the translation of Renminbi amounts into United States dollar amounts and, in our opinion, such translation has been made in conformity with the basis stated in Note 1(d) to the financial statements. Such United States dollar amounts are presented solely for the convenience of readers outside the People's Republic of China.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for one year after the date that the financial statements are issued.

Auditors' Responsibility for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

/s/ Deloitte Touche Tohmatsu Certified Public Accountants LLP

Shanghai, the People's Republic of China

August 26, 2022

CHONGQING ALPHA AND OMEGA SEMICONDUCTOR LIMITED
BALANCE SHEET
(In thousands)

	Notes	December 31, 2021	
		RMB	US$ (Note 1(d))
ASSETS			
Current assets:			
Cash and cash equivalents	3	132,256	20,763
Accounts receivable, net		961	151
Amounts due from related parties, net		313,429	49,205
Inventories	4	326,795	51,304
Prepaid and other current assets	5	32,253	5,063
Total current assets		**805,694**	**126,486**
Property, plant and equipment, net	6	1,816,887	285,235
Land use right, net		54,332	8,530
Intangible assets, net	7	400,023	62,800
Operating lease right-of-use assets, net	10	74,314	11,667
Restricted cash - long-term		14,000	2,198
Other Long-term assets		5,847	917
Total non-current assets		**2,365,403**	**371,347**
Total assets		**3,171,097**	**497,833**
LIABILITIES AND EQUITY			
Current liabilities:			
Accounts payable		191,779	30,108
Amounts due to related parties		489,159	76,793
Accrued liabilities	8	142,444	22,363
Short-term debt	9	291,994	45,840
Finance lease liabilities		108,000	16,955
Operating lease liabilities	10	9,760	1,533
Total current liabilities		**1,233,136**	**193,592**
Long-term debt	9	329,363	51,707
Finance lease liabilities - long-term		28,000	4,396
Operating lease liabilities - long-term	10	65,380	10,263
Total non-current liabilities		**422,743**	**66,366**
Total liabilities		**1,655,879**	**259,958**
Commitments and contingencies (Note 13)			
Equity:			
Paid-in capital		2,525,474	396,476
Additional paid-in capital		12,466	1,957
Accumulated deficit		(1,022,722)	(160,558)
Total equity		**1,515,218**	**237,875**
Total liabilities and equity		**3,171,097**	**497,833**

The accompanying notes are an integral part of the financial statements.

CHONGQING ALPHA AND OMEGA SEMICONDUCTOR LIMITED
STATEMENT OF OPERATIONS
(In thousands)

	Notes	Period from December 1, 2021 to December 31,2021	
		RMB	US$ (Note 1(d))
Revenue	1(n)	123,137	19,331
Cost of goods sold		125,950	19,773
Gross profit (loss)		**(2,813)**	**(442)**
Operating expenses:			
Research and development		302	47
Selling, general and administrative		8,518	1,337
Total operating expenses		8,820	1,384
Operating loss		(11,633)	(1,826)
Interest expense and other loss, net		(3,194)	(501)
Net loss before income taxes		(14,827)	(2,327)
Income tax expense	11	-	-
Net loss		(14,827)	**(2,327)**

The accompanying notes are an integral part of the financial statements.

Statements of Equity

CHONGQING ALPHA AND OMEGA SEMICONDUCTOR LIMITED

(In thousands)

	Paid-in capital	Additional paid-in capital	Accumulated deficit	Total	
	RMB	RMB	RMB	RMB	US$ (Note 1(d))
Balance at December 1, 2021	2,525,474	12,466	(1,007,895)	1,530,045	240,202
Net loss	-	-	(14,827)	(14,827)	(2,327)
Balance at December 31, 2021	2,525,474	12,466	(1,022,722)	1,515,218	237,875

The accompanying notes are an integral part of the financial statements.

CHONGQING ALPHA AND OMEGA SEMICONDUCTOR LIMITED
STATEMENT OF CASH FLOWS
(In thousands)

