

ALPHA & OMEGA SEMICONDUCTOR Ltd
Form 10-Q
May 03, 2019
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(MARK ONE)

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

For the quarterly period ended March 31, 2019

OR

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

FOR THE TRANSITION PERIOD FROM TO
Commission file number 001-34717

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)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past

90 days. Yes ☒ No ☐

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See 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. ☐

Title of each class Trading Symbol(s) Name of each exchange on which registered

Common Shares AOSL The NASDAQ Global Select Market

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

Number of common shares outstanding as of April 30, 2019: 24,291,812

Alpha and Omega Semiconductor Limited
Form 10-Q
Fiscal Second Quarter Ended March 31, 2019
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PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONDENSED CONSOLIDATED BALANCE SHEETS

(Unaudited, in thousands except par value per share)

	March 31, 2019	June 30, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 139,144	\$ 131,535
Restricted cash	261	189
Accounts receivable, net	28,410	33,755
Inventories	107,930	90,182
Other current assets	37,104	29,551
Total current assets	312,849	285,212
Property, plant and equipment, net	391,638	331,656
Intangible assets, net	16,911	16,591
Deferred income tax assets	4,977	4,892
Restricted cash - long-term	2,084	—
Other long-term assets	12,259	28,698
Total assets	\$ 740,718	\$ 667,049
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 92,246	\$ 92,661
Accrued liabilities	40,736	49,841
Income taxes payable	2,100	2,211
Short-term debt	26,571	3,811
Deferred margin	—	1,665
Capital leases	9,593	4,491
Total current liabilities	171,246	154,680
Long-term debt	62,499	26,786
Income taxes payable - long-term	790	924
Deferred income tax liabilities	1,325	713
Capital leases - long-term	48,380	56,791
Other long-term liabilities	10,993	993
Total liabilities	295,233	240,887
Commitments and contingencies (Note 11)		
Equity:		
Preferred shares, par value \$0.002 per share:		
Authorized: 10,000 shares, issued and outstanding: none at March 31, 2019 and June 30, 2018	—	—
Common shares, par value \$0.002 per share:		
Authorized: 100,000 shares, issued and outstanding: 30,935 shares and 24,289 shares, respectively at March 31, 2019 and 30,400 shares and 23,860 shares, respectively at June 30, 2018	62	61
Treasury shares at cost, 6,646 shares at March 31, 2019 and 6,540 shares at June 30, 2018	(66,240)	(64,790)
Additional paid-in capital	230,234	220,244

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Accumulated other comprehensive income (loss)	(563	) 440
Retained earnings	122,940	122,639
Total Alpha and Omega Semiconductor Limited shareholder's equity	286,433	278,594
Noncontrolling interest	159,052	147,568
Total equity	445,485	426,162
Total liabilities and equity	\$740,718	\$667,049

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

See accompanying notes to these condensed consolidated financial statements.

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

	Three Months Ended March 31,		Nine Months Ended March 31,	
	2019	2018	2019	2018
Revenue	\$109,067	\$102,902	\$339,064	\$311,656
Cost of goods sold	83,438	75,769	251,322	228,911
Gross profit	25,629	27,133	87,742	82,745
Operating expenses				
Research and development	11,417	9,966	35,401	27,393
Selling, general and administrative	17,947	16,486	58,403	46,857
Total operating expenses	29,364	26,452	93,804	74,250
Operating income (loss)	(3,735)	) 681	(6,062)	) 8,495
Interest income and other income (loss), net	124	(234)	) 460	(354)
Interest expense	(1,719)	) (105)	) (4,915)	) (136)
Net income (loss) before income taxes	(5,330)	) 342	(10,517)	) 8,005
Income tax expense	625	830	1,886	32
Net income (loss) including noncontrolling interest	(5,955)	) (488)	) (12,403)	) 7,973
Net loss attributable to noncontrolling interest	(4,400)	) (2,139)	) (11,719)	) (5,269)
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	\$(1,555)	) \$1,651	\$(684)	) \$13,242
Net income (loss) per common share attributable to Alpha and Omega Semiconductor Limited				
Basic	\$(0.06)	) \$0.07	\$(0.03)	) \$0.55
Diluted	\$(0.06)	) \$0.07	\$(0.03)	) \$0.53
Weighted average number of common shares attributable to Alpha and Omega Semiconductor Limited used to compute net income (loss) per share				
Basic	24,084	23,795	23,938	23,914
Diluted	24,084	24,755	23,938	24,916

See accompanying notes to these condensed consolidated financial statements.

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ALPHA AND OMEGA SEMICONDUCTOR LIMITED

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(Unaudited, in thousands)

ALPHA AND OMEGA SEMICONDUCTOR LIMITED

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(Unaudited, in thousands)

	Three Months Ended March 31,		Nine Months Ended March 31,	
	2019	2018	2019	2018
Net income (loss) including noncontrolling interest	\$(5,955)	\$(488)	\$(12,403)	\$7,973
Other comprehensive income, net of tax				
Foreign currency translation adjustment	4,495	5,198	(1,800)	9,246
Comprehensive income (loss)	(1,460)	4,710	(14,203)	17,219
Noncontrolling interest	(2,184)	360	(12,516)	(871)
Comprehensive income (loss) attributable to Alpha and Omega Semiconductor Limited	\$724	\$4,350	\$(1,687)	\$18,090

See accompanying notes to these condensed consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(Unaudited, in thousands)

	Common Shares	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
Balance, December 31, 2018	\$ 61	\$(66,283)	\$227,818	\$ (2,842)	\$124,538	\$283,292	\$161,236	\$444,528
Exercise of common stock options and release of RSUs	1	—	(1)	—	—	—	—	—
Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	43	—	—	(43)	—	—	—
Withholding tax on restricted stock units	—	—	(1,743)	—	—	(1,743)	—	(1,743)
Issuance of shares under ESPP	—	—	—	—	—	—	—	—
Repurchase of common shares under shares repurchase program	—	—	—	—	—	—	—	—
Share-based compensation	—	—	4,160	—	—	4,160	—	4,160
Net loss	—	—	—	—	(1,555)	(1,555)	(4,400)	(5,955)
Impact on retained earnings related to ASC 606 adoption	—	—	—	—	—	—	—	—
Cumulative translation adjustment	—	—	—	2,279	—	2,279	2,216	4,495
Contributions from noncontrolling interest	—	—	—	—	—	—	—	—
Balance, March 31, 2019	\$ 62	\$(66,240)	\$230,234	\$ (563)	\$122,940	\$286,433	\$159,052	\$445,485
	Common Shares	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
Balance, June 30, 2018	\$ 61	\$(64,790)	\$220,244	\$ 440	\$122,639	\$278,594	\$147,568	\$426,162
Exercise of common stock options and	1	—	109	—	—	110	—	110

release of RSUs									
Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	51	—	—	(51	) —	—	—	—
Withholding tax on restricted stock units	—	—	(1,946	) —	—	(1,946	) —	(1,946	)
Issuance of shares under ESPP	—	—	1,168	—	—	1,168	—	1,168	
Repurchase of common shares under shares repurchase program	—	(1,501	) —	—	—	(1,501	) —	(1,501	)
Share-based compensation	—	—	10,659	—	—	10,659	—	10,659	
Net loss	—	—	—	—	(684	) (684	) (11,719	) (12,403	)
Impact on retained earnings related to ASC 606 adoption	—	—	—	—	1,036	1,036	—	1,036	
Cumulative translation adjustment	—	—	—	(1,003	) —	(1,003	) (797	) (1,800	)
Contributions from noncontrolling interest	—	—	—	—	—	—	24,000	24,000	
Balance, March 31, 2019	\$ 62	\$(66,240)	\$230,234	\$ (563	) \$122,940	\$286,433	\$159,052	\$445,485	

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(Unaudited, in thousands)

	Common Shares	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
Balance, December 31, 2017	\$ 60	\$(55,799)	\$212,771	\$ 2,455	\$120,023	\$ 279,510	\$ 113,542	\$393,052
Exercise of common stock options and release of RSUs	—	—	465	—	—	465	—	465
Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	83	—	—	(53)	30	—	30
Withholding tax on restricted stock units	—	—	(1,999)	—	—	(1,999)	—	(1,999)
Issuance of shares under ESPP	—	—	—	—	—	—	—	—
Repurchase of common shares under shares repurchase program	—	(5,994)	—	—	—	(5,994)	—	(5,994)
Share-based compensation	—	—	3,931	—	—	3,931	—	3,931
Net income (loss)	—	—	—	—	1,651	1,651	(2,139)	(488)
Impact on retained earnings related to ASC 606 adoption	—	—	—	—	—	—	—	—
Cumulative translation adjustment	—	—	—	2,699	—	2,699	2,499	5,198
Contributions from noncontrolling interest	—	—	—	—	—	—	42,000	42,000
Balance, March 31, 2018	\$ 60	\$(61,710)	\$215,168	\$ 5,154	\$121,621	\$ 280,293	\$ 155,902	\$436,195
	Common Shares	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
Balance, June 30, 2017	\$ 59	\$(49,836)	\$206,332	\$ 306	\$113,909	\$ 270,770	\$ 27,779	\$298,549
Exercise of common stock options and release of RSUs	1	—	1,168	—	—	1,169	—	1,169

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Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	142	—	—	(50	) 92	—	92
Withholding tax on restricted stock units	—	—	(2,248	) —	—	(2,248	) —	(2,248)
Issuance of shares under ESPP	—	—	1,439	—	—	1,439	—	1,439
Repurchase of common shares under shares repurchase program	—	(12,016	) —	—	—	(12,016	) —	(12,016)
Share-based compensation	—	—	8,477	—	—	8,477	—	8,477
Net income (loss)	—	—	—	—	13,242	13,242	(5,269	) 7,973
Impact on retained earnings related to ASC 606 adoption	—	—	—	—	(5,480	) (5,480	) —	(5,480)
Cumulative translation adjustment	—	—	—	4,848	—	4,848	4,398	9,246
Contributions from noncontrolling interest	—	—	—	—	—	—	128,994	128,994
Balance, March 31, 2018	\$ 60	\$(61,710)	\$215,168	\$ 5,154	\$121,621	\$ 280,293	\$ 155,902	\$436,195

See accompanying notes to these condensed consolidated financial statements.

