AMBARELLA INC
Form 10-Q
December 07, 2018

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 October 31, 2018

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: 001-35667

AMBARELLA, INC.

(Exact name of registrant as specified in its charter)

Cayman Islands	98-0459628
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
3101 Jay Street	
Santa Clara, California	95054
(Address of principal executive offices)	(Zip Code)

(408) 734-8888

(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 such files). Yes No

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

Large accelerated filer	Accelerated filer
Non-accelerated filer	Smaller reporting company

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

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

The number of ordinary shares, $0.00045 par value, of the Registrant, outstanding as of December 3, 2018 was 32,051,011 shares.

AMBARELLA, INC.

QUARTERLY REPORT ON FORM 10-Q

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PART I – FINANCIAL INFORMATION

ITEM 1. Financial Statements

AMBARELLA, INC.

CONDENSED CONSOLIDATED BALANCE SHEETS

(in thousands, except share and per share data)

(unaudited)

	October 31, 2018	January 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$212,338	$346,672
Marketable securities	136,279	87,919
Accounts receivable, net	32,417	31,294
Inventories	23,328	23,383
Restricted cash	11	9
Prepaid expenses and other current assets	3,309	4,006
Total current assets	407,682	493,283
Property and equipment, net	6,746	6,449
Deferred tax assets, non-current	3,927	3,642
Intangible assets, net	11,222	14,417
Goodwill	26,601	26,601
Other non-current assets	2,470	2,257
Total assets	$458,648	$546,649
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	11,134	19,815
Accrued and other current liabilities	25,615	32,178
Income taxes payable	755	936
Deferred revenue, current	405	307
Total current liabilities	37,909	53,236
Other long-term liabilities	9,600	11,226
Total liabilities	47,509	64,462
Commitments and contingencies (Note 14)		
Shareholders' equity:		
Preference shares, $0.00045 par value per share, 20,000,000 shares authorized and no shares issued and outstanding at October 31, 2018 and January 31, 2018, respectively	—	—
Ordinary shares, $0.00045 par value per share, 200,000,000 shares authorized at October 31, 2018 and January 31, 2018, respectively;	14	15

32,149,520 shares issued and outstanding at October 31, 2018; 33,489,614 shares issued and outstanding at January 31, 2018		
Additional paid-in capital	175,906	221,186
Accumulated other comprehensive loss	(185)	(279)
Retained earnings	235,404	261,265
Total shareholders' equity	411,139	482,187
Total liabilities and shareholders' equity	$458,648	$546,649

See accompanying notes to condensed consolidated financial statements.

AMBARELLA, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS

(in thousands, except share and per share data)

(unaudited)

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017
Revenue	$57,286	$89,062	$176,698	$224,827
Cost of revenue	22,701	32,448	69,208	82,445
Gross profit	34,585	56,614	107,490	142,382
Operating expenses:				
Research and development	31,653	29,796	95,446	83,936
Selling, general and administrative	12,354	11,700	38,098	35,406
Total operating expenses	44,007	41,496	133,544	119,342
Income (loss) from operations	(9,422)	15,118	(26,054)	23,040
Other income, net	993	319	2,517	696
Income (loss) before income taxes	(8,429)	15,437	(23,537)	23,736
Provision for income taxes	592	3,713	2,367	6,145
Net income (loss)	$(9,021)	$11,724	$(25,904)	$17,591
Net income (loss) per share attributable to ordinary shareholders:				
Basic	$(0.28)	$0.35	$(0.79)	$0.53
Diluted	$(0.28)	$0.34	$(0.79)	$0.51
Weighted-average shares used to compute net income (loss) per share attributable to ordinary shareholders:				
Basic	32,171,890	33,128,761	32,908,614	33,203,432
Diluted	32,171,890	34,358,893	32,908,614	34,538,968

See accompanying notes to condensed consolidated financial statements.

AMBARELLA, INC.

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(unaudited, in thousands)

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017
Net income (loss)	$(9,021)	$11,724	$(25,904)	$17,591
Other comprehensive income (loss), net of tax:				
Unrealized gains (losses) on investments	26	(34)	94	(46)
Other comprehensive income (loss), net of tax	26	(34)	94	(46)
Comprehensive income (loss)	$(8,995)	$11,690	$(25,810)	$17,545

See accompanying notes to condensed consolidated financial statements.

AMBARELLA, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

(unaudited, in thousands)

	Nine Months Ended October 31,	
	2018	2017
Cash flows from operating activities:		
Net income (loss)	$(25,904)	$17,591
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation of property and equipment	1,901	1,306
Amortization of intangible assets	3,454	2,018
Amortization/accretion of marketable securities	(311)	152
Stock-based compensation	44,937	42,075
Other non-cash items, net	358	93
Changes in operating assets and liabilities:		
Accounts receivable	(1,123)	(8,601)
Inventories	55	(952)
Prepaid expenses and other current assets	700	380
Deferred tax assets	(285)	(762)
Other assets	(213)	10
Accounts payable	(8,681)	6,253
Accrued liabilities	(5,192)	(2,460)
Income taxes payable	(181)	1,879
Deferred revenue	140	(2,206)
Other long-term liabilities	843	3,518
Net cash provided by operating activities	10,498	60,294
Cash flows from investing activities:		
Purchase of investments	(139,816)	(53,786)
Sales of investments	50,618	8,500
Maturities of investments	40,928	34,460
Purchase of property and equipment	(2,380)	(2,402)
Net cash used in investing activities	(50,650)	(13,228)
Cash flows from financing activities:		
Stock repurchase	(96,419)	(51,505)
Proceeds from exercise of stock options and employee stock purchase plan	4,722	4,961
Payment for intangible asset	(2,483)	(2,460)
Net cash used in financing activities	(94,180)	(49,004)
Net decrease in cash, cash equivalents and restricted cash	(134,332)	(1,938)
Cash, cash equivalents and restricted cash at beginning of period	346,681	322,880
Cash, cash equivalents and restricted cash at end of period	$212,349	$320,942
Supplemental disclosure of cash flow information:		
Cash paid for income taxes	$1,263	$762
Supplemental disclosure of noncash investing and financing activities:		
Unpaid liabilities related to intangible and fixed assets additions	$299	$10,731

See accompanying notes to condensed consolidated financial statements.

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AMBARELLA, INC.

Notes to Condensed Consolidated Financial Statements

(Unaudited)

1. Organization and Summary of Significant Accounting Policies

Organization

Ambarella, Inc. (the "Company") was incorporated in the Cayman Islands on January 15, 2004. The Company is a leading developer of low-power, high-definition (HD) and Ultra HD video compression and image processing solutions, and computer vision solutions. The Company combines its processor design capabilities with its expertise in video and image processing, algorithms and software to provide a technology platform that is designed to be easily scalable across multiple applications and enable rapid and efficient product development. The Company's system-on-a-chip, or SoC, designs fully integrated high-definition video processing, image processing, analysis, audio processing and system functions onto a single chip, delivering exceptional video and image quality, differentiated functionality and low power consumption. Currently the Company is combining advanced computer vision technology with its state-of-the-art video to enable the next generation of intelligent cameras, advanced driver assistance systems (ADAS) and autonomous vehicles.

The Company sells its solutions to leading original design manufacturers, or ODMs, and original equipment manufacturers, or OEMs, globally.

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared by the Company in accordance with the instructions to Form 10-Q pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC") and, therefore, do not include all information and notes normally provided in audited financial statements. The accounting policies are described in the "Notes to Consolidated Financial Statements" in the Annual Report on Form 10-K for the 2018 fiscal year filed with the SEC on March 30, 2018 (the "Form 10-K") and updated, as necessary, in this Form 10-Q. The year-end condensed consolidated balance sheet data presented for comparative purposes was derived from audited financial statements, but does not include all disclosures required by generally accepted accounting principles in the United States ("U.S. GAAP"). In the opinion of management, all adjustments (consisting of normal recurring accruals and adjustments) considered necessary for a fair statement have been included. The results of operations for any interim period are not necessarily indicative of, nor comparable to, the results of operations for any other interim period or for a full fiscal year. These unaudited condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and related notes contained in the Form 10-K.

Basis of Consolidation

The Company's fiscal year ends on January 31. The condensed consolidated financial statements of the Company and its subsidiaries have been prepared in conformity with U.S. GAAP. All intercompany transactions and balances have been eliminated upon consolidation.

Use of Estimates

The preparation of condensed consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expense during the reported periods. Actual results could differ from those estimates.

On an ongoing basis, management evaluates its estimates and assumptions, including those related to (i) the collectability of accounts receivable; (ii) write down of excess and obsolete inventories; (iii) intangible assets and goodwill; (iv) the estimated useful lives of long-lived assets; (v) impairment of long-lived assets and financial instruments; (vi) warranty obligations; (vii) the valuation of stock-based compensation awards and financial instruments; (viii) the probability of performance objectives achievement; (ix) the realization of tax assets and estimates of tax liabilities, including reserves for uncertain tax positions; and (x) the recognition and disclosure of contingent liabilities. These estimates and assumptions are based on historical experience and on various other factors which the Company believes to be reasonable under the circumstances. The Company may engage third-party valuation specialists to assist with estimates related to the valuation of financial instruments, assets and stock awards associated with various contractual arrangements. Such estimates often require the selection of appropriate valuation methodologies and significant judgment. Actual results could differ from these estimates under different assumptions or circumstances and such differences could be material.

Concentration of Risk

The Company's products are manufactured, assembled and tested by third-party contractors located primarily in Asia. The Company does not have long-term agreements with these contractors. A significant disruption in the operations of one or more of these contractors would impact the production of the Company's products which could have a material adverse effect on its business, financial condition and results of operations.

A substantial portion of the Company's revenue is derived from sales through its distributors, Wintech Microelectronics Co., Ltd., or Wintech, which serves as its non-exclusive sales representative in Asia other than Japan, and directly to one ODM customer, Chicony Electronics Co., Ltd., or Chicony. Termination of the relationships with these customers could result in a temporary or permanent loss of revenue. Furthermore, any credit issues from these customers could impair their abilities to make timely payment to the Company. See Note 15 for additional information regarding revenue and credit concentration with these customers.