	Period from December 1, 2021 to December 31, 2021	
	RMB	**US$ (Note 1(d))**
Cash flows from operating activities		
Net loss	(14,827)	(2,327)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Allowance for credit loss	308	48
Inventory write-down	422	66
Impairment of property, plant and equipment	4,814	756
Depreciation and amortization	18,761	2,947
Loss on disposal of property, plant and equipment	4,479	703
Changes in assets and liabilities:		
Accounts receivable	271	42
Amounts due from related parties	6,891	1,082
Inventories	10,005	1,571
Prepayments and other current assets	2,618	411
Accounts payable	(4,724)	(742)
Amounts due to related parties	16,860	2,647
Accrued liabilities	219	34
Operating lease liabilities	276	43
Net cash provided by operating activities	46,373	7,281
Cash flows from investing activities:		
Purchase of property, plant and equipment	(5,644)	(886)
Net cash used in investing activities	(5,644)	(886)
Cash flows from financing activities:		
Proceed from borrowings	96	15
Principal payments on capital leases	(27,000)	(4,239)
Net cash used in financing activities	(26,904)	(4,224)
Cash, cash equivalents and restricted cash as of December 1, 2021	132,431	20,790
Net increase in cash, cash equivalents and restricted cash	13,825	2,171
Cash, cash equivalents and restricted cash as of December 31, 2021	146,256	22,961
Supplemental disclosures of cash flow information:		
Cash and cash equivalents	132,256	20,763
Restricted cash, non-current	14,000	2,198
Total cash and cash equivalents and restricted cash	**146,256**	**22,961**
Cash paid for interest	8,515	1,337
Supplemental disclosures of non-cash investing and financing information:		
Property, plant and equipment purchased but not yet paid	2,206	346

The accompanying notes are an integral part of the financial statements.

1. The Company and Significant Accounting Policies

(a) History and Principal Activities

Chongqing Alpha and Omega Semiconductor Limited ("CQAOS", "the Company") was incorporated in Chongqing, China on April 22, 2016. It was invested by Alpha and Omega Semiconductor Limited ("AOS") with two investment funds owned by the Municipality of Chongqing (the "Chongqing Funds") by entering into a joint venture contract, for the purpose of constructing and operating a power semiconductor packaging, testing and wafer fabrication facility in the Liangjiang New Area of Chongqing, People of Republic China. Before December 2021, the AOS Group (collectively AOS and its subsidiaries) and the Chongqing Funds owned 50.9% and 49.1%, respectively, of the equity interest in the Company. On December 2, 2021, AOS Group disposed of partial equity interest in CQAOS to certain third-party investors. As a result, the Company was deconsolidated from the AOS Group.

(b) Basis of presentation

The financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP").

(c) Use of Estimates

The preparation of the financial statements in conformity with U.S. GAAP requires the Company to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses. To the extent there are material differences between these estimates and actual results, the Company's financial statements will be affected. On an ongoing basis, the Company evaluates the estimates, judgments and assumptions including principal-versus-agent determination for revenue recognition, allowance for credit loss, inventory reserves, warranty accrual, income taxes, leases, recoverability of and useful lives for property, plant and equipment and intangible assets.

(d) Foreign currency transaction and translation

Foreign currency transactions are translated into the functional currencies using the exchange rates prevailing at the beginning of the month. Foreign exchange gains and losses, resulting from the settlement of such transactions and from the re-measurement of monetary assets and liabilities denominated in foreign currencies using exchange rates at month end and non-monetary assets and liabilities using historical exchange rates, are recognized in the statements of operations.

The Company's reporting currency and functional currency is Renminbi ("RMB"). Translations of balances in the balance sheets, statements of operations and statements of cash flows from RMB into U.S. Dollars ("US$") as of and for one month ended December 31, 2021 are solely for the convenience of the reader and were calculated at the rate of US$1.00 = RMB6.3698 representing the average buying and selling spot rate set forth in the statistical release of the China Foreign Exchange Trade System on December 31, 2021.

(e) Cash, cash equivalents and restricted cash

Cash and cash equivalents primarily consist of cash on hand and short-term bank deposits with original maturities of three months or less. Cash equivalents are highly liquid investments with stated maturities of three months or less as of the dates of purchase. The carrying amounts reported for cash and cash equivalents are considered to approximate fair values based upon their short maturities.

Cash and cash equivalents are maintained with reputable major financial institutions. If, due to current economic conditions or other factors, one or more of the financial institutions with which the Company maintains deposits fails, the Company's cash and cash equivalents may be at risk. Deposits with these banks may exceed the amount of insurance provided on such deposits; however, these deposits typically may be redeemed upon demand and, therefore, bear minimal risk.

(e) Cash, cash equivalents and restricted cash - continued

As a condition of the loan arrangements, the Company is required to keep a compensating balance at the issuing bank. In addition, the Company maintains restricted cash in connection with cash balances temporarily restricted for regular business operations, including the possibility of a dispute with a vendor. These balances have been excluded from the Company's cash and cash equivalents balance and are classified as restricted cash in the Company's balance sheets.