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ALPHA AND OMEGA SEMICONDUCTOR LIMITED

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

(Unaudited, in thousands)

	Nine Months Ended March 31,	
	2019	2018
Cash flows from operating activities		
Net income (loss) including noncontrolling interest	\$(12,403)	\$7,973
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation and amortization	24,159	21,818
Share-based compensation expense	10,659	8,477
Deferred income taxes, net	252	(638)
Loss (gain) on disposal of property and equipment	(8)	26
Changes in assets and liabilities:		
Accounts receivable, net	5,122	(517)
Inventories	(17,748)	(14,218)
Other current and long-term assets	(2,399)	(16,255)
Accounts payable	6,039	6,492
Income taxes payable	(245)	(1,731)
Accrued and other liabilities	9,728	2,830
Net cash provided by operating activities	23,156	14,257
Cash flows from investing activities		
Purchases of property and equipment excluding JV Company	(31,402)	(35,585)
Purchases of property and equipment in JV Company	(58,509)	(87,088)
Purchase of intangible assets	(405)	(14,034)
Proceeds from sale of property and equipment	21	6
Net cash used in investing activities	(90,295)	(136,701)
Cash flows from financing activities		
Proceeds from investment by noncontrolling interest	24,000	128,994
Withholding tax on restricted stock units	(1,946)	(2,248)
Proceeds from exercise of stock options and ESPP	1,278	2,700
Payment for repurchases of common shares	(1,501)	(12,016)
Proceeds from borrowings	67,479	13,150
Repayments of borrowings	(9,393)	—
Principal payments on capital leases	(2,440)	(623)
Net cash provided by financing activities	77,477	129,957
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(573)	2,004
Net increase in cash, cash equivalents and restricted cash	9,765	9,517
Cash, cash equivalents and restricted cash at beginning of period	131,724	115,929
Cash, cash equivalents and restricted cash at end of period	\$141,489	\$125,446
Supplemental disclosures of non-cash investing and financing information:		
Property and equipment purchased but not yet paid	\$50,767	\$66,563
Re-issuance of treasury stock	\$51	\$50

See accompanying notes to these condensed consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

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, flat panel TVs, LED lighting, 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 accompanying unaudited condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP") for interim financial information and with the instructions to Article 10 of Securities and Exchange Commission Regulation S-X, as amended. They do not include all information and footnotes necessary for a fair presentation of financial position, results of operations and cash flows in conformity with U.S. GAAP for complete financial statements. These condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and related notes contained in the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2018. All significant intercompany balances and transactions have been eliminated in consolidation. In the opinion of management, all adjustments (consisting of normal recurring adjustments and accruals) considered necessary for a fair presentation of the results of operations for the periods presented have been included in the interim periods. Operating results for the nine months ended March 31, 2019 are not necessarily indicative of the results that may be expected for the fiscal year ending June 30, 2019. The condensed consolidated balance sheet at June 30, 2018 is derived from the audited financial statements included in the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2018.

Joint Venture

In March 2016, the Company executed an agreement with two strategic investment funds owned by the Municipality of Chongqing, China (the "Chongqing Funds") to form a joint venture, (the "JV Company"), for a new state-of-the-art power semiconductor packaging, testing and wafer fabrication facility in Liangjiang New Area of Chongqing (the "Joint Venture"). The initial capitalization of the Joint Venture under the agreement was \$330.0 million, which includes cash contributions from the Chongqing Funds and contributions of cash, equipment and intangible assets from the Company. In August 2018, the Company invested an additional \$25.0 million in cash contribution to the JV Company, after which resulted the Company owned 54.4%, and the Chongqing Funds owned 45.6%, of the equity interest in the JV Company. At the end of December 2018, the Chongqing Funds invested an additional \$24.0 million in cash contribution to the JV Company, after which the Company owned 50.9%, and the Chongqing Funds owned 49.1%, of the equity interest in the JV Company. The Joint Venture is accounted for under the provisions of the consolidation guidance since the Company has a controlling financial interest.

Use of Estimates

The preparation of the condensed 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, share-based compensation, and useful lives for property, plant and equipment and intangible assets.

Share-based Compensation Expense

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 market 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

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

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, net of estimated forfeitures, over the requisite service period of the award, which generally equals the vesting period.

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.

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. Total comprehensive income (loss) is presented in the condensed consolidated statements of comprehensive income (loss).

Recent Accounting Pronouncements

Recently Issued Accounting Standards not yet adopted

In August 2018, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2018-15 "Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract ("ASU 2018-15"). These amendments align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by these amendments. ASU 2018-15 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2019. Early adoption is permitted. The Company is currently assessing the impact that adoption of this guidance will have on its consolidated financial statements.

In August 2018, the FASB issued Accounting Standard Updates ("ASU") ASU No. 2018-13, "Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement ("ASU 2018-13"). ASU 2018-13 amends existing fair value measurement disclosure requirements by adding, changing, or removing certain disclosures. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements, and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. ASU No. 2018-13 is effective for fiscal years and interim periods within those fiscal years, beginning after December 15, 2019. 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.

In June 2018, the FASB issued ASU 2018-07, "Compensation -Stock Compensation: Improvement to Nonemployees Share-Based Payment Accounting ("ASU 2018-07"), which expands the scope of Topic 718 to include all share-based payment transactions for acquiring goods and services from nonemployees. ASU 2018-07 specifies that Topic 718

applies to all share-based payment transactions in which the grantor acquires goods and services to be used or consumed in its own operations by issuing share-based payment awards. ASU 2018-07 also clarifies that Topic 718 does not apply to share-based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC 606. ASU 2018-07 is effective fiscal years beginning after December 15, 2018, including interim periods within that fiscal year, with early adoption permitted, but no earlier than our adoption of ASC 606. 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.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

In February 2016, the FASB issued ASU 2016-02, Leases. This guidance requires a dual approach for lessee accounting under which a lessee will account for leases as finance leases or operating leases. Both finance and operating leases will result in the lessee recognizing a right-of-use asset and a corresponding liability on its balance sheet, with differing methodology for income statement recognition. This guidance is effective for public business entities for fiscal years, and interim periods within those years, beginning after December 15, 2018, and early adoption is permitted. The Company will adopt this standard in the first quarter of 2020, using the modified retrospective transition method and recording a cumulative-effect balance sheet adjustment. The Company is currently in the process of measuring the right-of-use assets and lease liabilities that will be recorded on the date of adoption for the qualified leases. While the impact on the Company's results of operations is being evaluated we expect that most of our operating lease commitments will be subject to the new standard and recognized as operating lease liabilities and right-of-use assets upon adoption. The impact of this ASU is non-cash in nature and will not affect the Company's cash flows.

Recently Adopted Accounting Standards

In August 2018, the SEC adopted the final rule under SEC Release No. 33-10532, Disclosure Update and Simplification, amending certain disclosure requirements that were redundant, duplicative, overlapping, outdated or superseded. In addition, the amendments expanded the disclosure requirements on the analysis of stockholders' equity for interim financial statements. Under the amendments, an analysis of changes in each caption of stockholders' equity presented in the balance sheet must be provided in a note or separate statement. The analysis should be presented in the form of a reconciliation of the beginning balance to the ending balance of each period for which a statement of comprehensive income is required to be filed with the SEC. The Company's first presentation of changes in stockholders' equity has been included in its Form 10-Q for the quarter ending March 31, 2019.

In May 2017, the FASB issued ASU 2017-09, "Compensation -Stock Compensation: Scope of Modification Accounting ("ASU 2017-09"). ASU 2017-09 is an update to the existing guidance to clarify when modification accounting would be applied for a change to the terms or conditions of a share-based award. Under this new guidance, modification accounting is required only if the fair value, a vesting condition, or the classification of the award changes as a result of the change in terms or conditions. This ASU is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2017 with early adoption permitted. The Company does not regularly modify the terms and conditions of its share-based awards and the adoption of this guidance had no impact on its financial statements.

In November 2016, the FASB issued ASU 2016-18, "Statement of Cash Flows: Restricted Cash ("ASU 2016-18"). ASU 2016-18 requires amounts generally described as restricted cash and restricted cash equivalents be included with cash and cash equivalents when reconciling the total beginning and ending amounts for the periods shown on the statement of cash flows. This ASU is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted and requires retrospective adoption. The Company adopted this standard effective July 1, 2018. The reclassified restricted cash balances from investing activities to changes in cash, cash equivalents and restricted cash on the condensed consolidated statements of cash flows were not material for all periods presented.

In August 2016, the FASB issued ASU No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments ("ASU 2016-15"). ASU 2016-15 identifies how certain cash receipts and cash payments are presented and classified in the Statement of Cash Flows under Topic 230. ASU 2016-15 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted. Upon adoption, entities must apply the guidance retrospectively to all periods presented. There was no

impact on the Company's consolidated financial statements upon the adoption of this standard.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (ASC 606). The standard provides companies with a single model for use in accounting for revenue arising from contracts with customers and supersedes current revenue recognition guidance, including industry-specific revenue guidance. The core principle of the model is to recognize revenue when control of the goods or services transfers to the customer, as opposed to recognizing revenue when the risks and rewards transfer to the customer under the existing revenue guidance. The change for the Company under ASC 606 relates to the timing of revenue recognition with two U.S.-based distributors. Sales to these distributors are governed under the terms of agreements providing extended price protection and other return rights, and were historically deferred under the previous accounting guidance until the related product was sold to the end customer. Under ASC 606, the transaction price takes into consideration the effect of variable consideration such as price adjustments and returns rights, which are estimated and recorded at the time the goods are delivered. Accordingly, the Company recognizes revenue

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under ASC 606 at the time of shipment or delivery to these two distributors, adjusted for estimates of the price adjustments and product returns based on historical data and other available information. Revenue from other non-U.S. distributors and direct customers, which consists of the majority of the Company's total revenue, is recognized at the time of shipment or delivery to the distributors and direct customers. Accordingly, revenue recognition with these distributors and direct customers remains unchanged upon adoption of ASC 606. See "Note 2 - Revenue" for additional information on the impact of the adoption of the new standard on the Company's consolidated financial statements.

2. Revenue

Impact from the Adoption of the New Revenue Standard:

On July 1, 2018, the Company adopted ASC 606 using the modified retrospective method applied to all contracts. Results for reporting periods beginning after July 1, 2018 were presented under ASC 606, while prior period amounts were not adjusted and continue to be reported in accordance with our historic accounting under ASC 605.

The change for the Company under ASC 606 relates to the timing of revenue recognition with two U.S.-based distributors. Sales to these distributors are governed under terms of agreements providing extended price protection and other return rights. The Company recorded a net increase to opening retained earnings of \$1.0 million as of July 1, 2018 due to the cumulative impact of adopting ASC 606, with a corresponding \$1.6 million decrease in deferred margin, a \$0.2 million decrease in accounts receivables, a \$0.1 million increase in current accrued liabilities, and a \$0.3 million increase in deferred tax liabilities. Effective July 1, 2018, the Company recognized revenue at the time of shipment or delivery to these two distributors, adjusted for estimates of the price adjustments and return rights based on historical data and other available information. Based on the Company's assessment, only minimal changes were required to the Company's existing policies, processes, and controls to support the standard's measurement and disclosure requirements.