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents, marketable securities and accounts receivable. The Company maintains its cash primarily in checking accounts with reputable financial institutions. Cash deposits held with these financial institutions may exceed the amount of insurance provided on such deposits. The Company has not experienced any losses on deposits of its cash. In order to limit the exposure of each investment, the cash equivalents and marketable securities consist primarily of money market funds, certificates of deposit, asset-backed securities, commercial paper, U.S. government securities and debt securities of corporations which management assesses to be highly liquid. The Company does not hold or issue financial instruments for trading purposes.

The Company performs ongoing credit evaluations of its customers and adjusts credit limits based upon payment history and customers' credit worthiness. The Company regularly monitors collections and payments from its customers.

Cash Equivalents and Marketable Securities

The Company considers all highly liquid investments with original maturities of less than three months at the time of purchase to be cash equivalents. Investments that are highly liquid with original maturities at the time of purchase greater than three months are considered marketable securities.

The Company classifies these investments as "available-for-sale" securities carried at fair value, based on quoted market prices of similar assets, with the unrealized gains or losses reported, net of tax, as a separate component of shareholders' equity and included in accumulated other comprehensive loss in the condensed consolidated balance sheets. The amortization of premiums and accretion of discounts and the realized gains and losses are both recorded in other income, net, in the condensed consolidated statements of operations. The Company reviews its investments for possible other-than-temporary impairments on a regular basis. If any loss on investment is believed to be other-than-temporary, a charge will be recorded and a new cost basis in the investment will be established. In evaluating whether a loss on a security is other-than-temporary, the Company considers the following factors: (i) general market conditions, (ii) the duration and extent to which the fair value is less than cost and (iii) the Company's intent and ability to hold the investment.

For securities in an unrealized loss position which is deemed to be other-than-temporary, the difference between the security's then-current amortized cost basis and fair value is separated into (i) the amount of the impairment related to the credit loss (i.e., the credit loss component) and (ii) the amount of the impairment related to all other factors (i.e., the non-credit loss component). The credit loss component is recognized in earnings. The non-credit loss component is recognized in accumulated other comprehensive loss. Due to the relative short term nature of the investments, there have been no other-than-temporary impairments recorded to date.

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Restricted Cash

Amounts included in restricted cash represent those required to be set aside to secure certain transactions in a foreign entity. As of October 31, 2018 and January 31, 2018, the restricted cash was immaterial. The following table presents cash, cash equivalents and restricted cash reported on the condensed consolidated balance sheets and the sums are presented on the condensed consolidated statements of cash flows:

	As of October 31, 2018	January 31, 2018	October 31, 2017	January 31, 2017
	(in thousands)			
Cash and cash equivalents	$212,338	$346,672	$320,933	$322,872
Restricted cash	11	9	9	8
Total as presented in the consolidated statements of cash flows	$212,349	$346,681	$320,942	$322,880

Inventories

The Company records inventories at the lower of cost or net realizable value. The cost includes materials and other production costs and is computed using standard cost on a first-in, first-out basis. Inventory reserves are recorded for estimated obsolescence or unmarketable inventories based on forecast of future demand and market conditions. Any adjustments to reduce the cost of inventories to their net realizable value are recognized in earnings in the current period. Once inventory is written down, a new accounting cost basis is established and, accordingly, any associated reserve is not released until the inventory is sold or scrapped. There were no material inventory losses recognized for the three and nine months ended October 31, 2018 and 2017, respectively.

Noncancelable Internal-Use Software License

The Company accounts for a noncancelable on premise internal-use software license as the acquisition of an intangible asset and the incurrence of a liability to the extent that all or a portion of the software licensing fees are not paid on or before the license acquisition date. The intangible asset and related liability are recorded at net present value and interest expense is recorded over the payment term.

Goodwill and In-Process Research and Development

Goodwill and in-process research and development (“IPR&D”) are required to be tested for impairment at least annually in the fourth fiscal quarter or sooner whenever events or changes in circumstances indicate that the assets may be impaired. The Company has a single reporting unit for goodwill impairment test purposes based on its business and reporting structure.

The Company does not amortize goodwill. Acquired IPR&D is capitalized at fair value as an intangible asset and amortization commences upon completion of the underlying projects. When a project underlying reported IPR&D is completed, the corresponding amount of IPR&D is reclassified as an amortizable purchased intangible asset and is amortized over its estimated useful life. As of October 31, 2018, there was no IPR&D amortized.

Revenue Recognition

Effective February 1, 2018, the Company adopted Accounting Standards Codification ("ASC") Topic 606, Revenue from Contracts with Customers ("ASC 606"), using the modified retrospective method applied to those contracts that were not completed as of February 1, 2018. Results for reporting periods beginning after February 1, 2018 are presented under ASC 606. Prior period amounts are not adjusted and continue to be reported in accordance with the Company's historic accounting under ASC Topic 605, Revenue Recognition ("ASC 605"). The most significant impacts of this new guidance for the Company relate to the determination of transaction price and the timing of revenue recognition for transactions with its distributors. As a result, the Company now recognizes product revenue upon shipment and transfer of control to distributors (known as "sell-in" revenue recognition) rather than shipment to the end customers (known as "sell-through" revenue recognition) based on its estimate of the consideration it expects to receive. Revenue recognition is evaluated through the following five steps: (i) identification of the contract, or contracts, with a customer; (ii) identification of the performance obligations in the contract; (iii) determination of the transaction price; (iv) allocation of the transaction price to the performance obligations in the contract; and (v) recognition of revenue when or as a performance obligation is satisfied.

The sale of semiconductor products accounts for the substantial majority of the Company's consolidated revenue. Sales agreements with customers are renewable periodically and contain terms and conditions with respect to payment, delivery, warranty, supply and other rights. The Company considers an accepted customer purchase order, governed by sales agreement, to be the contract with the customer. For each contract, the Company considers the promise to transfer tangible products to be the identified performance obligation. Product sales contracts may include volume-based tiered pricing or rebates that are fulfilled in cash or product. In determining the transaction price, the Company accounts for the right of returns, cash rebates, commissions and other pricing adjustments as variable consideration and estimates these amounts based on the expected amount to be provided to customers and reduces the revenue recognized. The Company estimates sales returns and rebates based on the Company's historical patterns of return and pricing credits. As the Company's standard payment terms are 30 days to 60 days, the contracts have no financing component. Under ASC 606, the Company estimates the total consideration to be received by using the expected value method for each contract, computes weighted average selling price for each unit shipped in cases where there is a material right due to the presence of volume-based tiered pricing, allocates the total consideration between the identified performance obligations, and recognizes revenue when control of its goods and services is transferred to its customers. The Company considers product control to be transferred at shipment or delivery because the Company has a present right to payment at that time, the customer has legal title to the asset, the Company has transferred physical possession of the asset, and the customer has significant risk and rewards of ownership of the asset.

The Company also enters into fixed-price engineering service agreements with certain customers. These agreements may include multiple performance obligations, such as software development services, licensing of intellectual property and post-contract customer support, or PCS. These multiple performance obligations are highly interdependent, highly interrelated, are typically not sold separately and do not have standalone selling prices. They are all inputs to generate one combined output which is incorporating the Company's SoC into the customer's product. Accordingly, the Company determines that they are not separately identifiable and shall be treated as a single performance obligation. Customers usually pay based on milestones achieved. Because payments received do not correspond directly with the value of the Company's performance to date, for fixed-price engineering services arrangements, revenue is recognized using the time-based straight line method, which best depicts the Company's performance toward complete satisfaction of the performance obligation based on the nature of such professional services. Revenues from engineering service agreements were not material for the three and nine months ended October 31, 2018 and 2017, respectively.

Cost of Revenue

Cost of revenue includes cost of materials, cost associated with packaging and assembly, testing and shipping, cost of personnel, stock-based compensation, logistics and quality assurance, warranty cost, royalty expense, write-downs of inventories and allocation of overhead.

Income Taxes

The Company records income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in its financial statements or tax returns. In estimating future tax consequences, generally all expected future events other than enactments or changes in the tax law or rates are considered. Valuation allowances are provided when necessary to reduce deferred tax assets to the amount expected to be realized.

The Company applies authoritative guidance for the accounting for uncertainty in income taxes. The guidance requires that tax effects of a position be recognized only if it is "more likely than not" to be sustained based solely on its technical merits as of the reporting date. Upon estimating its tax positions and tax benefits, the Company considers and evaluates numerous factors, which may require periodic adjustments and which may not reflect the final tax liabilities. The Company adjusts its financial statements to reflect only those tax positions that are more likely than not

to be sustained under examination.

As part of the process of preparing condensed consolidated financial statements, the Company is required to estimate its taxes in each of the jurisdictions in which it operates. The Company estimates actual current tax exposure together with assessing temporary differences resulting from differing treatment of items, such as accruals and allowances not currently deductible for tax purposes. These differences result in deferred tax assets, which are included in the condensed consolidated balance sheets. In general, deferred tax assets represent future tax benefits to be received when certain expenses previously recognized in the condensed consolidated statements of operations become deductible expenses under applicable income tax laws, or loss or credit carryforwards are utilized.

In assessing whether deferred tax assets may be realized, the Company considers whether it is more likely than not that some portion or all of deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income.

The Company makes estimates and judgments about its future taxable income based on assumptions that are consistent with its plans and estimates. Should the actual amounts differ from estimates, the amount of valuation allowance could be materially impacted. Any adjustment to the deferred tax asset valuation allowance would be recorded in the condensed consolidated income statement for the periods in which the adjustment is determined to be required.

Net Income (Loss) Per Ordinary Share

Basic earnings (losses) per share is computed by dividing net income (loss) available to ordinary shareholders by the weighted-average number of ordinary shares outstanding during the period. Diluted earnings (losses) per share is computed by dividing net income (loss) available to ordinary shareholders by the weighted-average number of ordinary shares outstanding during the period increased to include the number of additional ordinary shares that would have been outstanding if the potentially dilutive securities had been issued. Potentially dilutive securities include outstanding stock options, shares to be purchased under the Company's employee stock purchase plan, unvested restricted stock and restricted stock units. The dilutive effect of potentially dilutive securities is reflected in diluted earnings (losses) per share by application of the treasury stock method.