(f) Accounts receivable, net

The allowance for credit loss is based on assessment of the collectability of accounts receivable from customers. The Company reviews the allowance by considering factors such as historical collection experience, credit quality, aging of the accounts receivable balances and current economic conditions that may affect a customer's ability to pay. The Company writes off a receivable and charges against its recorded allowance when it has exhausted its collection efforts without success.

(g) Fair Value Measurements

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The fair value hierarchy is based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value, which are the following:

•Level 1 - Quoted prices in active markets for identical assets or liabilities.

•Level 2 - Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

•Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

(h) Fair Value of Financial Instruments and others

The fair value of cash equivalents is based on observable market prices and have been categorized in Level 1 in the fair value hierarchy. Cash equivalents consist primarily of short-term bank deposits. The carrying values of financial instruments such as cash and cash equivalents, accounts receivable and accounts payable approximate their carrying values due to their short-term maturities. The carrying value of the company's debt is considered a reasonable estimate of fair value which is estimated by considering the current rates available to the Company for debt of the same remaining maturities, structure and terms of the debts.

The Company measures certain long-lived assets or long-term investments at fair value on a non-recurring basis in periods after initial measurement in circumstances when the fair value of such assets is below its recorded cost and impairment is required. Fair value of the property and equipment in impairment testing were determined by the Company based on the income approach using the discounted cash flows associated with the underlying assets, which incorporated certain assumptions including projected revenue, growth rates and projected operating costs, expectation of management and projected trends of current operating results.

The Company recorded impairment charges of RMB4,814(US$756) for certain property, plant and equipment during the month ended December 31, 2021. The impairment was recorded in cost of goods sold in its statements of operations.

(In Thousands of Renminbi, unless otherwise indicated)

(i) Inventories

The Company carries inventories at the lower of cost or net realizable value. Cost of inventory includes semiconductor wafer and raw materials, labor, depreciation expenses and other manufacturing expenses and overhead, and packaging and testing fees paid to third parties if subcontractors are used. Valuation of inventories are based on the Company's periodic review of inventory quantities on hand as compared with its sales forecasts, historical usage, aging of inventories, production yield levels and current product selling prices. If actual market conditions are less favorable than those forecasted by management, additional future inventory write-downs may be required. Adjustments to inventory once established are not reversed until the related inventory has been sold or scrapped.

(j) Property, plant and equipment, net

Property, plant and equipment are stated at historical cost less accumulated depreciation. Historical cost includes expenditures that are directly attributable to the acquisition of the items and the costs incurred to make the assets ready for their intended use.

Depreciation is provided for on a straight-line basis over the estimated useful lives of the related assets as follows:

	Useful life
Building	20 ~ 30 years
Manufacturing machinery and equipment	10 ~ 15 years
Equipment and tooling	10 ~ 15 years
Software	2 ~ 10 years
Office furniture and equipment	3 ~ 5 years
Vehicle and other fix asset	4 years

In March 2017, the CQAOS received the land use right certificate from the PRC government. The land use right will expire on November 30, 2066.

Construction in progress represent equipment received but the necessary installation has not been fully performed or building construction and leasehold improvements that have been started but not yet completed. Equipment and construction in progress are stated at cost and transferred to respective asset class when fully completed and ready for their intended use.

Software is externally purchased which is amortized over two to ten years on a straight-line basis. Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognized as selling, general and administrative expenses in the statements of operations. Costs of maintenance and repairs that do not improve or extend the lives of the respective assets are expensed as incurred.

(k) Land use right, net

The land use rights represent the operating lease prepayments for the rights to use the land in the PRC under ASC 842, which are amortized on a straight-line basis over the remaining term of the land certificates. In March 2017, the CQAOS received the land use right certificate from the PRC government with the consideration of RMB60,178 (US$9,447). The land use right will expire on November 30, 2066. Amortization expense of land use rights for the one month ended December 31, 2021 amounted to RMB101 (US$16).

(In Thousands of Renminbi, unless otherwise indicated)

(l) Impairment of Long-lived Assets

Long-lived assets are reviewed for impairment in accordance with authoritative guidance for impairment or disposal of long-lived assets. Long-lived assets are reviewed for events or changes in circumstances, which indicate that their carrying value may not be recoverable. Long-lived assets with definite lives are not impaired unless undiscounted cash flow is less than the carrying value, at which time impairment is recorded for the difference between carrying value and fair value. For the one month ended December 31, 2021, RMB4,814 was recognized as impairment loss and recoded in cost of goods sold.