The following tables compare the amounts reported in the condensed consolidated statements of income and condensed consolidated balance sheet to the amounts had the previous revenue recognition guidance been in effect:

As of March 31, 2019							
	As Reported	Adjustment	Balances Without Adoption				
	(in thousands)						
Accounts receivable, net	\$28,410	\$ 134	\$28,544				
Accrued liabilities	\$40,736	\$ (101)	\$40,635				
Deferred margin	\$—	\$ 1,670	\$ 1,670				
Income taxes payable	\$2,100	\$ (39)	\$2,061				
Deferred income tax liabilities	\$1,325	\$ (291)	\$1,034				
Retained earnings	\$122,940	\$ (1,105)	\$121,835				

Three Months Ended March 31, 2019				Nine Months Ended March 31, 2019			
	As Reported	Adjustment	Balances Without Adoption		As Reported	Adjustment	Balances Without Adoption
	(in thousands)				(in thousands)		

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Revenue	\$109,067	\$ (21)	\$109,046	\$339,064	\$ (329)	\$338,735
Cost of goods sold	\$83,438	\$ (91)	\$83,347	\$251,322	\$ (205)	\$251,117
Gross profit	\$25,629	\$ 70	\$25,699	\$87,742	\$ (124)	\$87,618
Income tax expense	\$625	\$ 6	\$631	\$1,886	\$ (39)	\$1,847
Net loss including noncontrolling interest	\$(5,955)	\$ 64	\$(5,891)	(12,403)	\$ (85)	\$(12,488)

New Revenue Recognition Policy Including Significant Judgments and Estimates

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As a result of the adoption of the new revenue standard on July 1, 2018, at the beginning of the first quarter of fiscal year 2019, 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 has written contracts with combination of agreements and purchase orders with all customers including certain general terms and conditions. Often purchase orders entail merchandises, quantities and prices, which define the performance obligations of each party and are approved or accepted by the Company. The Company's contracts with customers do not typically include extended payment terms. Payment terms vary by contract type and type of customer and generally range from 30 to 60 days.

The Company's performance obligations are to deliver the requested goods or services to customers according to the agreed shipping terms. As such, there is no material difference in regards to performance obligations vs. "deliverables" under ASC 606 vs. the legacy revenue guidance. The Company recognizes revenue when the performance obligation is satisfied.

The majority of the Company's total revenue is from non-U.S. distributors and direct customers, which is recognized at the time of shipment or delivery to distributors and direct customers. Accordingly, revenue recognition with these distributors and direct customers remains unchanged upon adoption of ASC 606. As noted above, the change for the Company under ASC 606 relates to the timing of revenue recognition with two U.S.-based distributors. Sales to these distributors are governed under the terms of agreements providing extended price protection and other return rights, and were historically deferred under the previous accounting guidance until the related product was sold to end customers. Under ASC 606, the transaction price takes into consideration the effect of variable consideration such as price adjustments and return rights, which are estimated and recorded at the time the goods are delivered.

Because all of the Company's performance obligations relate to contracts with a duration of less than one year, the Company elected to apply the optional exemption practical expedient provided in ASC 606 and, therefore, is not required to disclose the aggregate amount of the transaction price allocated to performance obligations that are unsatisfied or partially unsatisfied at the end of the reporting period.

The Company adjusts the transaction price for variable consideration. Variable consideration primarily represents adjustments related to stock rotation rights and price adjustments provided to our distributors. As a practical expedient, the Company recognizes the incremental costs of obtaining a contract, specifically commission expenses that have a period of benefit of less than twelve months, as an expense when incurred. Additionally, the Company has adopted an accounting policy to recognize shipping costs that occur after control transfers to the customer as a fulfillment activity.

The Company warrants its products to be free of defects generally for a period of one year. The Company estimates its warranty costs based on historical warranty claim experience and includes such costs in cost of goods sold. Warranty expenses and the accrued warranty liability were not material as of March 31, 2019.

The following table presents the Company's revenue information by geographical location based on the country or region to which the products were shipped. 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.

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	Three Months Ended March 31,		Nine Months Ended March 31,	
	2019	2018	2019	2018
	(in thousands)		(in thousands)	
Hong Kong	\$87,143	\$84,632	\$265,914	\$252,302
China	18,834	15,849	63,991	52,122
South Korea	260	243	568	831
United States	1,684	1,358	5,624	4,050
Other countries	1,146	820	2,967	2,351
	\$109,067	\$102,902	\$339,064	\$311,656

The following is a summary of revenue by product type:

	Three Months Ended March 31,		Nine Months Ended March 31,	
	2019	2018	2019	2018
	(in thousands)		(in thousands)	
Power discrete	\$89,936	\$83,982	\$275,485	\$252,754
Power IC	17,631	15,685	56,430	49,540
Packaging and testing services	1,500	3,235	7,149	9,362
	\$109,067	\$102,902	\$339,064	\$311,656

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

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

	Three Months Ended March 31, 2019	Three Months Ended March 31, 2018	Nine Months Ended March 31, 2019	Nine Months Ended March 31, 2018
	(in thousands)	(in thousands)	(in thousands)	(in thousands)
Employee stock options and RSUs	2,225	165	2,220	167
ESPP	891	381	988	157
Total potential dilutive securities	3,116	546	3,208	324

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4. 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 and review 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 requirements, while sales to new customers or customers with low credit ratings are usually made on an advance payment basis. The Company considers its trade accounts receivable 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 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, when available.

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

	Three Months		Nine Months	
	Ended March		Ended March	
	31,		31,	
Percentage of revenue	2019	2018	2019	2018
Customer A	26.8 %	25.9 %	28.4 %	28.1 %
Customer B	36.2 %	37.0 %	37.3 %	34.8 %

	March 31,		June 30,	
Percentage of accounts receivable	2019		2018	
Customer A	19.4	%	17.1	%
Customer B	18.1	%	35.5	%
Customer C	14.1	%	10.6	%

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5. Balance Sheet Components

Accounts receivable, net:

	March 31, June 30,	
	2019	2018
	(in thousands)	
Accounts receivable	\$51,260	\$52,687
Less: Allowance for price adjustments	(22,820)	(18,902)
Less: Allowance for doubtful accounts	(30)	(30)
Accounts receivable, net	\$28,410	\$33,755

Inventories:

	March 31, June 30,	
	2019	2018
	(in thousands)	
Raw materials	\$57,094	\$47,097
Work in-process	38,954	35,243
Finished goods	11,882	7,842
	\$107,930	\$90,182

Other current assets:

	March 31, June 30,	
	2019	2018
	(in thousands)	
VAT receivable	\$30,277	\$17,601
Other prepaid expenses	2,940	2,121
Prepaid insurance	227	906
Prepaid maintenance	665	556
Prepayment to supplier	1,057	227
Prepaid income tax	745	761
Custom deposit	161	5,749
Lease financing cost	994	960
Other receivable	38	670
	\$37,104	\$29,551

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Property, plant and equipment, net:

	March 31, 2019	June 30, 2018
	(in thousands)	
Land	\$4,877	\$4,877
Building	34,263	4,325
Manufacturing machinery and facility equipment	330,212	273,737
Equipment and tooling	19,800	16,605
Computer equipment and software	28,510	25,686
Office furniture and equipment	3,037	2,314
Leasehold improvements	22,570	21,355
Land use rights	8,958	9,089
	452,227	357,988
Less: accumulated depreciation	(247,709)	(225,184)
	204,518	132,804
Equipment and construction in progress	187,120	198,852
Property, plant and equipment, net	\$391,638	\$331,656

Intangible assets, net:

	March 31, 2019	June 30, 2018
	(in thousands)	
Patents and technology rights	\$18,037	\$17,633
Trade name	268	268
Customer relationships	1,150	1,150
	19,455	19,051
Less: accumulated amortization	(2,813)	(2,729)
	16,642	16,322
Goodwill	269	269
Intangible assets, net	\$16,911	\$16,591

Intangible assets of patents and technology rights are primarily related to a license agreement that the Company entered into with STMicroelectronics International N.V. ("STMicro") on September 5, 2017, pursuant to which STMicro granted the Company 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 by STMicro. This agreement allows the Company to develop and market products in a new market for digital power products, primarily in the computer server segment. As of March 31, 2019, the Company recorded \$16.2 million of intangible assets related to STMicro. The Company begins amortizing such license fees when the technology has met the Company's qualification and is ready for its intended use in production.

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Other long-term assets:

	March 31, 2019	June 30, 2018
	(in thousands)	
Prepayments for property and equipment	\$6,040	\$17,599
Investment in a privately held company	700	700
Lease financing costs	1,987	1,922
VAT long-term receivable	—	3,396
Customs deposit	1,220	1,589
Other long-term deposits	909	2,252
Office leases deposits	991	853
Other	412	387
	\$12,259	\$28,698

Accrued liabilities:

	March 31, 2019	June 30, 2018
	(in thousands)	
Accrued compensation and benefits	\$14,525	\$18,484
Warranty accrual	653	535
Stock rotation accrual	1,723	1,750
Accrued professional fees	1,660	1,922
Accrued inventory	1,094	667
Accrued facilities related expenses	3,934	2,163
Accrued financing lease costs	744	1,510
Accrued property, plant and equipment	8,874	18,145
Other accrued expenses	7,529	4,665
	\$40,736	\$49,841

The activities in the warranty accrual, included in accrued liabilities, are as follows:

	Nine Months Ended March 31,	
	2019	2018
	(in thousands)	
Beginning balance	\$535	\$1,866
Additions (reductions)	229	(1,203)*
Utilization	(111)	(52)
Ending balance	\$653	\$611

* Released a specific warranty reserve of approximately \$1.0 million due to expired warranty period.

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The activities in the stock rotation accrual, included in accrued liabilities, are as follows:

	Nine Months Ended March 31,	
	2019	2018
	(in thousands)	
Beginning balance	\$ 1,750	\$ 1,871
Additions	3,589	2,147
Utilization	(3,616)	(2,244)
Ending balance	\$ 1,723	\$ 1,774

Other long-term liabilities:

	March 31, 2019	June 30, 2018
	(in thousands)	
Deferred rent	\$ 85	\$ 238
Customer deposits	10,000	—
Other	908	755
Other long-term liabilities	\$ 10,993	\$ 993

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6. Bank Borrowings

Short-term borrowing

On March 21, 2019, the JV Company entered into an one-year loan agreement with China Everbright Bank in China to provide a loan for Chinese Renminbi (RMB) 20 million, or \$3.0 million based on currency exchange rate between RMB and U.S. Dollars on March 31, 2019 at fixed interest rate of 5.44% per annum. Interest payments are due monthly with the entire principal due on March 21, 2020. As of March 31, 2019, the outstanding balance under the loan was 20 million RMB (equivalent of \$3.0 million based on the currency exchange rate as of March 31, 2019).