Comprehensive Income (Loss)

Comprehensive income (loss) includes unrealized gains or losses from available-for-sale securities that are excluded from net income (loss).

Recent Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU 2016-02, Leases (Topic 842). In July 2018, the FASB issued ASU 2018-11, Leases (Topic 842): Targeted Improvement. Under these standards, the Company is required to adopt the lease standard on February 1, 2019 and expects to use the modified retrospective approach with a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. Upon adoption date, the Company will recognize right-of-use assets and corresponding liabilities related to substantially all of its operating lease arrangements. The Company is in the process of data gathering, determining the scope of impact, designing system solution and assessing available practical expedients and policy elections offered by the standard. The Company is also evaluating its processes and internal controls to meet the new standard's requirements. Although the Company has not completed the assessment, it does not expect that the adoption of this new guidance will have a material impact to the Company's consolidated statements of operations and cash flows.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments – Credit Losses (Topic 326), to introduce a new impairment model for recognizing credit losses on financial instruments based on an estimate of current expected credit losses ("ECL"). Under the new model, an entity is required to estimate ECL on available-for-sale (AFS) debt securities only when the fair value is below the amortized cost of the asset and is no longer based on an impairment being "other-than-temporary". The new model also requires the impairment calculation on an individual security level and requires an entity use present value of cash flows when estimating the ECL. The credit-related losses are required to be recognized through earnings and non-credit related losses are reported in other comprehensive income. The ASU will be effective for public entities in fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. The new guidance will require modified retrospective application to all outstanding instruments, with a cumulative effect adjustment recorded to opening retained earnings as of the beginning of the first period in which the guidance becomes effective. The Company does not believe the adoption of this new guidance will have a material impact on its consolidated financial statements.

In January 2017, the FASB issued ASU 2017-04, Intangibles – Goodwill and Other (Topic 350): Simplifying the Test of Goodwill Impairment, to eliminate the requirement to calculate the implied fair value of goodwill to measure a goodwill impairment charge. Instead, entities will record an impairment charge based on the excess of a reporting

unit’s carrying amount over its fair value. This new guidance will be applied prospectively and is effective for annual and interim periods beginning after December 15, 2019. The Company does not believe the adoption of this new guidance will have a material impact on its financial position, results of operations and disclosures.

In March 2017, the FASB issued ASU 2017-08, Receivables – Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization On Purchased Callable Debt Securities, to shorten the amortization period for the premium to the earliest call date instead of the contractual life of the instrument. This new guidance will be effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. Entities will be required to apply the new guidance using the modified retrospective method with a cumulative-effect adjustment to retained earnings upon the adoption date. The Company does not believe the adoption of this new guidance will have a material impact on its financial position, results of operations and disclosures.

In February 2018, the FASB issued ASU 2018-02, Income Statement – Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, to permit entities to have the option to reclassify tax effects stranded in accumulated other comprehensive income as a result of tax reform to retained earnings. The FASB also gives entities the option to apply the guidance retrospectively or in the period of adoption. The guidance is effective for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years. Early adoption in any period is permitted. The Company has not early adopted this guidance and believes that the adoption of this new guidance will not have an impact on its financial position and disclosures.

In June 2018, the FASB issued ASU 2018-07, Compensation – Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting, to align the measurement and classification guidance for share-based payments to nonemployees with the guidance for share-based payments to employees, with certain exceptions. This new guidance is effective for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years. Early adoption is permitted, including in an interim period, but not before an entity adopts the new revenue guidance. The Company has early adopted this new guidance which did not have significant impact on its financial position, results of operations and disclosures.

In August 2018, the FASB issued 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement. Under this new guidance, the entities will no longer be required to disclose the amount of and the reasons for transfers between Level 1 and Level 2 of the fair value hierarchy, but will be required to disclose the range and weighted average used to develop significant unobservable inputs for Level 3 fair value measurements. The guidance is effective for fiscal years beginning after December 15, 2019 and for the interim periods within those fiscal years. Early adoption is permitted. The Company does not believe the adoption of this new guidance will have a material impact on its financial position, results of operations and disclosures.

In August 2018, the FASB issued 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. Under this new guidance, the entities are required to capitalize implementation costs related to a hosting arrangement that is a service contract and amortize the costs over the term of the hosting arrangement, beginning when the module or component of the hosting arrangement is ready for its intended use. The guidance is effective for fiscal years beginning after December 15, 2019 and for the interim periods within those fiscal years. Early adoption is permitted. The Company does not believe the adoption of this new guidance will have a material impact on its financial position, results of operations and disclosures.

2. Revenue Recognition

Effective February 1, 2018, the Company adopted ASC 606 using the modified retrospective method applied to those contracts which were not completed as of February 1, 2018. Results for reporting periods beginning after February 1, 2018 are presented under ASC 606. Prior period amounts are not adjusted and continue to be reported in accordance with the Company’s historic accounting under ASC 605. The Company recognizes revenue when control of its goods and services is transferred to its customers. The Company considers product control to be transferred at a point in time upon shipment or delivery because the Company has a present right to payment at that time, the customer has legal title to the asset, the Company has transferred physical possession of the asset, and the customer has significant risk and rewards of ownership of the asset. The majority of the Company’s product revenue is derived from sales through its distributors. As a result, sales of products are recognized upon shipment and transfer of control to distributors (known as “sell-in” revenue recognition) rather than shipment to the end customers (known as “sell-through” revenue recognition).

The cumulative effects of adjustments on the condensed consolidated balance sheet on February 1, 2018 upon the adoption of ASC 606 were as follows:

	Balance as of January 31, 2018	Adjustment	Opening Balance as of February 1, 2018
	(in thousands)		
Deferred revenue, current	$307	$ (43)	$264
Retained earnings	$261,265	$ 43	$261,308

The following table summarizes the impacts of adopting the new revenue standard on our condensed consolidated balance sheets, statements of operations and statements of cash flows as of and for the three and nine months ended October 31, 2018:

	October 31, 2018		
	As Reported	Impact of Adoption	Amounts under ASC 605
	(in thousands)		
Condensed Consolidated Balance Sheets			
Liabilities:			
Accounts payable	11,134	(142)	10,992
Accrued and other current liabilities	25,615	(46)	25,569
Income taxes payable	755	194	949
Deferred revenue, current	405	5,276	5,681
Other long-term liabilities	9,600	1	9,601
Equity:			
Retained earnings	$235,404	(5,283)	$230,121

	Three Months Ended October 31, 2018		
	As Reported	Impact of Adoption	Amounts under ASC 605
	(in thousands, except per share data)		
Condensed Consolidated Statements of Operations			
Revenue	$57,286	$ 727	$58,013
Cost of revenue	22,701	234	22,935
Gross profit	34,585	493	35,078
Loss from operations	(9,422)	493	(8,929)
Loss before income taxes	(8,429)	493	(7,936)
Provision for income taxes	592	(71)	521
Net loss	$(9,021)	$ 564	$(8,457)
Net loss per share:			
Basic	$(0.28)	$ 0.02	$(0.26)
Diluted	$(0.28)	$ 0.02	$(0.26)

	Nine Months Ended October 31, 2018		
	As Reported	Impact of Adoption	Amounts under ASC 605
	(in thousands, except per share data)		
Condensed Consolidated Statements of Operations			
Revenue	$176,698	$ (7,583)	$169,115
Cost of revenue	69,208	(2,537)	66,671
Gross profit	107,490	(5,046)	102,444
Loss from operations	(26,054)	(5,046)	(31,100)

Loss before income taxes	(23,537)	(5,046)	(28,583)
Provision for income taxes	2,367	194	2,561
Net loss	$(25,904)	$(5,240)	$(31,144)
Net loss per share:			
Basic	$(0.79)	$(0.16)	$(0.95)
Diluted	$(0.79)	$(0.16)	$(0.95)

The impact of adoption on the comprehensive loss is the same as the impact on net loss.

	Nine Months Ended October 31, 2018		
	As Reported	Impact of Adoption	Amounts under ASC 605
	(in thousands)		
Condensed Consolidated Statements of Cash Flows			
Cash flow from operating activities:			
Net loss	$(25,904)	$ (5,240)	$(31,144)
Accounts payable	(8,681)	(142)	(8,823)
Accrued liabilities	(5,192)	(46)	(5,238)
Income taxes payable	(181)	194	13
Deferred revenue	140	5,233	5,373
Other long-term liabilities	$843	$ 1	$844

The impacts of adoption of the new revenue standard were primarily attributable to distributor revenues recognized using the sell-through method under ASC 605, while such revenues are recognized using the sell-in method under ASC 606.

Practical Expedients

- The Company elects not to disclose the value of unsatisfied or partially unsatisfied performance obligations due to original expected contract duration of one year or less.
- For contracts that were modified before the adoption date, the Company elects to reflect the aggregate effect of all modifications that occur before the adoption date when identifying performance obligations, determining the transaction price, and allocating the transaction price to performance obligations.
- The Company also elects to exclude amounts collected from customers for all sales taxes from the transaction price.

Contract Assets

Timing of revenue recognition may differ from the timing of invoicing to the Company's customers. The Company records contract assets when revenue is recognized prior to invoicing. The contract assets are primarily related to the Company’s engineering service agreements and rights to consideration for performance obligations delivered but not billed at the reporting date. The contract assets are reclassified to receivables when the billing occurs. As of February 1, 2018, the contract assets were not material. All of the contract assets were either reclassified to receivables or recognized as cash receipts as of October 31, 2018.

Contract Liabilities (Deferred Revenues)

Contract liabilities are primarily related to the portion of transaction price that exceeds the weighted average selling price for products sold to date under tiered-pricing contracts which contain material rights. These contract liabilities are expected to be recognized over the course of the contract when products are delivered for future pricing below the weighted average selling price of the contract. The timing of recognition of these contract liabilities is dependent on the timing and size of future orders under the contract. For the three and nine months ended October 31, 2018, the Company did not recognize any material revenue adjustment related to performance obligations satisfied in prior periods released from these contract liabilities.