(m) Government Grants

The Company occasionally receives government grants that provide financial assistance for certain eligible expenditures in China. The grant is reimbursement on interest expense on bank borrowings, payroll tax credits, credit for property, plant and equipment, employment credits, as well as business expansion credits. Grants received with no performance obligation or other restriction as to the use are recognized when cash is received. Grants received with government specified performance obligations are recognized when all the obligations have been fulfilled. If such obligations are not satisfied, the Company may be required to refund the subsidy. The Company records such grants either as a reduction of the related expense, a reduction of the cost of the related asset, or as other income depending upon the nature of the grant.

(n) Revenue Recognition

The Company’s revenue is derived from the sales of silicon chips and wafer, providing assembly and testing ("A&T") service, and other revenue.

The Company determines revenue recognition through the following steps: (1) identification of the contract with a customer; (2) identification of the performance obligations in the contract; (3) determination of the transaction price; (4) allocation of the transaction price to the performance obligations in the contract; and (5) recognition of revenue when, or as, a performance obligation is satisfied. The Company recognizes product revenue at a point in time when product is shipped to customer, and service revenue once rendered. The Company presents revenue net of sales taxes. The standard payment terms range from 30 to 90 days.

The Company's performance obligations relate to contracts with a duration of less than one year. The Company elected to apply the practical expedient provided in ASC 606, “Revenue from Contracts with Customers”. Therefore, the Company is not required to disclose the aggregate amount of transaction price allocated to performance obligations that are unsatisfied or partially unsatisfied at the end of the reporting period.

The following is a summary of revenue by type:

	Period from December 1, 2021 to December 31,2021	
	RMB	**US$**
Product	116,982	18,365
Service	6,155	966
Total	**123,137**	**19,331**

(o) Cost of goods sold

Cost of goods sold primarily consists of costs associated with semiconductor wafers, packaging and testing, shipping and handling, personnel, overhead attributable to manufacturing, impairment loss on manufacturing equipment, operations and procurement, and costs associated with yield improvements, capacity utilization, warranty and valuation of inventories.

(p) Leases

The Company determines if an arrangement is a lease at inception. Right-of-use ("ROU") assets and lease liabilities are recognized for all leases based on the present value of the future minimum lease payments over the lease term at commencement date. The Company uses an estimate of its incremental borrowing rate based on the information available at the lease commencement date. ROU assets also include any lease payments made and exclude lease incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise such options.

The Company classifies its leases in to operating lease and finance lease. Operating leases are included in operating lease ROU assets and operating lease liabilities on the Company's balance sheets. Finance lease are included in property, plant and equipment and finance lease liabilities on the balance sheets. Operating lease expense is recognized on a straight-line basis over the lease term, lease liability is amortized using the effective interest method over the lease period. The Company does not record leases on the balance sheet with a term of one year or less.

(q) Product Warranty

The Company provides a standard two-year warranty for the products from the date of purchase by the customers. The Company accrues for estimated warranty costs at the time revenue is recognized. The Company's warranty obligation is affected by product failure rates, labor and material costs for replacing defective products, related freight costs for failed parts and other quality assurance costs. The Company monitors its product returns for warranty claims and maintains warranty reserves based on historical experiences and anticipated warranty claims known at the time of estimation.

(r) Provision for Income Taxes

Income tax expense or benefit is based on income or loss before taxes. Deferred tax assets and liabilities are recognized principally for the expected tax consequences of temporary differences between the tax basis of assets and liabilities and their reported amounts.

Significant management judgment is required in determining whether deferred tax assets will be realized in full or in part. When it is more likely than not that all or some portion of specific deferred tax assets such as net operating losses or research and experimentation tax credit carry-forwards will not be realized, a valuation allowance must be established for the amount of the deferred tax assets that cannot be realized. The Company considers all available positive and negative evidence when assessing whether it is more likely than not that deferred tax assets are recoverable. The Company considers evidence such as our past operating results, the existence of cumulative losses in recent years and our forecast of future taxable income.

The Financial Accounting Standards Board, or FASB, issued guidance which clarifies the accounting for income taxes by prescribing a minimum probability threshold that a tax position must meet before a financial statement benefit is recognized. The minimum threshold is defined as a tax position that is more likely than not to be sustained upon examination by the applicable taxing authority, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The tax benefit to be recognized is measured as the largest amount of benefit that is greater than fifty percent likely to be realized upon ultimate settlement. Although the guidance on the accounting for uncertainty in income taxes prescribes the use of a recognition and measurement model, the determination of whether an uncertain tax position has met those thresholds will continue to require significant judgment by management.