On November 29 and December 4, 2018, the JV Company entered into two one-year loan agreements with China Merchant Bank in China to provide loans for RMB 80 million and 20 million, respectively, or \$14.5 million in total based on currency exchange rate between RMB and U.S. Dollars on December 31, 2018 at varying interest rates. Interest payments are due monthly and quarterly with the entire principal due not later than December 18 and December 5, 2019, respectively. As of March 31, 2019, the outstanding balances under the loans were 80 million RMB and 20 million (equivalent of \$14.9 million in total based on the currency exchange rate as of March 31, 2019).

On November 16, 2018, the Company's subsidiary in China entered into a line of credit facility with Industrial and Commercial Bank of China, which expires on September 30, 2019. The purpose the credit facility is to provide short-term borrowings. The Company can borrow up to approximately RMB 72.0 million or \$10.3 million based on currency exchange rate between RMB and U.S. Dollars on November 16, 2018. As of March 31, 2019, there was no outstanding balance under the line of credit.

Credit Facilities

On May 9, 2018 (the "Effective Date"), the JV 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 RMB 400.0 million, or \$62.8 million based on the currency exchange rate between RMB and U.S. Dollars on the Effective Date, of financing to the JV Company (the "Lease Financing"). In exchange for the Lease Financing, the JV Company agrees to transfer title of its assembly and testing equipment to the Lenders, and the Lenders lease such equipment to the JV Company under a five-year lease arrangement, pursuant to which the JV 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, or 5.4625% on the Effective Date. Under the Agreements, at the end of the five-year lease term, the Lenders agree to sell such equipment back to the JV Company for a nominal amount (RMB 1). The JV Company's obligations under the Lease Financing are secured by the land and building owned by the JV Company (the "Collateral"). 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 JV 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. The Agreements include certain customary closing conditions, including the payment of deposit by the JV Company. As of March 31, 2019, the outstanding balance under the Agreement was 388.0 million RMB (equivalent of \$57.8 million based on the currency exchange rate as of March 31, 2019), which was recorded under short-term and long-term capital lease liabilities.

Capital lease liabilities include financing leases, computer software and exclusive technology rights. Future minimum lease payments are as follows (in thousands):

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Year ending June 30,	
2019 (Remaining)	\$2,809
2020	14,540
2021	18,200
2022	17,310
2023	12,547
Total minimum lease payments	65,406
Less amount representing interest	(7,433)
Total capital lease liabilities	\$57,973

	March
Reported as:	31,
	2019
Capital lease - short-term	\$9,593
Capital lease - long-term	48,380
	\$57,973

Long-term debt

On March 12, 2019, the JV Company entered into a loan agreement with The Export-Import Bank of China in the aggregate principal amount of 200 million RMB (approximately \$29.8 million based on currency exchange rate between RMB and U.S. Dollars on March 31, 2019). The loan will mature on February 28, 2020. The JV Company drew down 190 million RMB (approximately \$28.3 million based on the currency exchange rate between RMB and U.S. Dollars on March 31, 2019) in March 2019. Interest is accrued based on the China Base Rate plus 10%. The loan requires quarterly interest payments, along with the principal payments, over 72 months commencing in October 2019. The obligation under this loan agreement is secured by the buildings and certain equipment owned by the JV Company. As a condition of the loan arrangements, 14 million RMB (approximately \$2.1 million) of cash is held as restricted cash by the JV Company as a compensating balance at the JV Company's bank until the principal is paid. As of March 31, 2019, the outstanding balance of the loan was 190 million RMB (equivalent of \$28.3 million based on the currency exchange rate as of March 31, 2019).

On May 1, 2018, Jireh Semiconductor Incorporated ("Jireh"), a wholly-owned subsidiary of the Company, entered into a loan agreement with a financial institution (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. The Company was in compliance with these covenants as of March 31, 2019. As of March 31, 2019, the outstanding balance of the term loan was \$17.0 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 Company's 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 the loan in the amount of \$13.2 million and \$16.7 million, respectively. Beginning in October

2018, Jireh was 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. The Company was in compliance with these covenants as of March 31, 2019. As of March 31, 2019, the outstanding balances of the term loan were \$26.1 million.

Maturities of short-term debt and long-term debt were as follows (in thousands):

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Year ending June 30,	
2019 (Remaining)	\$2,085
2020	27,096
2021	9,829
2022	15,188
2023	22,876
Thereafter	12,206
Total principal of debt	89,280
Less: debt issuance costs	(210)
Total principal of debt, less debt issuance costs	\$89,070
	March
Reported as:	31,
	2019
Short-term debt	\$26,571
Long-term debt	62,499
	\$89,070

7. 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 September 30, 2018, the Company owned 54.4%, and the Chongqing Funds owned 45.6%, of the equity interest in the JV Company. At the end of December 2018, the Chongqing Funds invested additional \$24.0 million in cash contribution to the JV Company, which resulted in the Company owning 50.9%, and the Chongqing Funds owning 49.1%, of the equity interest in the JV Company. The JV Company commenced small mass production of wafer assembly and testing during the quarter ended September 30, 2018. During the quarter ended March 31, 2019, the JV Company continued the production ramp at the assembly and testing facility and produced customer samples from the 12-inch wafer fabrication facility.

As part of the JV Transaction, the JV Company entered into an Engineering, Procurement and Construction Contract (the “EPC Contract”) with The IT Electronics Eleventh Design & Research Institute Scientific and Technological Engineering Corporation Limited (the “Contractor”), effective as of January 10, 2017 (the “Effective Date”), pursuant to which the Contractor was engaged to construct the manufacturing facility contemplated under the JV Agreement. The total price payable under the EPC Contract is Chinese Renminbi (RMB) 540.0 million, or approximately \$78.0 million based on the currency exchange rate between RMB and U.S. Dollars on the Effective Date, which consists of \$2.8 million (RMB 19.5 million) of design fees and \$75.2 million (RMB 520.5 million) of construction and procurement fees (including compliance with safety and aesthetic requirements). As of March 31, 2019, the JV Company paid approximately \$71.5 million (RMB 480.0 million), and expects to pay the remaining of \$8.9 million (RMB 60.0 million) in the near term.

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8. Shareholders' Equity and Share-based Compensation
Share Repurchase

In September 2017, the Board of Directors approved a new repurchase program (the "Repurchase Program"), that allows 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, availability of the Company's 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 the nine months ended March 31, 2019, the Company repurchased an aggregate of 111,509 shares from the open market, for a total cost of \$1.5 million, excluding fees and related expenses, at an average price of \$13.43 per share. Since the inception of the prior repurchase program in 2010, the Company repurchased an aggregate of 6,784,648 shares from the open market including shares purchased in a dutch tender offer for a total cost of \$67.3 million, at an average price of \$9.92 per share, excluding fees and related expenses. No repurchased shares have been retired. Of the 6,784,648 repurchased shares, 138,828 shares with a weighted average repurchase price of \$10.41 per share, were reissued at an average price of \$5.55 per share pursuant to option exercises and vested restricted share units. As of March 31, 2019, approximately \$13.4 million remained available under the Repurchase Program.

Time-based Restricted Stock Units ("TRSU")

The following table summarizes the Company's TRSU activities for the nine months ended March 31, 2019:

	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, 2018	919,023	\$ 15.14	1.62	\$13,086,888
Granted	479,346	\$ 11.30		
Vested	(463,633)	) \$ 13.15		
Forfeited	(31,750)	) \$ 13.34		
Nonvested at March 31, 2019	902,986	\$ 14.19	1.77	\$13,644,118
TRSUs vested and expected to vest	809,820		1.71	\$12,236,385

The Board approved the incentive bonus plan (the "Plan") for the calendar year commencing January 1, 2018 pursuant to which each executive officer of the Company who continues in service through the end of the calendar year would be eligible to receive an incentive award, based on the level of attainment of certain specified Company performance goals. The Company recorded \$1.0 million of such RSUs expense during the nine months ended March 31, 2019.

Market-based Restricted Stock Units ("MSUs")

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 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 each performance period. The Company estimated the grant date fair values of its MSUs with derived service periods of 4.5 to 7.5 years using a Monte-Carlo simulation model with the following assumptions: Risk-free interest rate of 2.7%, expected term of 3.5 years, expected volatility of 38.8% and dividend yield of 0%. The Company recorded approximately \$0.1 million and \$0.5 million of expense for these MSUs during the three and nine months ended March 31, 2019.

The following table summarizes the Company's MSUs activities for the nine months ended March 31, 2019:

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	Number of Performance-based Restricted Stock Units	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Recognition Period (Years)
Nonvested at June 30, 2018	—	\$ —	—
Granted	1,310,000	\$ 5.17	
Vested	—	\$ —	
Forfeited	(20,000)	\$ 5.17	
Nonvested at March 31, 2019	1,290,000	\$ 5.17	5.22
MSUs vested and expected to vest	934,352		5.14
Performance-based Restricted Stock Units ("PRSUs")			

In March 2017, 2018 and 2019, the Company granted 170,000, 291,750 and 298,000 performance-based RSUs ("PRSUs"), respectively to certain personnel. The number shares to be earned under the PRSUs is determined based on the level of attainment of predetermined financial goals. The PRSUs vest in four equal annual installments from the first anniversary date after the grant date if certain predetermined financial goals were met. The Company recorded approximately \$0.8 million and \$2.2 million of expenses for these PRSUs during the three and nine months ended March 31, 2019, respectively.

The following table summarizes the Company's PRSUs activities for the nine months ended March 31, 2019:

	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, 2018	422,300	\$ 16.63	2.06	\$6,013,552
Granted	291,750	\$ 11.18		
Vested	(111,623)	\$ 16.68		
Forfeited	(5,203)	\$ 17.32		
Nonvested at March 31, 2019	597,224	\$ 13.95	2.13	\$9,024,055
PRSUs vested and expected to vest	523,909		2.07	\$7,916,271

Stock Options

The Company did not grant any stock options during the three and nine months ended March 31, 2019. The number of options expected to vest is the result of applying the pre-vesting forfeiture rate assumption to total outstanding options.