Contract liabilities are also recorded when cash payments are received in advance of performance for engineering service agreements. The contract liabilities related to these agreements are expected to be recognized when the performance is delivered. For the three and nine months ended October 31, 2018, the Company did not recognize any material revenue released from these contract liabilities as a result of performance obligations satisfied in the current period.

As of October 31, 2018 and February 1, 2018, the contract liabilities were not material. Additionally, the transaction price allocated to unsatisfied, or partially unsatisfied, purchase orders for contracts that are greater than a year was not material as of October 31, 2018 and February 1, 2018.

3. Financial Instruments and Fair Value

The Company invests a portion of its cash in debt securities that are denominated in United States dollars. During the three months ended October 31, 2018, the Company invested an additional $100.0 million in debt securities. The investment portfolio consists of money market funds, certificates of deposit, asset-backed securities, commercial paper, U.S. government securities, and debt securities of corporations. All of the investments are classified as available-for-sale securities and reported at fair value in the condensed consolidated balance sheets as follows:

	As of October 31, 2018			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Money market funds	$9,472	$ —	$ —	$9,472
Certificates of Deposit	6,004	—	—	6,004
Commercial paper	87,756	—	—	87,756
Corporate bonds	70,169	1	(175)	69,995
Asset-backed securities	9,547	—	(9)	9,538
U.S. government securities	20,681	—	(2)	20,679
Total cash equivalents and marketable securities	$203,629	$ 1	$ (186)	$203,444

	As of January 31, 2018			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Money market funds	$13,788	$ —	$ —	$13,788
Commercial paper	5,480	—	—	5,480
Corporate bonds	53,175	—	(196)	52,979
Asset-backed securities	11,048	—	(44)	11,004
U.S. government securities	18,495	—	(39)	18,456
Total cash equivalents and marketable securities	$101,986	$ —	$ (279)	$101,707

	As of October 31, 2018	January 31, 2018
	(in thousands)	
Included in cash equivalents	$67,165	$ 13,788
Included in marketable securities	136,279	87,919
Total cash equivalents and marketable securities	$203,444	$ 101,707

The contractual maturities of the investments at October 31, 2018 and January 31, 2018 were as follows:

	As of October 31, 2018	January 31, 2018
	(in thousands)	
Due within one year	$171,284	$ 63,476
Due within one to three years	32,160	38,231

Total cash equivalents and marketable securities	$203,444	$ 101,707

The unrealized losses on the available-for-sale securities were caused by fluctuations in market value and interest rates as a result of the economic environment. As the decline in market value was attributable to changes in market conditions and not credit quality, and because the Company neither intended to sell nor was it more likely than not that it will be required to sell these investments prior to a recovery of par value, the Company did not consider these investments to be other-than temporarily impaired as of October 31, 2018 and January 31, 2018, respectively.

The following fair value hierarchy is applied for disclosure of the inputs used to measure fair value. This hierarchy prioritizes the inputs into three broad levels as follows:

Level 1—Inputs are unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2—Inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the assets or liabilities, either directly or indirectly through market corroboration, for substantially the full term of the financial instruments.

Level 3—Unobservable inputs based on the Company's own assumptions used to measure assets and liabilities at fair value. The inputs require significant management judgment or estimation.

The Company measures the fair value of money market funds and certificates of deposit using quoted prices in active markets for identical assets and classifies them within Level 1. The fair value of the Company's investments in other debt securities are obtained based on quoted prices for similar assets in active markets and are classified within Level 2.

The following table presents the fair value of the financial instruments measured on a recurring basis as of October 31, 2018 and January 31, 2018:

	As of October 31, 2018			
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Money market funds	$9,472	$9,472	$—	$ —
Certificates of Deposit	6,004	6,004		
Commercial paper	87,756	—	87,756	—
Corporate bonds	69,995	—	69,995	—
Asset-backed securities	9,538	—	9,538	—
U.S. government securities	20,679	—	20,679	—
Total cash equivalents and marketable securities	$203,444	$15,476	$187,968	$ —

	As of January 31, 2018			
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Money market funds	$13,788	$13,788	$—	$ —
Commercial paper	5,480	—	5,480	—
Corporate bonds	52,979	—	52,979	—
Asset-backed securities	11,004	—	11,004	—
U.S. government securities	18,456	—	18,456	—
Total cash equivalents and marketable securities	$101,707	$13,788	$87,919	$ —

4. Inventories

Inventories at October 31, 2018 and January 31, 2018 consisted of the following:

	As of October 31, 2018	January 31, 2018
	(in thousands)	
Work-in-progress	$12,483	$ 12,073

Finished goods	10,845	11,310
Total	$23,328	$ 23,383

5. Property and Equipment, Net

Depreciation expense was approximately $0.6 million and $0.4 million for the three months ended October 31, 2018 and 2017, respectively. Depreciation expense was approximately $1.9 million and $1.3 million for the nine months ended October 31, 2018 and 2017, respectively. Property and equipment at October 31, 2018 and January 31, 2018 consisted of the following:

	As of October 31, 2018	January 31, 2018
	(in thousands)	
Computer equipment and software	$8,752	$ 8,611
Machinery and equipment	5,322	4,761
Furniture and fixtures	971	917
Leasehold improvements	2,303	2,092
Construction in progress	491	—
	17,839	16,381
Less: accumulated depreciation and amortization	(11,093)	(9,932)
Total property and equipment, net	$6,746	$ 6,449

6. Intangible Assets

Intangible assets primarily consist of $4.1 million of IPR&D from the acquisition of VisLab S.r.l., or VisLab, in June 2015 and $7.1 million of noncancelable software licenses, net of amortization expense. Acquired IPR&D is capitalized at fair value and the amortization commences upon completion of the underlying projects. When a project underlying reported IPR&D is completed, the corresponding amount of IPR&D is reclassified as an amortizable purchased intangible asset and is amortized over its estimated useful life. As of October 31, 2018, there was no IPR&D amortized. The Company will determine the project incorporating the VisLab IPR&D to be completed when a related chip begins mass production to address the level 3 and above advanced driving assistance systems markets.

The Company enters into certain internal-use noncancelable software license agreements with third parties from time-to-time. The licenses have been capitalized as intangible assets, and the corresponding future payments have been recorded as liabilities at net present value. As of October 31, 2018, $4.5 million was recorded in accrued and other current liabilities and $2.0 million was recorded in other long-term liabilities in the condensed consolidated balance sheets.

The carrying amounts of intangible assets as of October 31, 2018 and January 31, 2018 were as follows:

	As of October 31, 2018			As of January 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	(in thousands)					
In-process research and development	$4,100	$ —	$4,100	$4,100	$ —	$4,100

Internal-use software licenses	13,663	(6,541)	7,122	13,404	(3,087)	10,317
Total acquired intangible assets	$17,763	$ (6,541)	$11,222	$17,504	$ (3,087)	$14,417

The amortization expense related to these software licenses was approximately $1.2 million and $0.9 million for the three months ended October 31, 2018 and 2017, respectively. The amortization expense for the nine months ended October 31, 2018 and 2017 was approximately $3.5 million and $2.0 million, respectively. The estimated future amortization expense of these software licenses as of October 31, 2018 is as follows:

Fiscal Year	As of October 31, 2018 (in thousands)
2019	$ 1,151
2020	4,599
2021	1,372
2022	—
2023	—
Thereafter	—
Total future amortization expenses:	$ 7,122

There were no intangible asset impairments for the three and nine months ended October 31, 2018 and 2017, respectively.

7. Goodwill

On June 25, 2015, the Company completed the acquisition of VisLab, a privately-held Italian company that develops computer vision and intelligent control systems for automotive and other commercial applications, including advanced driver assistance systems and several generations of autonomous vehicle driving systems, for $30.0 million in cash. As a result, there was $25.3 million attributed to goodwill, $4.1 million attributed to intangible assets and $0.6 million attributed to net assets acquired. A deferred tax liability of $1.3 million related to the intangible assets was recorded to account for the difference between financial reporting and tax basis at the acquisition date, with an addition to goodwill. The Company does not amortize goodwill. There were no goodwill impairments for the three and nine months ended October 31, 2018 and 2017, respectively.

8. Accrued and Other Current Liabilities

Accrued and other current liabilities at October 31, 2018 and January 31, 2018 consisted of the following:

	As of October 31, 2018	January 31, 2018
	(in thousands)	
Accrued employee compensation	$11,705	$ 15,977
Accrued warranty	—	1,750
Accrued rebates	371	584
Accrued product development costs	6,668	6,669
Software license liabilities, current	4,536	4,346
Other accrued liabilities	2,335	2,852
Total accrued and other current liabilities	$25,615	$ 32,178

The warranty liabilities were paid off during the first quarter of the current fiscal year.

9. Other Long-Term Liabilities

Other long-term liabilities at October 31, 2018 and January 31, 2018 consisted of the following:

	As of

	October 31, 2018	January 31, 2018
	(in thousands)	
Unrecognized tax benefits, including interest	$6,271	$ 5,352
Deferred tax liabilities, non-current	1,293	1,293
Software license liabilities, non-current	2,015	4,484
Other long-term liabilities	21	97
Total other long-term liabilities	$9,600	$ 11,226

10. Capital Stock

Preference shares

After completion of the Company's initial public offering in 2012, a total of 20,000,000 preference shares, with a $0.00045 par value per share, were authorized. There were no preference shares issued and outstanding as of October 31, 2018 and January 31, 2018, respectively.

Ordinary shares

As of October 31, 2018 and January 31, 2018, a total of 200,000,000 ordinary shares were authorized.

On March 30, 2018, the Company added 1,507,032 ordinary shares to the ordinary shares reserved for issuance, pursuant to an “evergreen” provision contained in the 2012 Equity Incentive Plan, or EIP. Pursuant to such provision, on February 1st of each fiscal year, the number of ordinary shares reserved for issuance under the EIP is automatically increased by a number equal to the lesser of (i) 3,500,000 ordinary shares, (ii) four and one half percent (4.5%) of the aggregate number of ordinary shares outstanding on January 31st of the preceding fiscal year, or (iii) a lesser number of shares that may be determined by the Company’s Board of Directors.