The Company's provision for income taxes is subject to volatility and could be adversely impacted by changes in earnings or tax laws and regulations in various jurisdictions. The Company is subject to the continuous examination of its income tax returns by the tax authorities. The Company regularly assesses the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the impact of changes to reserves, as well as the related net interest and penalties.

(In Thousands of Renminbi, unless otherwise indicated)

(s) Recent Accounting Pronouncements not yet adopted

In November 2021, the FASB issued ASU 2021-10, Government Assistance (Topic 832) — Disclosures by Business Entities about Government Assistance. The amendments in this ASU require disclosures about transactions with a government that have been accounted for by analogizing to a grant or contribution accounting model to increase transparency about (1) the types of transactions, (2) the accounting for the transactions, and (3) the effect of the transactions on an entity's financial statements. The amendments in this ASU are effective for all entities within their scope for financial statements issued for annual period beginning after December 15, 2021. Early application of the amendments is permitted. The Company does not expect this ASU to have a material impact on the financial statements.

2. Concentration of Credit Risk and Significant Customers

The Company manages its credit risk associated with exposure to customers on outstanding accounts receivable through the application of credit approvals, credit ratings and other monitoring procedures.

Credit sales, which are mainly on credit terms of 30 to 90 days, are only made to customers who meet the Company's credit standards, while sales to new customers or customers with low credit ratings are usually made on an advance payment basis. The Company considers its financial assets to be of good credit quality because its customers have long-standing business relationships with the Company and the Company has not experienced any significant bad debt write-offs of accounts receivable in the past. The Company closely monitors the aging of accounts receivable from customers, and regularly reviews their financial positions, where available.

The only customer whose revenue or accounts receivable balances were 10% or higher than the respective total amounts is the Company's related party, AOS Group. See note 12 for details of balance and transaction with AOS Group.

3. Cash and cash equivalents

	December 31, 2021	
	RMB	**US$**
Cash at bank	132,256	20,763
Denominated in:		
US$	66,687	10,469
RMB	65,569	10,294

Certain cash and bank balances denominated in US$ were deposited with banks in the PRC. The conversion of these US$ denominated balances into foreign currencies is subject to the rules and regulations of foreign exchange control promulgated by the PRC government.

4. Inventories

	December 31, 2021	
	RMB	**US$**
Raw materials	159,915	25,105
Work in progress	117,479	18,443
Finished goods	49,401	7,756
Inventories	**326,795**	**51,304**

The Company write-down inventory for any excess or obsolete inventories or when the Company believe that the net realizable value of inventories is less than the carrying value. For the one month ended December 31, 2021, the Company wrote-down inventory of RMB422 (US$66).

(In Thousands of Renminbi, unless otherwise indicated)

5. Prepaid and other current assets

	December 31, 2021	
	RMB	US$
Prepaid maintenance	7,005	1,100
Prepayment to supplier	5,567	874
VAT receivable	13,077	2,053
Others	6,604	1,036
Prepaid and other current assets	**32,253**	**5,063**

6. Property, plant and equipment, net

Property and equipment, net consist of the following:

	December 31, 2021	
	RMB	US$
Building	368,556	57,860
Manufacturing machinery and equipment	1,680,985	263,899
Equipment and tooling	256,330	40,242
Software	37,970	5,961
Office furniture and equipment	22,178	3,482
Vehicle and other fix asset	7,481	1,174
less: accumulated depreciation	(694,444)	(109,021)
Equipment and construction in progress	137,831	21,638
Property and equipment, net	1,816,887	285,235

Depreciation expenses from December 1, 2021 to December 31, 2021 was RMB13,170 (US$2,068). For the month ended December 31, 2021, RMB4,814 (US$756) was recognized as impairment loss on manufacturing equipment.

7. Intangible assets, net

Intangible assets, net consist of the following:

	December 31, 2021	
	RMB	US$
Patents and technology rights	571,242	89,680
Less: accumulated amortization	(171,219)	(26,880)
Intangible assets, net	400,023	62,800

The Company amortizes its intangible assets of patents and technology rights relating to power device semiconductors and wafer production over their estimated useful lives of 7 to 15 years. Amortization expense from December 1, 2021 to December 31, 2021 was RMB4,955.

Amortization expenses of the above intangible assets are expected to be approximately RMB59,458, RMB59,458, RMB59,458, RMB59,458 and RMB162,190 for the years ending December 31, 2022, 2023, 2024, 2025, 2026 and thereafter, respectively.