The following table summarizes the Company's stock option activities for the nine months ended March 31, 2019:

	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at June 30, 2018	886,978	\$ 10.97	4.03	\$3,557,248
Exercised	(10,500)	\$ 10.50		\$43,415
Outstanding at March 31, 2019	876,478	\$ 10.98	3.32	\$4,095,163

Options vested and expected to vest	876,478	\$ 10.98	3.32	\$4,095,163
Exercisable at March 31, 2019	876,478	\$ 10.98	3.32	\$4,095,163

Employee Share Purchase Plan ("ESPP")

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The assumptions used to estimate the fair values of common shares issued under the ESPP were as follows:

	Nine Months Ended March 31, 2019
Volatility rate	40.1%
Risk-free interest rate	2.5% - 2.9%
Expected term	1.3 years
Dividend yield	0%

Share-based Compensation Expense

The total share-based compensation expense recognized in the condensed consolidated statements of operations for the periods presented was as follows:

	Three Months Ended March 31, 2019		Nine Months Ended March 31, 2019	
	2018		2018	
	(in thousands)		(in thousands)	
Cost of goods sold	\$494	\$449	\$1,532	\$1,180
Research and development	555	361	1,929	1,340
Selling, general and administrative	2,063	1,650	7,198	5,957
	\$3,112	\$2,460	\$10,659	\$8,477

As of March 31, 2019, total unrecognized compensation cost under the Company's equity plans was \$16.8 million, which is expected to be recognized over a weighted-average period of 2.4 years.

9. Income Taxes

For the three months ended March 31, 2019, the Company recognized income tax expense of approximately \$0.6 million, which included a discrete tax expense of \$0.2 million related principally to prior year tax reserve releases. For the three months ended March 31, 2018, the Company recognized income expense of \$0.8 million, which included a discrete tax benefit of \$0.2 million related principally to prior year tax reserve releases. Excluding the discrete income tax items, the estimated effective tax rate for the three months ended March 31, 2019 was (14.8)% compared to 291.8% for the three months ended March 31, 2018. The changes in the effective tax rate and tax expense between the periods resulted primarily from changes in the mix of earnings in various geographic jurisdictions between the current year and the same period of last year somewhat offset by the reduction in the U.S. corporate tax rate following the enactment of the 2017 U.S. Tax Cut and Jobs Act.

For the nine months ended March 31, 2019, the Company recognized income tax expense of approximately \$1.9 million, which included a discrete tax expense of \$0.1 million. For the nine months ended March 31, 2018, the Company recognized an income tax expense of approximately \$0.03 million, which included an offset to income tax expense for a discrete tax benefit of \$2.7 million related to remeasuring the Company's U.S. deferred tax assets and liabilities following enactment of the 2017 U.S. Tax Cut and Jobs Act in December 2017 and a discrete tax benefit of \$0.2 million related principally to prior year tax reserve releases. Excluding the discrete income tax items, the estimated effective tax rate for the nine months ended March 31, 2019 was (19.2)% compared to 35.5% for the nine months ended March 31, 2018. The changes in the effective tax rate and tax expense between the periods resulted primarily from the reduction in the U.S. corporate tax rate following the enactment of the 2017 U.S. Tax Cut and Jobs Act along with changes in the mix of earnings in various geographic jurisdictions between the current year and the same period of last year.

The Company adopted ASC 606 using the modified retrospective method applied to those contracts which were not completed as of July 1, 2018. Results for reporting periods beginning after July 1, 2018 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting under ASC 605. The adoption resulted in a derecognition of a deferred tax asset of \$0.3 million related to previously unrecognized gross profit for U.S. GAAP purposes that was previously recognized for income tax purposes, with an offsetting reduction to retained earnings.

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The Company files its income tax returns in the United States and in various foreign jurisdictions. The tax years 2001 to 2018 remain open to examination by U.S. federal and state tax authorities. The tax years 2011 to 2018 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. As of March 31, 2019, the gross amount of unrecognized tax benefits was approximately \$7.4 million, of which \$4.5 million, if recognized, would reduce the effective income tax rate in future periods. 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. The Company does not anticipate any material changes to its uncertain tax positions during the next twelve months.

On July 27, 2015, in *Altera Corp. v. Commissioner*, the U.S. Tax Court issued an opinion related to the treatment of share-based compensation expense in an intercompany cost-sharing arrangement. A final decision has yet to be issued by the Tax Court due to other outstanding issues related to the case. At this time, the U.S. Department of the Treasury has not withdrawn the requirement to include share-based compensation from its regulations. Due to the uncertainty surrounding the status of the current regulations, questions related to the scope of potential benefits, and the risk of the Tax Court's decision being overturned upon appeal, the Company has not recorded any benefit as of March 31, 2019. The Company will continue to monitor ongoing developments and potential impacts to its financial statements.

10. 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.

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

	March 31, June 30, 2019 2018	
	(in thousands)	
China	\$306,331	\$248,003
United States	84,608	83,040
Other Countries	699	613
	\$391,638	\$331,656

For our revenues by geography, please refer to Note 2.

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11. Commitments and Contingencies

Purchase Commitments

As of March 31, 2019 and June 30, 2018, the Company had approximately \$47.3 million and \$38.0 million, respectively, of outstanding purchase commitments primarily for purchases of semiconductor raw materials, wafers, spare parts and packaging and testing services, and approximately \$23.0 million and \$58.3 million, respectively, of capital commitments for the purchase of property and equipment and EPC construction.

Other Commitments

See Note 6 and Note 7 of the Notes to the Condensed Consolidated Financial Statements contained in this Quarterly Report on Form 10-Q for descriptions of commitments including bank borrowings and Joint Venture.

Contingencies and Indemnities

The Company is currently not a party to any pending material legal proceedings. 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.

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 has been made at March 31, 2019 and June 30, 2018.

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 in the future.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Except for the historical information contained herein, the matters addressed in this Item 2 constitute "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. Such forward-looking statements are subject to a variety of risks and uncertainties, including those discussed below under the heading "Risk Factors" and elsewhere in this Quarterly Report on Form 10-Q, that could cause actual results to differ materially from those anticipated by the Company's management. The Private Securities Litigation Reform Act of 1995 (the "Act") provides certain "safe harbor" provisions for forward-looking statements. All forward-looking statements made in this Quarterly Report on Form 10-Q are made pursuant to the Act. The Company undertakes no obligation to publicly release the results of any revisions to its forward-looking statements that may be made to reflect events or circumstances after the date hereof or to reflect the

occurrence of unexpected events. Unless the context otherwise requires, the words “AOS,” the “Company,” “we,” “us” and “our” refer to Alpha and Omega Semiconductor Limited and its subsidiaries.

This management's discussion should be read in conjunction with the management's discussion included in the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2018, filed with the Securities and Exchange Commission on August 23, 2018.

Overview

We are a designer, developer and global supplier of a broad portfolio of power semiconductors. Our portfolio of power semiconductors includes approximately 1,900 products, and has grown with the introduction of 200 new products during the fiscal year ended June 30, 2018, and over 80 and 90 new products in each of the fiscal years ended June 30, 2017 and 2016, respectively. During the nine months ended March 31, 2019, we introduced an additional 126 new products. 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 770 patents and 89 patent applications in the United States as of March 31, 2019. We also have a total of 810 foreign patents, which primarily were based on our research and development efforts through March 31, 2019. 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 personal computers, flat panel TVs, LED lighting, 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 in Hillsboro, Oregon, or the Oregon fab, which is critical for us to accelerate proprietary technology development and new product introduction as well as to improve our financial performance in the long run. 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, we 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 we and the Chongqing Funds formed a joint venture, (the "JV Company"), for the purpose of constructing a power semiconductor packaging, testing and wafer fabrication facility in the Liangjiang New Area of Chongqing, China (the "JV Transaction"). We currently own 50.9%, and the Chongqing Funds own 49.1%, of the equity interest in the JV Company. The JV Company commenced small mass production of wafer assembly and testing during the quarter ended September 30, 2018. During the quarter ended March 31, 2019, the JV Company continued the production ramp at the assembly and testing facility and produced customer samples from the 12-inch wafer fabrication facility. We expect to ramp up assembly and testing, and commence small mass production from the 12-inch fab within the next two quarters. During the three and nine months ended March 31, 2019, we recorded \$4.4 million and \$11.7 million, respectively, in net loss attributable to noncontrolling interest in the JV Company. In the long-term, we expect the joint venture to deliver significant cost savings, enhance our market positions in China, and drive meaningful improvements in working capital and capital expenditures.

On September 5, 2017, we entered into 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 previously offered by STMicro. Under the license agreement, we agreed to pay a total price in cash of \$17.0 million based on the payment schedule as set forth in the agreement of approximately \$10.1 million, \$6.7 million and \$0.2 million in calendar year 2017, 2018 and 2019, respectively. As of March 31, 2019, we recorded \$16.2 million of such intangible assets.

During the third quarter of fiscal year of 2019, we introduced a new family of EZBuck™ regulators. The new devices provide a compact, efficient power converter solution for next-generation chipsets used in high-end TVs, servers, data storage systems, networking and other compact PC systems. We also introduced a high SOA MOSFET for hot swap applications. This new device delivers low Rdson with a high Safe Operating Area (SOA) capabilities ideally suited for demanding applications such as hot swap and effuse. A high SOA is essential in server hot swap applications where the MOSFET needs to be robust to manage the high in-rush current effectively. Moreover, we launched New 650V GaN™ product family. The transistor is ideally suited for high efficiency and high-density power supplies in the telecom, server, and consumer adapter markets. These high-efficiency server power supplies are needed to reduce cooling requirements, maximize rack area, and minimize the associated energy cost. In addition, we announced latest XSPairFET™ buck-boost MOSFET for type-c applications such as notebook, USB hubs, and power banks. During the first quarter of fiscal year of 2019, we announced a new Type-C Power Delivery compliant

input protection switch with up to 28V over-voltage protection. This new device offers low RDS(ON) (20mohm) in a thermally enhanced 3x3mm DFN package, made possible by our advanced co-packaging technology, combining a high performance IC with protection features and our latest high SOA MOSFET. We also announced new TO-Leadless (TOLL) packaging technology for high current 400A applications. The TOLL packaging technology offers very low package resistance and inductance due to the clip technology in comparison to other TO-Leadless packages using standard wire-bonding technology which enables improved EMI performance.