On March 30, 2018, the Company added 418,620 ordinary shares to the ordinary shares reserved for issuance, pursuant to an “evergreen” provision contained in the Amended and Restated 2012 Employee Stock Purchase Plan, or ESPP. Pursuant to such provision, on February 1st of each fiscal year, the number of ordinary shares reserved for issuance under the ESPP is automatically increased by a number equal to the lesser of (i) 1,500,000 ordinary shares, (ii) one and one quarter percent (1.25%) of the aggregate number of ordinary shares outstanding on such date, or (iii) an amount determined by the Company’s Board of Directors or a duly authorized committee of the Board of Directors.

As of October 31, 2018 and January 31, 2018, the following ordinary shares were reserved for future issuance under the EIP and ESPP:

	As of October 31, 2018	January 31, 2018
Shares reserved for options, restricted stock and restricted stock units under EIP	6,173,834	5,561,653
Shares reserved for ESPP	1,833,574	1,561,841

Shares repurchased

On June 4, 2018, the Company’s Board of Directors authorized the repurchase of up to an additional $100.0 million of the Company’s ordinary shares over a twelve-month period commencing June 5, 2018. Repurchases may be made from time-to-time through open market purchases, 10b5-1 plans or privately negotiated transactions subject to market conditions, applicable legal requirements and other relevant factors. The repurchase program does not obligate the Company to acquire any particular amount of ordinary shares, and it may be suspended at any time at the Company’s discretion. The repurchase program is funded using the Company’s working capital and any repurchased shares are recorded as authorized but unissued shares. There were 825,191 shares repurchased during the three months ended October 31, 2018 for approximately $30.8 million in cash and 2,381,832 shares repurchased during the nine months ended October 31, 2018 for approximately $96.4 million in cash. As of October 31, 2018, a total of 3,881,716 shares have been repurchased for approximately $171.3 million in cash since the inception of the repurchase program in June 2016 and recorded as a reduction to equity. As of October 31, 2018, there was approximately $35.4 million available for repurchases through June 4, 2019.

11. Stock-based Compensation

The following table presents the classification of stock-based compensation for the periods indicated:

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017
	(in thousands)			
Stock-based compensation:				
Cost of revenue	$310	$343	$942	$978
Research and development	9,720	8,906	27,847	25,532
Selling, general and administrative	5,582	5,419	16,148	15,565
Total stock-based compensation	$15,612	$14,668	$44,937	$42,075

As of October 31, 2018, total unrecognized compensation cost related to unvested stock options was $5.1 million and is expected to be recognized over a weighted-average period of 2.66 years. Total unrecognized compensation cost related to unvested restricted stock units was $112.2 million and is expected to be recognized over a weighted-average period of 2.94 years. Total unrecognized compensation cost related to unvested restricted stock awards was $1.4 million and is expected to be recognized over a weighted-average period of 0.60 years.

The following table sets forth the weighted-average assumptions used to estimate the fair value of stock options and employee stock purchase plan awards for the periods indicated:

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017
Stock Options:				
Volatility	53%	53%	54%	53%
Risk-free interest rate	2.78%	1.78%	2.75%	2.02%
Expected term (years)	5.45	6.08	5.40	6.07
Dividend yield	0%	0%	0%	0%
Employee stock purchase plan awards:				
Volatility	44%	50%	45%	45%
Risk-free interest rate	2.35%	1.17%	2.15%	1.03%
Expected term (years)	0.5	0.5	0.5	0.5
Dividend yield	0%	0%	0%	0%

Starting from fiscal year 2019, the Company calculates expected volatility for stock options based on its own historical stock price for a period commensurate with the expected term. In the prior fiscal year, the Company calculated expected volatility for stock options based on the weighted average of historical volatilities of its own stock price and the stock prices of similar companies that are publicly available for a period commensurate with the expected term. The Company calculates expected volatility for ESPP based on its own historical stock price for a period commensurate with the offering period.

The following table summarizes stock option activities for the period indicated:

	Option Outstanding					
	Shares	Weighted-Average Exercise Price	Weighted-Average Grant-date Fair Value	Total Intrinsic Value Of Options Exercised (in thousands)	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at January 31, 2018	1,611,344	$ 24.56				
Granted	97,600	42.81	$ 21.83			
Exercised	(207,770)	5.12		$ 8,196		
Forfeited	(16,732)	54.28				
Expired	(9,007)	47.55				
Outstanding at October 31, 2018	1,475,435	28.03			4.68	$ 20,331
Exercisable at October 31, 2018	1,254,926	$ 24.13			3.96	$ 20,327

The intrinsic value of options outstanding and exercisable is calculated based on the difference between the fair market value of the Company's ordinary shares on the reporting date and the exercise price. The closing price of the Company's ordinary shares on October 31, 2018 was $34.78, as reported by The NASDAQ Global Market. The intrinsic value of exercised options is calculated by the difference between the fair market value of the Company's ordinary shares on the exercise date and the exercise price.

The following table summarizes restricted stock and restricted stock units activities for the period indicated:

	Shares	Weighted-Average Grant-Date Fair Value
Unvested at January 31, 2018	2,103,281	$ 56.45
Granted	1,319,200	39.94
Vested	(742,338)	53.25
Forfeited	(35,330)	51.72
Unvested at October 31, 2018	2,644,813	$ 49.18

As of October 31, 2018, the aggregate intrinsic value of unvested restricted stock and restricted stock units was $92.0 million.

12. Net Income (Loss) Per Ordinary Share

The following table sets forth the computation of basic and diluted net income (loss) per ordinary share for the periods indicated:

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017
	(in thousands, except share and per share data)			
Numerator:				
Net income (loss)	$(9,021)	$11,724	$(25,904)	$17,591
Denominator:				
Weighted-average ordinary shares - basic	32,171,890	33,128,761	32,908,614	33,203,432
Effect of potentially dilutive securities:				
Employee stock options	—	913,496	—	967,903
Restricted stock and restricted stock units	—	311,430	—	363,476
Employee stock purchase plan	—	5,206	—	4,157
Weighted-average ordinary shares - diluted	32,171,890	34,358,893	32,908,614	34,538,968
Net income (loss) per ordinary share:				
Basic	$(0.28)	$0.35	$(0.79)	$0.53
Diluted	$(0.28)	$0.34	$(0.79)	$0.51

The following weighted-average potentially dilutive securities were excluded from the computation of diluted net income (loss) per ordinary share as their effect would have been antidilutive:

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017
Options to purchase ordinary shares	1,247,117	290,648	1,172,152	274,629
Restricted stock and restricted stock units	2,243,272	1,224,115	1,494,860	977,904
Employee stock purchase plan	58,530	36,076	35,204	20,675
	3,548,919	1,550,839	2,702,216	1,273,208

13. Income Taxes

The following table provides details of income taxes for the periods indicated:

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017

	(in thousands)			
Income (loss) before income taxes	$(8,429)	$15,437	$(23,537)	$23,736
Provision for income taxes	592	3,713	2,367	6,145
Effective tax rate	(7.0)%	24.1 %	(10.1)%	25.9 %

On December 22, 2017, the Tax Cuts and Jobs Act (the “Tax Act”) was enacted into law in the United States. The new tax legislation contains several provisions that will impact the Company, including the reduction of the corporate income tax rate from 35% to 21%, acceleration of business asset expensing, and a reduction in the amount of executive pay that may qualify as a tax deduction, among others. Income tax expense recorded for the three and nine months ended October 31, 2018 includes the impact of the new tax legislation as currently interpreted by the Company.

Due to the complexities of the new tax legislation, the Securities and Exchange Commission issued Staff Accounting Bulletin No. 118 ("SAB 118") which allows for the recognition of provisional amounts during a measurement period. The measurement period begins in the reporting period that includes the Tax Act's enactment date and ends when the additional information is obtained, prepared, or analyzed to complete the accounting requirements under ASC Topic 740. The measurement period should not extend beyond one year from the enactment date. The Company recorded provisional estimates for the fiscal year ended January 31, 2018 for the following: the revaluation of deferred tax assets and liabilities to reflect the 21 percent corporate tax rate, whether to elect to expense or depreciate new capital equipment, and the US state tax impact to the aforementioned items.

The Company has completed its analysis of the impact of the Tax Act for the fiscal year ended January 31, 2018 and recorded adjustments to the provisional amounts on its financial statements in the three and nine months ended October 31, 2018, which reduced the Company's effective tax rate. The Company recorded an increase to deferred tax assets of approximately $83,000 and a decrease to long term tax liability of approximately $170,000, with a corresponding decrease to income tax expense of approximately $252,000 related to the reduction of the corporate tax rate. The income tax benefit was primarily the result of the clarifying guidance issued by the IRS in regards to the corporate alternative minimum tax rate for fiscal year taxpayers.

The decreased income tax expense for the three and nine months ended October 31, 2018 was primarily due to a reduction in the U.S. statutory rate from 35% to 21%, which was partially offset by a decrease in the proportion of profits generated in lower tax jurisdictions and losses incurred in jurisdictions for which the Company was not able to recognize a related tax benefit.

The Company files federal and state income tax returns in the United States and in various foreign jurisdictions. The tax years 2013 to 2017 remain open to examination by U.S. federal tax authorities. The tax years 2008 to 2017 remain open to examination by U.S. state tax authorities. The tax years 2012 to 2017 remain open to examination by foreign tax authorities. Fiscal years outside of the normal statute of limitations remain open to audit by tax authorities due to tax attributes generated in those earlier years, which have been carried forward and may be audited in subsequent years when utilized.

The Company regularly assesses the likelihood of adverse outcomes resulting from potential tax examinations to determine the adequacy of its provision for income taxes. These assessments can require considerable estimates and judgments. As of October 31, 2018, the gross amount of unrecognized tax benefits was approximately $36.2 million. If the estimates of income tax liabilities prove to be less than the ultimate assessment, then a further charge to expense could be required. If events occur and the payment of these amounts ultimately proves to be unnecessary, the reversal of the liabilities could result in tax benefits being recognized in the period in which the Company determines the liabilities are no longer necessary. The Company does not anticipate significant changes to its uncertain tax positions during the next twelve months.