(In Thousands of Renminbi, unless otherwise indicated)

8. Accrued Liabilities

	December 31, 2021	
	RMB	US$
Accrued compensation and benefits	57,507	9,028
Accrued property, plant and equipment	34,853	5,472
Warranty accruals	11,840	1,859
Accrued interest	1,918	301
Advance from customer	5,338	838
Others	30,988	4,865
Accrued Liabilities	**142,444**	**22,363**

9. Bank borrowings

Short-term debt

On June 29, 2021, the Company entered into a one-year loan agreement with China Citic Bank to borrow a maximum of US$7.7 million. Interest payments are due on the 20th of the last month in each quarter starting September 20, 2021, and the entire principal is due on June 29, 2022. As of December 31, 2021, the outstanding balance of this loan was US$7.7 million at an interest rate of 3.4926% per annum.

On April 14, 2021, the Company entered into a loan agreement with China Everbright Bank in China to borrow a maximum of RMB100 million. The borrowing can be in either RMB or US$ and be repaid in the same currency. The loan consists of RMB50 million for working capital borrowings in RMB and RMB50 million for trade financing in US$. The loan is collateralized by eligible accounts receivable of RMB50million. On April 19, 2021, the Company borrowed RMB50 million for working capital borrowing, at an interest rate of 5.1% annum. The interest payments are due quarterly with the entire principal due no later than May 19, 2022. On November 23, 2021 and December 23, 2021, the Company also borrowed US$4.2 million and US$3.4 million for trade financing at interest rate of 2.7% per annum, with principal due on February 15, 2022 and March 2, 2022, respectively. As of December 31, 2021, the total outstanding balance of these loans were RMB50 million and US$7.6 million.

Long-term debt

On April 26, 2020, the Company entered into a loan agreement with China Development Bank, Agricultural Bank of China, China Merchants Bank and Chongqing Rural Commercial Bank (collectively, "the Banks") in the aggregate principal amount of RMB250 million. The obligation under the loan agreement is secured by certain assets of the Company with a net carrying value of RMB1,129 million as of December 31, 2021. In addition, this loan shares collateral rights with the US$24 million loan signed on November 28, 2019. Beginning December 18, 2020, the Company is required to make consecutive semi-annual payments of principal until December 8, 2024. Interest payment is due on March 20, June 20, September 20 and December 20 of each year based on China one-year loan prime rate ("LPR") plus 1.3%. During the period from April 26, 2020 to December 31, 2021, the Company drew down RMB250 million and repaid RMB50 million. As of December 31, 2021, the outstanding balance of the loan was RMB200 million.

On December 18, 2019, the Company entered into a loan agreement with China Development Bank in the amount of US$24 million. The obligation under the loan agreement is secured by certain assets of the Company with a net carrying value of RMB1,129 million as of December 31, 2021. In addition, this loan shares collateral rights with the RMB 250 million loan signed on April 26, 2020. Beginning December 18, 2020, the Company will make consecutive semi-annual payments of principal until December 8, 2024. The interest is accrued based on the LIBOR of 6 months rate plus 2.8%. The interest is required to be paid on March 21 and September 21 each year. As of December 31, 2021, the outstanding balance of the loan was US$16.8 million.

(In Thousands of Renminbi, unless otherwise indicated)

On March 12, 2019, the Company entered into a loan agreement with The Export-Import Bank of China in the aggregate principal amount of RMB200 million. The loan will expire on February 20, 2025. The Company drew down RMB190 million and RMB10 million in March 2019 and December 2019, respectively. The loan withdraw window expired on February 28, 2020. The interest is accrued based on the China Base Rate (base interest rate published by the People's Bank of China) multiplied by 1.1 (5.39% for 2021). The loan requires quarterly interest payments. The principal payments are required to be paid every 6 months over the term of loan commencing in October 2019. This loan is secured by the land, buildings and certain equipment owned by the Company with a net carrying value of RMB592 million as of December 31, 2021. In addition, this loan shares the collateral rights with the rent factoring of RMB 379 million signed on March 22, 2019 which under YinHai financing lease. As a condition of the loan arrangements, RMB14 million of cash is held as restricted cash by the Company as a cash deposit at the bank until the principal is paid. On June 24, 2020, a modification of this loan was signed as a result of a change in the bank reference rate, pursuant to which the interest rate was changed to be based on the five-year loan prime rate in China plus 0.74% (5.39% for the fiscal year 2021). Other terms of this loan remain the same. As of December 31, 2021, the outstanding balance of the loan was RMB171 million.