Factors affecting our performance

Our performance is affected by several key factors, including the following:

Costs of JV Company and digital power business: We are incurring an increase in operating expenses due to the additional costs associated with ramping up pre-production activities of the JV Company, as well as the initial startup work to develop and establish our new digital power business, both of which will have the significant impact on our financial performance. The JV Company commenced small mass production of wafer assembly and testing during the quarter ended September 30, 2018. During the quarter ended March 31, 2019, the JV Company continued the production ramp at the assembly and testing facility and produced customer samples from the 12-inch wafer fabrication facility. The pre-production costs include costs relating to the installation of equipment; performance of the qualification process; increased demand for electrical power and other utilities; increased headcount as a result of hiring of additional personnel, staff and operators; and establishment of administrative and management functions and systems. In addition, a portion of these pre-production expenses and production ramp-up costs cannot be capitalized under U.S. GAAP accounting, therefore such costs impact our profitability. Furthermore, we are developing our digital power business based on the STMicro license agreement in September 2017, which will allow us to design and distribute a full suite of advanced low-voltage power IC products. We have incurred and expect to continue to incur additional costs, including costs relating to hiring and compensation of qualified engineers and technical staff and other research and development and management activities, as we continue to build this new business. In the short term, we will not be able to generate sufficient amount of revenue from either of these two business initiatives to offset the increase costs, which will likely negatively impact our results of operations.

Manufacturing costs: Our gross margin is affected by a number of factors including our manufacturing costs, utilization of our manufacturing facilities, 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 associated with our packaging and testing facilities and our Oregon fab and our Chongqing fabrication facility operated by the JV Company. We expect that in the long term our joint venture agreement with Chongqing Funds will reduce our cost of manufacturing. If we are unable to utilize our manufacturing facilities at a desired level, our gross margin may be adversely affected. In addition, from time to time, we may experience wafer capacity constraints, particularly at third party foundries, that may prevent us from fully meeting the demand of our customers. While we can mitigate such 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.

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.

The global, regional economic and PC market conditions: Because our products primarily serve consumer electronic applications, a deterioration of the global and regional economic conditions could materially affect our revenue and results of operations. For example, because a significant amount of our revenue is derived from sales of products in

the personal computing ("PC") markets, such as notebooks, motherboards and notebook battery packs, a significant decline or downturn in the PC market can have a material adverse effect on our revenue and results of operations. Our revenue from the PC market accounted for approximately 47.5% and 41.3% of our total revenue for the three months ended March 31, 2019 and 2018, respectively and 46.6% and 40.9% of our total revenue for the nine months ended March 31, 2019 and 2018, respectively. In the past, we have experienced a significant global decline in the PC markets 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 negative impact on the demand for our products, 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 into other market segments, including the consumer, communications and industrial markets, and improve gross margins and profit by implementing cost control measures. While making progress in reducing 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.

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 obtain design wins. Our failure to introduce new products on a timely basis that meet customers' specifications and performance requirements, particularly those products with major OEM customers, and our inability to continue to expand our serviceable markets, could adversely affect our financial performance, including loss of market share. We believe that the JV Transaction will increase and diversify our customer base, particularly in China, in the long term. During the quarter ended March 31, 2019, the JV Company continued the production ramp at the assembly and testing facility and produced customer samples from the 12-inch wafer fabrication facility. We expect to ramp up assembly and testing, and commence small mass production from the 12-inch fab within the next two quarters. However, we may experience delays in the commencement or ramp up of the production at the JV Company. Even if we are able to ramp up the JV operation timely, we may not be successful in acquiring a sufficient number of new customers to offset the additional costs due to various factors, including but are not limited to, competition from other semiconductor companies in the region, our lack of history and prior relationships with customers as a new entrant, difficulties in executing our joint venture strategies, lack of control over our operations and the general economic conditions in Chongqing and China.

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 condensed consolidated statements of operations:

Revenue

We generate revenue primarily from the sale of power semiconductors, consisting of power discretes and power ICs. Because our products typically have three 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 inventory reserves. As the volume of sales increases, we expect cost of goods sold to increase. We implemented a process to improve our factory capacity utilization rates by transferring more wafer production to our Oregon fab and reducing our reliance on outside foundries. 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, 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.

Results of Operations

The following tables set forth statements of operations, also expressed as a percentage of revenue, for the three and nine months ended March 31, 2019 and 2018. Our historical results of operations are not necessarily indicative of the results for any future period.

	Three Months Ended March 31,					Nine Months Ended March 31,				
	2019 (in thousands)	2018 (in thousands)	2019 (% of revenue)	2018 (% of revenue)		2019 (in thousands)	2018 (in thousands)	2019 (% of revenue)	2018 (% of revenue)	
Revenue	\$109,067	\$102,902	100.0 %	100.0 %		\$339,064	\$311,656	100.0 %	100.0 %	
Cost of goods sold	83,438	75,769	76.5 %	73.6 %		251,322	228,911	74.1 %	73.4 %	
Gross profit	25,629	27,133	23.5 %	26.4 %		87,742	82,745	25.9 %	26.6 %	
Operating expenses										
Research and development	11,417	9,966	10.5 %	9.7 %		35,401	27,393	10.4 %	8.8 %	
Selling, general and administrative	17,947	16,486	16.5 %	16.0 %		58,403	46,857	17.2 %	15.0 %	
Total operating expenses	29,364	26,452	27.0 %	25.7 %		93,804	74,250	27.6 %	23.8 %	
Operating income (loss)	(3,735)	681	(3.5)%	0.7 %		(6,062)	8,495	(1.7)%	2.8 %	
Interest income and other income (loss), net	124	(234)	0.1 %	(0.2)%		460	(354)	0.1 %	(0.1)%	
Interest expense	(1,719)	(105)	(1.6)%	— %		(4,915)	(136)	(1.4)%	— %	
Net income (loss) before income taxes	(5,330)	342	(5.0)%	0.5 %		(10,517)	8,005	(3.0)%	2.7 %	
Income tax expense	625	830	0.6 %	0.8 %		1,886	32	0.6 %	— %	
Net income (loss) including noncontrolling interest	(5,955)	(488)	(5.6)%	(0.3)%		(12,403)	7,973	(3.6)%	2.7 %	
Net loss attributable to noncontrolling interest	(4,400)	(2,139)	(4.0)%	(2.1)%		(11,719)	(5,269)	(3.5)%	(1.7)%	
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	\$(1,555)	\$1,651	(1.6)%	1.8 %		\$(684)	\$13,242	(0.1)%	4.4 %	

Share-based compensation expense was allocated as follows:

	Three Months Ended March 31,				Nine Months Ended March 31,			
	2019 (in thousands)	2018 (in thousands)	2019 (% of revenue)	2018 (% of revenue)	2019 (in thousands)	2018 (in thousands)	2019 (% of revenue)	2018 (% of revenue)
Cost of goods sold	\$494	\$449	0.5 %	0.4 %	\$1,532	\$1,180	0.5 %	0.4 %
Research and development	555	361	0.5 %	0.4 %	1,929	1,340	0.6 %	0.4 %
Selling, general and administrative	2,063	1,650	1.9 %	1.6 %	7,198	5,957	2.1 %	1.9 %
Total	\$3,112	\$2,460	2.9 %	2.4 %	\$10,659	\$8,477	3.2 %	2.7 %

Three and Nine Months Ended March 31, 2019 and 2018

Revenue

The following is a summary of revenue by product type:

	Three Months Ended March 31,					Nine Months Ended March 31,				
	2019 (in thousands)	2018 (in thousands)	Change (in thousands)	Change (in percentage)		2019 (in thousands)	2018 (in thousands)	Change (in thousands)	Change (in percentage)	
Power discrete	\$89,936	\$83,982	\$5,954	7.1 %		\$275,485	\$252,754	\$22,731	9.0 %	
Power IC	17,631	15,685	1,946	12.4 %		56,430	49,540	6,890	13.9 %	
Packaging and testing services	1,500	\$3,235	(1,735)	(53.6)%		7,149	9,362	(2,213)	(23.6)%	
	\$109,067	\$102,902	\$6,165	6.0 %		\$339,064	\$311,656	\$27,408	8.8 %	

Total revenue was \$109.1 million for the three months ended March 31, 2019, an increase of \$6.2 million, or 6.0%, as compared to \$102.9 million for the same quarter last year. The increase was primarily due to an increase of \$6.0 million and \$1.9 million in sales of power discrete products and in sales of power IC products, respectively. The increase in power discrete and power IC product sales was primarily due to a 20.7% increase in average selling price as compared to the same quarter last year due to a shift in product mix, partially offset by a 10.5% decrease in unit shipments. The decrease in revenue of packaging and testing services for the three months ended March 31, 2019 as compared to the same quarter last year was primarily due to decreased demand.

Total revenue was \$339.1 million for the nine months ended March 31, 2019, an increase of \$27.4 million, or 8.8%, as compared to \$311.7 million for the same period last year. The increase was primarily due to an increase of \$22.7 million and \$6.9 million in sales of power discrete and in sales of power IC sales products, respectively. The net increase in product revenue, including power discrete and power IC product was primarily due to a 18.3% increase in average selling price as compared to the same period of last year mainly due to a shift in product mix, partially offset by a 7.1% decrease in unit shipments. The decrease in revenue of packaging and testing services for the nine months ended March 31, 2019 as compared to the same period last year was primarily due to decreased demand.

Cost of goods sold and gross profit

	Three Months Ended March 31,					Nine Months Ended March 31,				
	2019	2018	Change	(in thousands)	(in percentage)	2019	2018	Change	(in thousands)	(in percentage)
Cost of goods sold	\$83,438	\$75,769	\$7,669	10.1	%	\$251,322	\$228,911	\$22,411	9.8	%
Percentage of revenue	76.5	% 73.6	%			74.1	% 73.4	%		
Gross profit	\$25,629	\$27,133	\$(1,504)	(5.5)	%	\$87,742	\$82,745	\$4,997	6.0	%
Percentage of revenue	23.5	% 26.4	%			25.9	% 26.6	%		

Cost of goods sold was \$83.4 million for the three months ended March 31, 2019, an increase of \$7.7 million, or 10.1%, as compared to \$75.8 million for the same quarter last year. The increase was primarily due to the 6.0% increase of revenue and the production ramp up costs related to our Chongqing joint venture. Gross margin decreased by 2.9 percentage points to 23.5% for the three months ended March 31, 2019 as compared to 26.4% for the same quarter last year. The decrease in gross margin was primarily due to production ramp up costs related to our Chongqing joint venture.

Cost of goods sold was \$251.3 million for the nine months ended March 31, 2019, an increase of \$22.4 million, or 9.8%, as compared to \$228.9 million for the same period last year, primarily due to the 8.8% increase of revenue and the production ramp up costs related to our Chongqing joint venture. Gross margin decreased by 0.7 percentage points to 25.9% for the nine months ended March 31, 2019 as compared to 26.6% for the same period last year. The decrease in gross margin was primarily due to production ramp up costs related to our Chongqing joint venture, partially offset by increased average selling prices as a result of improved product mix and approximately \$1.0 million of specific reserve was released due to expired warranty period during the same period last year.