14. Commitments and Contingencies

The Company leases its principal and other facilities under operating lease agreements. Net operating lease expense for the three months ended October 31, 2018 and 2017 was approximately $1.2 million, respectively. Net operating lease expense for the nine months ended October 31, 2018 and 2017 was approximately $3.5 million and $4.1 million,

respectively. Future annual minimum payments under these operating leases with initial lease terms in excess of one year are as follows:

Fiscal Year	As of October 31, 2018 (in thousands)
2019	$ 817
2020	3,103
2021	1,264
2022	378
2023	129
Total future annual minimum lease payments	$ 5,691

Contract Manufacturer Commitments

The Company’s components and products are procured and built by independent contract manufacturers based on sales forecasts. These forecasts include estimates of future demand, historical trends, analysis of sales and marketing activities, and adjustment of overall market conditions. The Company regularly issues purchase orders to independent contract manufacturers which are cancelable only upon agreement between the Company and the third-party manufacturers. As of October 31, 2018 and January 31, 2018, total manufacturing purchase commitments were approximately $21.8 million and $24.3 million, respectively.

Indemnification

The Company, from time to time, in the normal course of business, indemnifies certain vendors with whom it enters into contractual relationships. The Company has agreed to hold the other party harmless against third-party claims in connection with the Company's future products. The Company also indemnifies certain customers against third-party claims related to certain intellectual property matters. It is not possible to determine the maximum potential amount of liability under these indemnification obligations due to the limited history of prior indemnification claims and the unique facts and circumstances that are likely to be involved in each particular claim. The Company has not made payments under these obligations and no liabilities have been recorded for these obligations in the condensed consolidated balance sheets as of October 31, 2018 and January 31, 2018, respectively.

15. Segment Reporting

The Company operates in one reportable segment related to the development and sales of low-power, high-definition (HD), Ultra HD video compression, image processing and computer vision solutions. The Chief Executive Officer of the Company has been identified as the Chief Operating Decision Maker (the "CODM") and manages the Company's operations as a whole. For the purpose of evaluating financial performance and allocating resources, the CODM reviews financial information presented on a consolidated basis accompanied by information by customer and geographic region.

Geographic Revenue

The following table sets forth the Company's revenue by geographic region based on bill-to location for the periods indicated:

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017
	(in thousands)			
Taiwan	$28,300	$45,026	$100,650	$139,494
Asia Pacific	20,971	19,000	55,372	43,050
Europe	5,734	20,908	13,191	29,252
North America other than United States	1,531	2,582	5,040	7,566
United States	750	1,546	2,445	5,465
Total revenue	$57,286	$89,062	$176,698	$224,827

As of October 31, 2018, substantially all of the Company's property and equipment, net, were located in the United States, Asia Pacific region and Europe with approximate net amounts of $2.3 million, $3.0 million and $1.5 million, respectively.

Major Customers

The customers representing 10% or more of revenue and accounts receivable were Wintech and Chicony, which accounted for approximately 49% and 23% of total revenue for the three months ended October 31, 2018,

respectively, and accounted for approximately 57% and 16% of total revenue for the nine months ended October 31, 2018, respectively. For the three months ended October 31, 2017, the customers representing 10% or more of revenue and accounts receivable were Wintech, GoPro, Inc., or GoPro, a direct OEM customer, and Chicony, which accounted for approximately 51%, 21% and 12% of total revenue, respectively. For the nine months ended October 31, 2017, the only customer representing 10% or more of revenue and accounts receivable was Wintech, which accounted for approximately 62% of total revenue. Accounts receivable with Wintech and Chicony was approximately $12.7 million and $13.3 million as of October 31, 2018, respectively.

16. Related-Party Transactions

The Company considers an entity to be a related party if it owns more than 10% of the Company’s total voting stock at the end of each reporting period or if an officer or employee of an entity also serves on the Company’s board of directors or if it is a significant shareholder and has material business transactions with the Company.

The Company enters into software license agreements with Cadence Design Systems, Inc. (“Cadence”) from time to time. The Chief Executive Officer of Cadence, who is also the President and a Director of Cadence, was a member of the Company’s Board of Directors until June 7, 2017. In March 2017, the Company entered into a noncancelable software license agreement with Cadence. Under this agreement, the Company committed to pay an aggregate amount of $10.3 million through January 2020. As of October 31, 2018, the unpaid liabilities associated with this agreement were approximately $4.3 million. The Company paid $0.9 million and $1.7 million to Cadence for the three months ended October 31, 2018 and 2017, respectively. The Company paid $2.6 million and $2.7 million to Cadence for the nine months ended October 31, 2018 and 2017, respectively. License expenses related to the agreements with Cadence included in research and development expense were approximately $0.8 million for the three months ended October 31, 2018 and 2017, respectively. License expenses related to these agreements were approximately $2.5 million and $2.4 million for the nine months ended October 31, 2018 and 2017, respectively.

17. Subsequent Events

From November 1, 2018 to December 6, 2018, the Company repurchased a total of 104,160 shares for approximately $3.5 million in cash. As of December 6, 2018, the Company had repurchased a total of 3,985,876 shares for approximately $174.8 million in cash and there was approximately $31.9 million available for repurchases under the repurchase program through June 4, 2019.

ITEM 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited condensed consolidated financial statements and related notes included elsewhere in this Quarterly Report on Form 10-Q, and the consolidated financial statements and notes thereto for the fiscal year ended January 31, 2018 and management's discussion and analysis of our financial condition and results of operations included in our Annual Report on Form 10-K for the 2018 fiscal year filed with the Securities and Exchange Commission, or SEC, on March 30, 2018.

This Quarterly Report on Form 10-Q, including this "Management's Discussion and Analysis of Financial Condition and Results of Operations", includes a number of forward-looking statements that involve many risks and uncertainties. Forward-looking statements are identified by the use of the words "would," "could," "will," "may," "expect," "believe," "shou "anticipate," "if," "future," "intend," "plan," "estimate," "predict," "potential," "target," "seek," "project," "forecast," "continu and similar words and phrases, including the negatives of these terms, or other variations of these terms, that denote future events. Such statements include, but are not limited to, statements concerning our market opportunity and our ability to compete in such markets, our product strategy, our ability to develop and introduce new solutions, our future financial and operating performance, our sales and marketing strategy, our investment strategy, research and development, our customer and supplier relationships and inventory levels, industry trends, our cash needs and capital requirements, our expectations about taxes and operating expenses, the availability of third-party components and economic conditions. These statements reflect our current views with respect to future events and our potential financial performance and are subject to risks and uncertainties that could cause our actual results and financial position to differ materially and adversely from what is projected or implied in any forward-looking statements included in this Quarterly Report on Form 10-Q. These factors include, but are not limited to: risks associated with revenue being generated from new customers or design wins, neither of which is assured; our ability to retain and expand customer relationships and to achieve design wins; the commercial success of our customers' products; our growth strategy; fluctuations in our operating results; our ability to anticipate future market demands and future needs and preferences of our customers; our ability to introduce new and enhanced solutions; the expansion of our current markets and our ability to successfully enter new markets; anticipated trends and challenges, including competition, in the markets in which we operate or seek to operate; our expectations regarding computer vision; our ability to effectively generate and manage growth; our ability to retain key employees; the potential for intellectual property disputes or other litigation; the risks described under Item 1A of Part II — "Risk Factors," Item 2 of Part I — "Management's Discussion and Analysis of Financial Condition and Results of Operations"; the risks described elsewhere in this Quarterly Report on Form 10-Q and those discussed in other documents we file with the SEC. We make these forward-looking statements based upon information available on the date of this Quarterly Report on Form 10-Q, and we have no obligation (and expressly disclaim any such obligation) to update or alter any forward-looking statements, whether as a result of new information or otherwise except as otherwise required by securities regulations.

Overview

We are a leading developer of semiconductor processing solutions for video that enable high-definition, or HD, video capture, analysis, sharing, and display. A device that captures video includes four primary components: a lens, an image sensor, a video processor and storage memory. The video processor converts raw video input into a format that can be stored, analyzed and distributed efficiently and, in some cases, analyzes the video data to automate processes. We combine our processor design capabilities with our expertise in video, image processing and computer vision algorithms and software to provide a technology platform that is designed to be easily scalable across multiple applications and enable rapid and efficient product development. Our system-on-a-chip, or SoC, designs fully integrate HD video processing, image processing and analysis, audio processing and system functions onto a single chip, delivering exceptional video and image quality, differentiated functionality and low power consumption.

We sell our solutions to leading original design manufacturers, or ODMs, and original equipment manufacturers, or OEMs, globally. We refer to ODMs as our customers and OEMs as our end customers, except as otherwise indicated

or as the context otherwise requires. In the camera market, our solutions enable the creation of high-quality video content in wearable cameras, automotive cameras, Internet Protocol, or IP, security cameras, for both professional use and home security and monitoring, unmanned aerial vehicle cameras, also referred to as UAVs or drones, and virtual reality cameras, also referred to as 360° cameras. In the infrastructure market, our solutions efficiently manage IP video traffic, broadcast encoding, transcoding and IP video delivery applications. We have also recently introduced, and continue to develop, solutions to address emerging markets, such as the incorporation of computer vision functionality for OEM automotive advanced driving assistance systems and robotics markets.