Financing lease

On May 9, 2018 (the "Effective Date"), the Company entered into a lease finance agreement and a security agreement (the "Agreements") with YinHai Leasing Company and China Import/Export Bank (the "Lenders"). Pursuant to the Agreements, the Lenders agree to provide an aggregate of RMB400 million of financing to the Company (the "Lease Financing"). In exchange for the Lease Financing, the Company agrees to transfer title of its assembly and testing equipment to the Lenders, and the Lenders lease such equipment to the Company under a five-year lease arrangement, pursuant to which the Company makes quarterly lease payments to the Lenders consisting of principal and interest based on a repayment schedule mutually agreed by the parties. The interest under the Lease Financing is accrued based on the China Base Rate multiplied by 1.15 (5.4625% for 2021). Under the Agreements, at the end of the five-year lease term, the Lenders agree to sell such equipment back to the Company for a nominal amount RMB1. The Company's obligations under the Lease Financing that rent factoring of RMB379 million are secured by the land and building owned by the Company (the "Collateral"). In addition, this rent factoring shares the collateral rights with the loan of RMB 200 million signed on March 12, 2019. The proceeds from the Lease Financing will be used primarily for the acquisition and installation of the 12-inch fabrication equipment and other expenses of the Company relating to the completion of the fabrication facility located in Chongqing. The Agreements contain customary representation, warranties and covenants, including restrictions on the transfer of the Collateral. The Agreements also contain customary events of default, including but are not limited to, failure to make payments and breach of material terms under the Agreements. On June 28, 2020, the parties entered into a modification to this agreement as a result of a change in the bank reference rate, pursuant to which the interest rate was changed to be the five-year loan prime rate in China plus 0.8125% (5.4625% for 2021). Other terms of this agreement remain the same. As of December 31, 2021, the outstanding balance of the Lease Financing of RMB136 million was recorded under short-term and long-term finance lease liabilities.

As of December 31, 2021, maturities of short-term debt and long-term debt were as follows:

December 31,	**RMB**	**US$**
2022	294,252	46,195
2023	149,254	23,432
2024	159,154	24,986
2025	23,000	3,610
2016 and thereafter	-	-
Total principal of debt	625,660	98,223
Less: debt issuance costs	(4,303)	(676)
Total principal of debt, less debt issuance costs	**621,357**	**97,547**

(In Thousands of Renminbi, unless otherwise indicated)

	Short-Term Debt		Long-Term Debt		Total	
	RMB	US$	RMB	US$	RMB	US$
Principal amount	294,252	46,195	331,408	52,028	625,660	98,223
Less: debt issuance costs	(2,258)	(355)	(2,045)	(321)	(4,303)	(676)
Total	**291,994**	**45,840**	**329,363**	**51,707**	**621,357**	**97,547**

10. Lease

The Company evaluates contracts for lease accounting at contract inception and assesses lease classification at the lease commencement date. Operating leases are included in operating lease right-of-use ("ROU") assets, operating lease liabilities and operating lease liabilities - long-term on the Company's balance sheets. Finance leases are included in property, plant and equipment, finance lease liabilities and finance lease liabilities-long-term on the balance sheets. The Company recognizes a ROU asset and corresponding lease obligation liability at the lease commencement date where the lease obligation liability is measured at the present value of the minimum lease payments. As most of the leases do not provide an implicit rate, the Company uses its incremental borrowing rate at lease commencement. The Company uses an interest rate commensurate with the interest rate to borrow on a collateralized basis over a similar term with an amount equal to the lease payments. Operating leases are primarily related to offices facilities, employee apartments, and gas tank equipment. Lease agreements frequently include renewal provisions and require the Company to pay real estate taxes, insurance and maintenance costs. For operating leases, the amortization of the ROU asset and the accretion of its lease obligation liability result in a single straight-line expense recognized over the lease term. The finance lease is related to YinHai Leasing Company. The Company does not record leases on the balance sheet with a term of one year or less.