Research and development expenses

	Three Months Ended March 31,					Nine Months Ended March 31,				
	2019	2018	Change	(in thousands)	(in percentage)	2019	2018	Change	(in thousands)	(in percentage)
Research and development	\$11,417	\$9,966	\$1,451	14.6	%	\$35,401	\$27,393	\$8,008	29.2	%

Research and development expenses were \$11.4 million for the three months ended March 31, 2019, an increase of \$1.5 million, or 14.6%, as compared to \$10.0 million for the same quarter last year. The increase was primarily attributable to a \$0.2 million increase in employee compensation and benefit expense mainly due to increased headcount to ramp up our digital power business, a \$0.6 million increase in product prototyping engineering expense as a result of increased engineering activities, a \$0.1 million increase in professional services expense as a result of higher consulting fee, a \$0.2 million increase in share-based compensation expense as a result of an increase of stock awards granted, a \$0.1 million increase in facility expenses as a result of

higher office rental expenses, a \$0.1 million increase in equipment supplies as a result of higher computer software expenses, and a \$0.1 million increase in depreciation expenses in the current quarter.

Research and development expenses were \$35.4 million for the nine months ended March 31, 2019, an increase of \$8.0 million, or 29.2%, as compared to \$27.4 million for the same period last year. The increase was primarily attributable to a \$3.8 million increase in employee compensation expenses mainly due to higher bonus expenses and increased headcount to ramp up our digital power business, a \$1.6 million increase in product prototyping engineering expense as a result of increased engineering activities, a \$0.6 million increase in share-based compensation expense as a result of an increase of stock awards, a \$0.7 million increase in professional services expense as a result of higher consulting fees, a \$0.6 million increase in equipment supplies as a result of higher patent expenses and higher computer software expenses, a \$0.2 million increase in facility expenses as a result of higher office rental expenses, and \$0.3 million increase in depreciation expenses in the same period last year.

Selling, general and administrative expenses

	Three Months Ended March 31,				Nine Months Ended March 31,			
	2019	2018	Change		2019	2018	Change	
	(in thousands)		(in thousands)	(in percentage)	(in thousands)		(in thousands)	(in percentage)
Selling, general and administrative	\$17,947	\$16,486	\$1,461	8.9 %	\$58,403	\$46,857	\$11,546	24.6 %

Selling, general and administrative expenses were \$17.9 million for the three months ended March 31, 2019, an increase of \$1.5 million, or 8.9%, as compared to \$16.5 million for the same quarter last year. The increase was primarily attributable to a \$0.6 million increase in employee compensation and benefit expenses as a result of pre-production costs for the 12-inch fab facility in the JV Company, as well as increased headcount, a \$0.4 million increase in share-based compensation expense due to an increase of stock awards granted, and a \$0.5 million increase in facility expenses as a result of an increase of equipment rental costs and higher utility costs during the current quarter.

Selling, general and administrative expenses were \$58.4 million for the nine months ended March 31, 2019, an increase of \$11.5 million, or 24.6%, as compared to \$46.9 million for the same period last year. The increase was primarily attributable to a \$7.0 million increase in employee compensation and benefits expenses as a result of pre-production costs for the 12-inch fab facility in the JV Company, as well as increased headcount and higher bonus expenses, a \$1.5 million increase in facility expenses as a result of an increase of equipment rental costs and higher utility costs, a \$1.2 million increase in share-based compensation expense due to increased grant of equity awards, a \$0.7 million increase in engineering related expenses as a result of pre-production costs for the 12-inch fab facility in the JV Company, a \$0.3 million increase in employee business expenses due to increased travel expenses, \$0.3 million increase in professional services expense as a result of higher consulting fees, \$0.2 million increase in legal expenses, and \$0.5 million increase in depreciation expenses during the current period as compared to the same period last year.

Interest income and others income (loss), net

	Three Months Ended March 31,				Nine Months Ended March 31,			
	2019	2018	Change		2019	2018	Change	
	(in thousands)		(in thousands)	(in percentage)	(in thousands)		(in thousands)	(in percentage)
Interest income and other income (loss), net	\$124	\$(234)	\$358	(153.0)%	\$460	\$(354)	\$814	(229.9)%

Interest income and other income (loss), net was primarily related to interest earned from cash and cash equivalents, as well as foreign exchange gains (losses). The increase in interest income and other income (loss), net during the three and nine months ended March 31, 2019 as compared to the same period last year was primarily due to higher foreign currency exchange gains as a result of recent appreciation of USD against RMB as well as an increase in average cash balances.

Interest expense

Three Months Ended December 31,					Nine Months Ended December 31,				
2019	2018	Change			2019	2018	Change		
(in thousands)		(in thousands)	(in thousands)	percentage	(in thousands)		(in thousands)	(in thousands)	percentage
Interest expense	\$(1,719)	\$(105)	\$(1,614)	1,537.1 %	\$(4,915)	\$(136)	\$(4,779)	3,514.0	%

Interest expense was primarily related to bank borrowings. The increase in interest expenses during the three and nine months ended March 31, 2019 as compared to the same period last year was primarily due to a significant increase in bank borrowings.

Income tax expense

Three Months Ended March 31,					Nine Months Ended March 31,				
2019	2018	Change			2019	2018	Change		
(in thousands)		(in thousands)	(in thousands)	percentage	(in thousands)		(in thousands)	(in thousands)	percentage
Income tax expense	\$625	\$830	\$(205)	(24.7)%	\$1,886	\$32	\$1,854	5,793.8	%

For the three months ended March 31, 2019, the Company recognized income tax expense of approximately \$0.6 million, which included a discrete tax benefit of \$0.2 million related principally to prior year tax reserve releases. For the three months ended March 31, 2018, the Company recognized income tax expense of approximately \$0.8 million, which included a discrete tax benefit of \$0.2 million related principally to prior year tax reserve releases. Excluding the discrete income tax items, the estimated effective tax rate for the three months ended March 31, 2019 was (14.8)% compared to 291.8% for the three months ended March 31, 2018. The changes in the effective tax rate and tax expense between the periods resulted primarily from changes in the mix of earnings in various geographic jurisdictions between the current year and the same period of last year somewhat offset by the reduction in the U.S. corporate tax rate following the enactment of the 2017 U.S. Tax Cut and Jobs Act.

For the nine months ended March 31, 2019, the Company recognized an income tax expense of approximately \$1.9 million, which included a discrete tax expense of \$0.1 million. For the nine months ended March 31, 2018, we recognized income tax expense of approximately \$0.03 million, which included a discrete tax benefit of \$2.7 million related to remeasuring our U.S. deferred tax assets and liabilities following enactment of the 2017 U.S. Tax Cut and Jobs Act in December 2017 and other discrete tax benefits of \$0.2 million related principally to prior year tax reserve releases. Excluding the discrete income tax items, the estimated effective tax rate for the nine months ended March 31, 2019 was (19.2)% compared to 35.5% for the nine months ended March 31, 2018. The changes in the effective tax rate and tax expense between the periods resulted primarily from the reduction in the U.S. corporate tax rate following the enactment of the 2017 U.S. Tax Cut and Jobs Act along with changes in the mix of earnings in various geographic jurisdictions between the current year and the same period of last 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 borrowing under our term loan, financing lease and short-term borrowings.

On August 15, 2017, our Oregon subsidiary, Jireh Semiconductor Incorporated (“Jireh”), entered into a credit agreement with a financial institution (the “Bank”) that provides a term loan in an amount up to \$30.0 million for the purpose of purchasing certain equipment for our 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 the loan in the amount of \$13.2 million and \$16.7 million, respectively. 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, including certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios and fixed charge coverage ratio. We were in compliance with these covenants as of March 31, 2019. As of March 31, 2019, the outstanding balance of the term loan was \$26.1 million.

On May 1, 2018, Jireh entered into a credit agreement with the Bank that provided a term loan in an amount of \$17.8 million. The obligation under the credit agreement is secured by certain assets of Jireh and guaranteed by the Company. The loan accrues interest based on a fixed rate of 5.04% based on the outstanding balance of the loan. The credit agreement contains customary restrictive covenants and includes certain financial covenants that require us to maintain, on a consolidated basis, specified financial ratios. We were in compliance with these covenants as of March 31, 2019. As of March 31, 2019, the outstanding balance of the term loan was \$17.0 million.

In March 2016, we entered into the JV Agreement with an initial capitalization of \$330.0 million. As of March 31, 2019, the Chongqing Funds contributed a total of \$186.0 million of initial capital in cash, including \$24.0 million cash contribution in December 2018, and we contributed \$35.0 million, including \$25.0 million contribution in August 2018, in cash and certain intangible assets, as well as certain packaging equipment as required by the JV Agreement by transferring the legal titles of such equipment to the JV Company. The JV Company commenced small mass production of wafer assembly and testing during the quarter ended September 30, 2018. During the quarter ended March 31, 2019, the JV Company continued the production ramp at the assembly and testing facility and produced customer samples from the 12-inch wafer fabrication facility. We expect to ramp up assembly and testing, and commence small mass production from the 12-inch fab within the next two quarters. In addition, 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 the interest at 10% simple annual rate prior to distributing the balance of the JV Company's assets to us.

In January 2017, the JV Company entered into the EPC Contract to build the Chongqing facility. The total price payable by the JV Company under the EPC Contract is Chinese Renminbi (RMB) 540.0 million, or approximately \$78.0 million based on the currency exchange rate between RMB and U.S. Dollars on the effective date of the EPC Contract. The payment is subject to volatility as a result of exposure to fluctuations in RMB foreign currency exchange rates. As of March 31, 2019, the JV Company paid approximately \$71.5 million (RMB 480.0 million), and expect to pay the remaining of \$8.9 million (RMB 60.0 million) in the near term. We expect the JV Company will be required to obtain additional financing in order to fund the remaining portion of the acquisition of equipment necessary to commence production at the facility. However, there is no guarantee that the JV Company will be able to secure the required amount of financing from the lenders, or if such financing will be available on terms favorable to

us. If the JV Company cannot secure sufficient financing, we may use a portion of our cash reserve to further capitalize and finance the JV Company.

On May 9, 2018 (the “Effective Date”), the JV 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 Chinese Renminbi (RMB) 400.0 million, or \$62.8 million based on the currency exchange rate between RMB and U.S. Dollars on the Effective Date, of financing to the JV Company (the “Lease Financing”). The interest under the Lease Financing is accrued based on the China Base Rate multiplied by 1.15, or 5.4625% on the Effective Date. Under the Agreements, at the end of the five-year lease term, the Lenders agree to sell such equipment back to the JV Company for a nominal amount (RMB 1). The JV Company’s obligations under the Lease Financing are secured by the land and building owned by the JV Company (the “Collateral”). As of March 31, 2019, the outstanding balance of the Lease Financing was approximately \$57.8 million based on the currency exchange rate as of March 31, 2019.