Our sales cycles typically require a significant investment of time and a substantial expenditure of resources before we can realize revenue from the sale of our solutions, if any. Our typical sales cycle consists of a multi-month sales and development process involving our customers' system designers and management along with our sales personnel and software engineers. If successful, this process culminates in a customer's decision to use our solutions in its system, which we refer to as a design win. Our sales efforts are typically directed to the OEM of the product that will incorporate our video and image processing solution, but the eventual design and incorporation of our SoC into the product may be handled by an ODM on behalf of the OEM. Volume production may begin within six to 18 months after a design win, depending on the complexity of our customer's product and other factors upon which we may have little or no influence. Once one of our solutions has been incorporated into a customer's design, we believe that our solution is likely to remain a component of the customer's product for its life cycle because of the time and expense associated with redesigning a product or substituting an alternative solution. Conversely, a design loss to a competitor will likely preclude any opportunity for us to generate future revenue from such customer's product. Even if we obtain a design win and our SoC remains a component through the life cycle of a customer's product, the volume and timing of actual sales of our SoCs to the customer depend upon the production, release and market acceptance of that product, none of which are within our control. A portable consumer device typically has a product life cycle of six to 18 months, while an IP security camera typically has a product life cycle of 12 to 24 months. We anticipate that OEM automotive products will have life cycles longer than 2 years.

Financial Highlights and Trends

- We recorded revenue of $57.3 million and $176.7 million for the three and nine months ended October 31, 2018, respectively. This represented decreases of 35.7% and 21.4% for the three and nine months ended October 31, 2018, respectively, as compared to the same periods in the prior fiscal year. The decrease in revenue was primarily attributable to declines in revenue from wearable camera markets, including sports camera, virtual reality and non-sports wearable camera markets. The decrease was also attributable to lower revenue from the drone market as a result of Dajiang Innovation Technology Inc., or DJI, the major customer in the drone market, shifting its consumer-based drones to competitive solutions, as well as continued weakness from smaller drone customers. The declines in revenue in the wearable camera and drone markets were partially offset by revenue growth in the automotive and IP security camera markets. The revenue growth in the automotive camera market was primarily due to a significant increase in shipments of OEM automotive video recorders in the Japan and China regions, offset by lower revenue from the automotive aftermarket. In the IP security market, the consumer IP security camera market demonstrated strong growth, led by expansion of revenues from the home security and monitoring market in the North America region. Revenue in the professional IP security camera market was down slightly for the three and nine months ended October 31, 2018 compared to the same periods in the prior fiscal year, which was primarily due to a decline in orders from a major China customer, partially offset by increased revenue from non-China customers.
- We recorded operating losses of $9.4 million and $26.1 million for the three and nine months ended October 31, 2018, respectively, as compared to operating income of $15.1 million and $23.0 million for the three and nine months ended October 31, 2017, respectively. The decreases in operating income were primarily due to decreased revenue and increased expenses incurred primarily in support of new applications in the automotive OEM market as well as the development of computer vision based solutions. The increase in expenses related primarily to increased research and development headcount, chip tape-out fees and increased stock-based compensation expense.
- We generated cash flows from operating activities of $10.5 million for the nine months ended October 31, 2018, as compared to $60.3 million for the nine months ended October 31, 2017. The decreased cash flows from operating activities were primarily due to decreased net income as a result of decreased revenue and increased operating expenses. The decrease in cash flows from operating activities also was attributable to decreased liabilities associated with the timing of payments to suppliers, partially offset by increased cash receipts associated with the timing of payments from customers.
- On June 4, 2018, our Board of Directors authorized the repurchase of up to an additional $100.0 million of our ordinary shares over a twelve-month period commencing June 5, 2018. We repurchased 825,191 shares for approximately $30.8 million in cash during the three months ended October 31, 2018 and 2,381,832 shares for approximately $96.4 million in cash during the nine months ended October 31, 2018. As of October 31, 2018, we had

repurchased a total of 3,881,716 shares for approximately $171.3 million in cash since the inception of the repurchase programs in June 2016 and approximately $35.4 million remained available for repurchases under the current repurchase program through June 4, 2019. Repurchases are funded using working capital and any repurchased shares are recorded as authorized but unissued shares.

Factors Affecting Our Performance

Design Wins. We closely monitor design wins by customer and end market. We consider design wins to be critical to our future success, although a design win may not successfully materialize into revenue, and even if it does result in revenue, the amount generated by each design win can vary significantly. Our long-term sales expectations are based on forecasts from customers and internal estimations of customer demand factoring in the expected time to market for end customer products incorporating our solutions and associated revenue potential. Our ability to accurately forecast demand, however, can be adversely affected by a number of factors, including inaccurate forecasting by our customers, miscalculations by our customers of their inventory requirements, changes in market conditions, adverse changes in our product order mix and fluctuating demand for our customers' products.

Pricing, Product Cost and Margin. Our pricing and margins depend on the volumes and features of the solutions we provide to our customers. Additionally, we make significant investments in new solutions for both cost improvements and new features that we expect to drive revenue and maintain margins. In general, solutions incorporated into more complex configurations, such as those used in high-performance camera or infrastructure applications, have higher prices and higher gross margins as compared to solutions sold into lower-performing, more competitive camera applications. Our average selling price can vary by market and application due to market-specific supply and demand, the maturation of products launched in previous years and the launch of new products.

We continually monitor the cost of our solutions. As we rely on third-party manufacturers for our products, we maintain a close relationship with these suppliers to continually monitor production yields, component costs and design efficiencies.

Shifting Consumer Preferences. Our revenue is subject to consumer preferences, regarding form factor and functionality, and how those preferences impact the video and image capture electronics that we support. For example, improved smartphone video capture capabilities, and the rapid adoption of smartphones by consumers, led to the decline of pocket video cameras aimed at the video and image capture market. The current video and image capture market is now characterized by a greater volume of more specialized video and image capture devices that are less likely to be replaced with smartphones, such as wearable, IP security, UAV and automotive cameras. This increasing specialization of video capture devices has changed our customer base and end markets and has impacted our revenue. In the future, we expect further changes in the market to continue to impact our business performance.

Continued Concentration of Revenue by End Market. Historically, our revenue has been significantly concentrated in a small number of end markets. In fiscal year 2010, the majority of our revenue came from the pocket video, camcorder and infrastructure markets. Since that time, we have developed technologies to provide solutions for new markets as they emerged, such as the wearable, IP security, UAV and automotive camera markets. Since fiscal year 2013, the wearable sports and professional IP security markets have been our largest end markets and sales into these markets collectively generated the majority of our revenue. We believe, however, that expansion into new markets is required to facilitate revenue growth and customer diversification as wearable camera and UAV camera markets have recently slowed. While we will continue to expand our end market exposure, such as to home security and monitoring cameras, non-sports wearable cameras, UAVs, automotive, virtual reality cameras and robotics applications, we anticipate that sales to a limited number of end markets will continue to account for a significant percentage of our total revenue for the foreseeable future. Our end market concentration may cause our financial performance to fluctuate significantly from period to period based on the success or failure of products that our SoCs are designed into as well as the overall growth or decline in the video capture markets in which we compete. In addition, we derive a significant portion of our revenue from a limited number of ODMs who build products on behalf of a limited number of OEMs and from a limited number of OEMs to whom we ship directly. We believe that our operating results for the foreseeable future will continue to depend on sales to a relatively small number of customers.

Ability to Capitalize on Connectivity Trends. Mobile connected devices are ubiquitous today and play an increasingly prominent role in consumers' lives. The constant connectivity provided by these devices has created a demand for

connected electronic peripherals such as video and image capture devices. Our ability to capitalize on these trends by supporting our end customers in the development of connected peripherals that seamlessly cooperate with other connected devices and allow consumers to distribute and share video and images with online media platforms is critical for our success. We have added wireless communication functionality into our solutions for wearable, IP security, UAV and automotive cameras. The combination of our compression technology with wireless connectivity enables wireless video streaming and uploading of videos and images to the Internet. Our solutions enable IP security camera systems to stream video content to either cloud infrastructure or connected mobile devices, and our solutions for wearable and UAV cameras allow consumers to quickly stream or upload video and images to social media platforms.

Ability to Capitalize on Computer Vision Trends. We expect that computer vision functionality will become an increasingly important requirement in many of our current and future markets, including IP security, wearable, UAV, automotive and robotics markets. As a result, we believe that our ability to develop advanced computer vision technology, enable and support customer product development in emerging applications such as advanced driver-assistance systems, object detection, people recognition and machine learning, and gain customer acceptance of our technology platform and solutions, will be critical to our future success.

Sales Volume. A typical camera design win that successfully launches into the marketplace can generate a wide range of sales volumes for our solutions, depending on the end market demand for our customers' products. This can depend on several factors, including the reputation of the end customer, market penetration, product capabilities, size of the end market that the product addresses and our end customers' ability to sell their products. In certain cases, we may provide volume discounts on sales of our solutions, which may be offset by lower manufacturing costs related to higher volumes. In general, our customers with greater market penetration and better branding tend to develop products that generate larger volumes over the product life cycle.

Customer Product Life Cycle. We estimate our customers' product life cycles based on the customer, type of product and end market. In general, products launched in the camera market have shorter life cycles than those sold into the infrastructure market. We typically commence commercial shipments from six to 18 months following a design win; however, in some markets, more lengthy product and development cycles are possible, depending on the scope and nature of the project. A portable consumer device typically has a product life cycle of six to 18 months, and an IP security camera typically has a product life cycle of 12 to 24 months. We anticipate that product development and product life cycles will typically be longer in the OEM automotive and robotics markets. In the infrastructure market, the product life cycle can range from 24 to 60 months.