The components of the Company's operating and finance lease expenses are as follows for the period presented:

	Period from December 1, 2021 to December 31, 2021	
	RMB	US$
Operating leases:		
Fixed rent expense	536	84
Finance lease:		
Amortization of equipment	3,484	547
Interest	726	114
Total lease expenses	4,746	745

Supplemental balance sheet information related to the Company's operating and finance leases is as follows (in thousands, except lease term and discount rate):

	As of December 31, 2021	
	RMB	US$
Operating leases:		
ROU assets associated with operating leases	74,314	11,667
Finance Lease:		
Property, plant and equipment, gross	552,078	86,671
Accumulated depreciation	373,169	58,584
Property and equipment, net	178,909	28,087
Weighted average remaining lease term (in years)		
Operating leases	10.82	10.82
Finance leases	1.25	1.25
Weighted average discount rate		
Operating leases	5.39%	5.39%
Finance leases	5.46%	5.46%

Supplemental cash flow information related to the Company's operating and finance lease is as follows:

	Period from December 1, 2021 to December 31, 2021	
	RMB	US$
Cash paid from amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	165	26
Operating cash flows from finance lease	2,251	353
Financing cash flows from finance lease	27,000	4,239

Future minimum lease payments are as follows as of December 31, 2021:

Years ending December 31,	Operating Lease Payment RMB	Operating Lease Payment US$	Finance Lease Payment RMB	Finance Lease Payment US$	Total Lease Payment RMB	Total Lease Payment US$
2022	11,190	1,757	113,283	17,784	124,473	19,541
2023	9,923	1,558	28,382	4,456	38,305	6,014
2024	8,582	1,347	-	-	8,582	1,347
2025	8,417	1,321	-	-	8,417	1,321
2026	8,417	1,321	-	-	8,417	1,321
Thereafter	52,604	8,259	-	-	52,604	8,259
Total lease payments	99,133	15,563	141,665	22,240	240,798	37,803
Less: imputed interest	(23,993)	(3,767)	(5,665)	(889)	(29,658)	(4,656)
Total lease liabilities	75,140	11,796	136,000	21,351	211,140	33,147

(In Thousands of Renminbi, unless otherwise indicated)

11. Income Tax

Under PRC's Enterprise Income Tax Law ("EIT Law"), the statutory income tax rate is 25%, and the EIT rate will be reduced to 15% for the encouraged enterprises located in the western region which CQAOS met the requirement, according to the taxation No.23 in 2020 announced by China development and Reform Commission of the Ministry of Finance and the State Administration, from January 1, 2021 to December 31, 2030. No provision for income taxes has been required to be accrued because CQAOS is in cumulative loss positions for the period presented.

The Company recorded a full valuation allowance against deferred tax assets because it was in a cumulative loss position as of December 31, 2021. No unrecognized tax benefits and related interest and penalties were recorded in the period presented.

12. Related party transactions

The table below sets forth the major related parties and the relationship with the Company as of December 31, 2021:

Company Name	Relationship with the Company
Chongqing Yujiangxin Enterprise Management Co., LTD. ("Yujiangxin")	Shareholder
Alpha and Omega Semiconductor Limited and its subsidiaries ("AOS Group")	Shareholder

(a) Amounts due from related parties

Accounts	Name of related parties	December 31, 2021	December 31, 2021
		RMB	US$
Amounts due from related parties, net	AOS Group	313,429	49,205

The balance of amounts due from related parties as of December 31, 2021 is related to sale of finished goods to AOS Group.

(b) Amounts due to related parties

Accounts	Name of related parties	December 31, 2021	December 31, 2021
		RMB	US$
Amounts due to related parties	AOS Group	489,159	76,793

The balance of amounts due to related parties as of December 31, 2021 is related to purchase of raw materials from AOS Group.

(c) Sales and purchase with related parties

Accounts	Name of related parties	December 31, 2021	December 31, 2021
		RMB	US$
Revenue from related party	AOS Group	117,272	18,411
Purchase from related party	AOS Group	31,739	4,983

For the one month ended December 31 2021, all of the related party balance and transaction are as above.

13. Commitments and Contingencies

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, and penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. If a potential material loss contingency is not probable but is reasonably possible, or is probable but cannot be estimated, then the nature of the contingent liability, together with an estimate of the range of possible loss if determinable and material, is disclosed. Legal costs incurred in connection with loss contingencies are expensed as incurred.

14. Subsequent events

The subsequent events were evaluated through August 26, 2022, which is the issuance date of the audited financial statements.

On January 26, 2022, the Company entered into an investment agreement with certain third-party investors and received a total consideration of RMB509 million (US$80 million).

On December 30, 2021, the Company approved a Share Incentive Plan. Pursuant to the Share Incentive Plan, restricted shares ("RS") were granted to certain employees of the Company as approved by the board of directors through the employee stock holding platforms (the “Platform”) which are several limited partnerships. Registration of shares granted to employees through the Platform were completed on January 8, 2022. Vesting of the RS granted are subject to service condition and certain performance conditions.