On March 12, 2019, the JV Company entered into a loan agreement with The Export-Import Bank of China in the aggregate principal amount of 200 million RMB (approximately \$29.8 million based on currency exchange rate between RMB and U.S. Dollars on March 31, 2019). The loan will mature on February 28, 2020. The JV Company drew down 190 million RMB (approximately \$28.3 million based on the currency exchange rate between RMB and U.S. Dollars on March 31, 2019) in March 2019. Interest is accrued based on the China Base Rate plus 10%. The loan requires quarterly interest payments, along with the principal payments, over 72 months commencing in October 2019. The obligation under this loan agreement is secured by the buildings and certain equipment owned by the JV Company. As a condition of the loan arrangements, 14 million RMB (approximately \$2.1 million) of cash is held as restricted cash by the JV Company as a compensating balance at the JV Company's bank until the principal is paid. As of March 31, 2019, the outstanding balance of the loan was 190 million RMB (equivalent of \$28.3 million based on the currency exchange rate as of March 31, 2019).

On March 21, 2019, the JV Company entered into an one-year loan agreement with China Everbright Bank in China to provide a loan for Chinese Renminbi (RMB) 20 million, or \$3.0 million based on currency exchange rate between RMB and U.S. Dollars on March 31, 2019 at fixed interest rate of 5.44% per annum. Interest payments are due monthly with the entire principal due on March 21, 2020. As of March 31, 2019, the outstanding balance under the loan was 20 million RMB (equivalent of \$3.0 million based on the currency exchange rate as of March 31, 2019).

On November 29 and December 4, 2018, the JV Company entered into two one-year loan agreements with China Merchant Bank in China to provide loans for Chinese Renminbi (RMB) 80 million and 20 million or \$14.5 million in total based on currency exchange rate between RMB and U.S. Dollars on December 31, 2018 at varying interest rates, respectively. Interest payments are due monthly and quarterly with the entire principal due not later than December 18 and December 5, 2019, respectively. As of March 31, 2019, the outstanding balance under the loans were 80 million RMB and 20 million (equivalent of \$14.9 million in total based on the currency exchange rate as of March 31, 2019).

On November 16, 2018, the Company's subsidiary in China entered into a line of credit facility with Industrial and Commercial Bank of China, which expires in September 30, 2019. The purpose the credit facility is to provide short-term borrowings. The Company can borrow up to approximately RMB 72 million or \$10.3 million based on currency exchange rate between RMB and U.S. Dollars on November 16, 2018. As of March 31, 2019, there was no outstanding balance under the line of credit.

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. There is no guarantee that such repurchases under the Repurchase Program will enhance the value of our shares.

During the nine months ended March 31, 2019, we repurchased 111,509 shares from the open market, for a total cost of \$1.5 million, at an average price of \$13.43 per share, under the share repurchase program. We did not repurchase any shares during the three months ended March 31, 2019. Since the inception of the prior repurchase program in 2010, we repurchased an aggregate of 6,784,648 shares from the open market including shares purchased in the Tender Offer for a total cost of \$67.3 million, at an average price of \$9.92 per share, excluding fees and related expenses. As of March 31, 2019, of the 6,784,648 repurchased shares, 138,828 shares with a weighted average repurchase price of \$10.41 per share, were reissued at an average price of \$5.55 per share pursuant to option exercises

and vested restricted share units. We had \$13.4 million remained available under the Repurchase Program as of March 31, 2019.

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 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 and cash equivalents

As of March 31, 2019 and June 30, 2018, we had \$141.5 million and \$131.7 million of cash, cash equivalents and restricted cash, respectively. Our cash, cash equivalents and restricted cash primarily consist of cash on hand, restricted cash, and short-term bank deposits with original maturities of three months or less. Of the \$141.5 million and \$131.7 million cash, cash equivalents and restricted cash, \$118.8 million and \$116.1 million, respectively, are 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:

	Nine Months Ended March 31, 2019 2018 (in thousands)	
Net cash provided by operating activities	\$23,156	\$14,257
Net cash used in investing activities	(90,295)	(136,701)
Net cash provided by financing activities	77,477	129,957
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(573)	2,004
Net increase in cash, cash equivalents and restricted cash	\$9,765	\$9,517

Cash flows from operating activities

Net cash provided by operating activities of \$23.2 million for the nine months ended March 31, 2019 resulted primarily from net loss of \$12.4 million and non-cash expenses of \$35.1 million as well as net changes in assets and liabilities of \$0.5 million. The non-cash expenses of \$35.1 million primarily included a \$24.2 million of depreciation and amortization expenses, a \$10.7 million of share-based compensation expense and \$0.3 million of deferred income taxes. The net changes in assets and liabilities of \$0.5 million were primarily due to a \$5.1 million decrease in accounts receivable from timing of billings and collection of payments, a \$6.0 million increase in accounts payable due to timing of payment and \$9.7 million increase in accrued and other liabilities, partially offset by a \$17.7 million increase in inventories, a \$2.4 million increase in other current and long term assets due to increase in advance payments to vendors, and a \$0.2 million decrease in income taxes payable.

Net cash provided by operating activities of \$14.3 million for the nine months ended March 31, 2018 resulted primarily from net income of \$8.0 million and non-cash expenses of \$29.7 million, offset by net changes in assets and liabilities of \$23.4 million. The non-cash expenses of \$29.7 million included a \$21.8 million of depreciation and amortization expenses, a \$8.5 million of share-based compensation expense, and a \$(0.6) million of deferred income taxes. The net changes in assets and liabilities of \$23.4 million were primarily due to a 14.2 million increase in inventories, a \$16.3 million increase in other current and long term assets due to increase in advance payments to vendors, a \$1.7 million decrease in income taxes payable and a \$0.5 million increase in accounts receivable from timing of billings and collection of payments, partially offset by a \$6.5 million increase in accounts payable due to timing of payment, and a \$2.8 million increase in accrued and other liabilities.

Cash flows from investing activities

Net cash used in investing activities of \$90.3 million for the nine months ended March 31, 2019 was primarily attributable to \$89.9 million purchases of property and equipment, including \$58.5 million purchased by the JV Company and \$0.4 million in purchase of intangible asset.

Net cash used in investing activities of \$136.7 million for the nine months ended March 31, 2018 was primarily attributable to \$122.7 million purchases of property and equipment, including \$87.1 million purchase in the Joint Venture Company and \$14.0 million in purchases of intangible asset during the quarter.

Cash flows from financing activities

Net cash provided by financing activities of \$77.5 million for the nine months ended March 31, 2019 was primarily attributable to \$24.0 million proceeds invested by the noncontrolling interest in the JV Company, \$67.5 million proceeds from borrowings, and \$1.3 million of proceeds from exercise of stock options and ESPP, partially offset by

\$1.5 million for repurchase of our common shares under the Repurchase Program, \$2.4 million in payment of capital lease obligations, \$9.4 million in repayments of borrowings, and \$1.9 million in common shares acquired to settle withholding tax related to vesting of restricted stock units.

Net cash used in financing activities of \$130.0 million for the nine months ended March 31, 2018 was primarily attributable to \$129.0 million proceeds from investment by noncontrolling interest, \$13.2 million proceeds from borrowings, and \$2.7 million of proceeds from exercise of stock options and issuance of shares under the ESPP, partially offset by \$12.0 million for repurchase of our common shares under the repurchase program, \$0.6 million in payment of capital lease obligations, and \$2.2 million in common shares acquired to settle withholding tax related to vesting of restricted stock units.

Capital expenditures

Capital expenditures were \$89.9 million and \$122.7 million for the nine months ended March 31, 2019 and 2018, respectively. The increase in capital expenditure was primarily due to EPC construction payment in connection with the JV Transaction, additional purchase of equipment and assets and investment in R&D to improve our technology and support our new product introductions. In general, our capital expenditures primarily consist of purchases of equipment for our packaging and testing services and for our Oregon fab, purchases of equipment and construction payment in Chongqing for the JV Company, and investment in new technology as well as for upgrading our operational and financial systems. We expect that our capital expenditures will continue to increase in order to support the JV Transaction. We also expect capital expenditure continue to increase as we accelerate the development of our new digital power business.

Commitments

See Note 11 of the Notes to the Condensed Consolidated Financial Statements contained in this Quarterly Report on Form 10-Q for a description of commitments.

Off-Balance Sheet Arrangements

As of March 31, 2019, we had no material off-balance sheet arrangements as defined in Regulation S-K 303(a)(4)(ii) arrangements.

Contractual Obligations

There were no material changes outside of our ordinary course of business in our contractual obligations from those disclosed in our Annual Report on Form 10-K for the fiscal year ended June 30, 2018.

Recent Accounting Pronouncements

See Note 1 of the Notes to the Condensed Consolidated Financial Statements contained in this Quarterly Report on Form 10-Q for a description of recent accounting pronouncements, including the expected dates of adoption and estimated effects on results of operations and financial condition, which is incorporated herein by reference.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

There have been no material changes in the market risks previously disclosed in Part II, Item 7A, "Quantitative and Qualitative Disclosures About Market Risk," of our Annual Report on Form 10-K for the year ended June 30, 2018, filed with the SEC on August 23, 2018.

ITEM 4. CONTROLS AND PROCEDURES

Management's 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 March 31, 2019 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's 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.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the three months ended March 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitation on 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.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are currently not a party to any material legal proceedings. 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 1A. RISK FACTORS

Item 1A of Part I of our Annual Report on Form 10-K for the year ended June 30, 2018, filed with the SEC on August 23, 2018, contains risk factors identified by the Company. There have been no material changes to the risk factors we previously disclosed in our filings with the SEC. Our operations could also be affected by additional factors that are not presently known to us or by factors that we currently consider immaterial to our business.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

In September 2017, the Board of Directors approved a repurchase program (the “Repurchase Program”), that allows 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 and availability of our common shares and our 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. There is no guarantee that such repurchases under the Repurchase Program will enhance the value of our shares. During the three months ended March 31, 2019, we did not repurchase any shares under the Repurchase Program. As of March 31, 2019, approximately \$13.4 million remained available under the Repurchase Program.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

Not applicable.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

Not applicable.

ITEM 6. EXHIBITS

- 31.1 Certification of Chief Executive Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of Chief Financial Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32.1 Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 32.2 Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 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

SIGNATURES

Pursuant to the requirements 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.

May 3, 2019

ALPHA AND OMEGA SEMICONDUCTOR
LIMITED

By: /s/ YIFAN LIANG

Yifan Liang

Chief Financial Officer and Corporate Secretary
(Principal Financial Officer)