Results of Operations

The following table sets forth a summary of our statement of operations for the periods indicated:

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017
	(dollars in thousands)			
Revenue	$57,286	$89,062	$176,698	$224,827
Cost of revenue	22,701	32,448	69,208	82,445
Gross profit	34,585	56,614	107,490	142,382
Operating expenses:				
Research and development	31,653	29,796	95,446	83,936
Selling, general and administrative	12,354	11,700	38,098	35,406
Total operating expenses	44,007	41,496	133,544	119,342
Income (loss) from operations	(9,422)	15,118	(26,054)	23,040
Other income, net	993	319	2,517	696
Income (loss) before income taxes	(8,429)	15,437	(23,537)	23,736
Provision for income taxes	592	3,713	2,367	6,145
Net income (loss)	$(9,021)	$11,724	$(25,904)	$17,591

The following table sets forth operating results as a percentage of revenue of each line item for the periods indicated:

	Three Months Ended October 31,		Nine Months Ended October 31,	
	2018	2017	2018	2017
Revenue	100 %	100 %	100 %	100 %

Cost of revenue	40	36	39	37
Gross profit	60	64	61	63
Operating expenses:				
Research and development	55	33	54	37
Selling, general and administrative	22	13	22	16
Total operating expenses	77	46	76	53
Income (loss) from operations	(17)	18	(15)	10
Other income, net	2	—	1	—
Income (loss) before income taxes	(15)	18	(14)	10
Provision for income taxes	1	4	1	3
Net income (loss)	(16)%	14 %	(15)%	7 %

Revenue

We derive substantially all of our revenue from the sale of HD and Ultra HD video and image processing SoC solutions to OEMs and ODMs, either directly or through our distributors. Our SoC solutions have been primarily used in the camera markets, such as IP security, automotive video recorder, drone and wearable cameras. Although we expect these camera markets to continue to generate revenue for the foreseeable future, we are introducing new SoCs targeting emerging computer vision applications in the IP security, OEM automotive, and robotics markets. We derive a substantial portion of our revenue from sales made indirectly through one of our distributors, Wintech Microelectronics Co., Ltd., or Wintech, and directly to one of our ODM customers, Chicony Electronics Co., Ltd., or Chicony.

We have historically experienced seasonal fluctuations in our quarterly revenue with our third fiscal quarter normally being the highest revenue quarter. This fluctuation has been driven primarily by increased sales in consumer camera markets as our customers build inventories in preparation for the holiday shopping season. Due to experienced declines in demand for our solutions in several consumer camera markets, including wearable camera, virtual reality and drone markets, the seasonal impact on quarterly revenue is not significant in the current fiscal year. More generally, our average selling prices fluctuate based on the mix of our solutions sold in a period which reflects the impact of both changes in unit sales of existing solutions as well as the introduction and sales of new solutions. Our solutions are typically characterized by a life cycle that begins with higher average selling prices and lower volumes, followed by broader market adoption, higher volumes and average selling prices that are lower than initial levels.

The end markets into which we sell our products have seen significant changes as consumer preferences have evolved in response to new technologies. As a result, the composition and timing of our revenue may differ meaningfully during periods of technology or consumer preference changes. We expect shifts in consumer use of video capture to continue to change over time, as computer vision specialized use cases emerge and video capture continues to proliferate.

Cost of Revenue and Gross Margin

Cost of revenue includes the cost of materials such as wafers processed by third-party foundries, costs associated with packaging, assembly and testing, and our manufacturing support operations such as logistics, planning and quality assurance. Cost of revenue also includes indirect costs such as warranty, inventory valuation reserves and other general overhead costs.

We expect that our gross margin may fluctuate from period to period as a result of changes in average selling price, product mix and the introduction of new products by us or our competitors. In general, solutions incorporated into more complex configurations, such as those used in high-performance cameras or infrastructure applications, have higher prices and higher gross margins, as compared to solutions sold into the lower-performance, more competitive camera applications. As semiconductor products mature and unit volumes sold to customers increase, their average selling prices typically decline. These declines may be paired with improvements in manufacturing yields and lower wafer, packaging and test costs, which offset some of the margin reduction that could result from lower selling prices. We believe that our gross margin will decline in the future as we continue to penetrate the highly competitive camera market and, in particular, the IP security market.

Research and Development

Research and development expense consists primarily of personnel costs, including salaries, stock-based compensation and employee benefits. The expense also includes costs of development incurred in connection with our collaborations with our foundry vendors, costs of licensing intellectual property from third parties for product development, costs of development for software and hardware tools, cost of fabrication of mask sets for prototype products, and allocated depreciation and facility expenses. All research and development costs are expensed as

incurred. We expect our research and development expense to increase in absolute dollars as we continue to enhance and expand our product features and offerings and increase headcount for new SoC development and development of computer vision technology, especially for the OEM automotive market.

Selling, General and Administrative

Selling, general and administrative expense consists primarily of personnel costs, including salaries, stock-based compensation and employee benefits for our sales, marketing, finance, human resources, information technology and administrative personnel. The expense also includes professional service costs related to accounting, tax, legal services, and allocated depreciation and facility expenses. We expect our selling, general and administrative expense to increase in absolute dollars as we continue to maintain the infrastructure and expand the size of our sales and marketing organization to support our business strategy of addressing new opportunities with our computer vision technology.

Other Income, Net

Other income consists primarily of interest income from deposits with financial institutions and interest income from investments in debt securities, net of interest expense incurred for intangible assets purchased and gains and losses from foreign currency transactions and remeasurements.

Provision for Income Taxes

We are incorporated and domiciled in the Cayman Islands and also conduct business in several countries such as the United States, China, Taiwan, Hong Kong, Italy, South Korea and Japan, and we are subject to taxation in those jurisdictions. Our worldwide operating income is subject to varying tax rates and our effective tax rate is highly dependent upon the geographic distribution of our earnings or losses and the tax laws and regulations in each geographical region. It is also subject to fluctuation from changes in the valuation of our deferred tax assets and liabilities, tax benefits from excess stock-based compensation deductions; transfer pricing adjustments and the tax effects of nondeductible compensation. We have historically had lower effective tax rates as a substantial percentage of our operations are conducted in lower-tax jurisdictions. If our operational structure was to change in such a manner that would increase the amount of operating income subject to taxation in higher-tax jurisdictions, or if we were to commence operations in jurisdictions assessing relatively higher tax rates, our effective tax rate could fluctuate significantly on a quarterly basis and/or be adversely affected.

Significant judgment is required in evaluating our uncertain tax positions and determining our provision for income taxes. Although we believe our reserves are reasonable, no assurance can be given that the final tax outcome of these matters will not be different from that which is reflected in our historical provision for income taxes and accruals. We adjust these reserves in light of changing facts and circumstances, such as the closing of a tax audit or the refinement of an estimate. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the impact of uncertain tax position reserves and changes to reserves that are considered appropriate, as well as the related net interest and penalties.

Significant judgment is also required in determining any valuation allowance recorded against deferred tax assets. In assessing the need for a valuation allowance, we consider all available evidence, including past operating results, estimates of future taxable income, and the feasibility of tax planning strategies. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

On December 22, 2017, the Tax Cuts and Jobs Act, or the Tax Act, was enacted into law in the United States. The new tax legislation makes changes to the corporate tax rate, business-related deductions and taxation of foreign earnings, among others, that are generally effective for taxable years beginning after December 31, 2017. We have completed our accounting related to the tax impact of the Tax Act in the quarter ended October 31, 2018. Refer to Note 13, “Income Taxes”, of Notes to Condensed Consolidated Financial Statements included in this report for details of our evaluation.

Comparison of the Three and Nine Months Ended October 31, 2018 and 2017

Revenue

Three Months Ended October 31,		Change		Nine Months Ended October 31,		Change	
2018	2017	Amount	%	2018	2017	Amount	%

	(dollars in thousands)							
Revenue	$57,286	$89,062	$(31,776)	(35.7)%	$176,698	$224,827	$(48,129)	(21.4)%

The decreased revenue for the three and nine months ended October 31, 2018, as compared to the same periods in the prior fiscal year, was primarily attributable to declines in revenue from wearable camera markets, including sports camera, virtual reality and non-sports wearable camera markets. The decrease was also attributable to lower revenue from the drone market as a result of Dajiang Innovation Technology Inc., or DJI, the major customer in the drone market, shifting its consumer-based drones to competitive solutions, as well as continued weakness from smaller drone customers. The declines in revenue in the wearable camera and drone markets were partially offset by revenue growth in the automotive and IP security camera markets. The revenue growth in the automotive camera market was primarily due to a significant increase in shipments of OEM automotive video recorders in the Japan and China regions, offset by lower revenue from the automotive aftermarket. In the IP security market, the consumer IP security camera market demonstrated strong growth, led by expansion of revenues from the home security and monitoring market in the North America region. Revenue in the professional IP security camera market was down slightly for the three and nine months ended October 31, 2018 compared to the same periods in the prior fiscal year, which was primarily due to a decline in orders from a major China customer, partially offset by increased revenue from non-China customers.

Cost of Revenue and Gross Margin

	Three Months Ended October 31,		Change		Nine Months Ended October 31,		Change	
	2018	2017	Amount	%	2018	2017	Amount	%
	(dollars in thousands)							
Cost of revenue	$22,701	$32,448	$(9,747)	(30.0)%	$69,208	$82,445	$(13,237)	(16.1)%
Gross profit	34,585	56,614	(22,029)	(38.9)%	107,490	142,382	(34,892)	(24.5)%
Gross margin	60.4 %	63.6 %	—	(3.2)%	60.8 %	63.3 %	—	(2.5)%

Cost of revenue decreased for the three and nine months ended October 31, 2018, as compared to the same periods in the prior fiscal year, primarily due to lower revenue in the wearable camera and drone markets. The cost of revenue decreases were partially offset by increased shipments of SoCs for the IP security camera and automotive OEM markets.

Gross margin decreased for the three and nine months ended October 31, 2018, as compared to the same periods in the prior fiscal year, primarily due to an increase in the percentage of our total revenue that was derived from the lower gross margin IP security camera market combined with a decline in revenue from the higher gross margin drone market.

Research and Development

	Three Months Ended October 31,		Change		Nine Months Ended October 31,		Change	
	2018	2017	Amount	%	2018	2017	Amount	%
	(dollars in thousands)							
Research and development	$31,653	$29,796	$1,857	6.2%	$95,446	$83,936	$11,510	13.7%

Research and development expense increased for the three and nine months ended October 31, 2018, as compared to the same periods in the prior fiscal year, primarily due to increases in engineering headcount and chip development cost associated with the computer vision technology development for our current markets, as well as new markets such as the automotive OEM and robotics markets. Our engineering headcount increased to 552 at October 31, 2018 compared to 503 at October 31, 2017, which resulted in an increase in salary-related expenses of approximately $1.5 million and $5.5 million for the three and nine months ended October 31, 2018, respectively. The increased research and development expense was also attributable to additional stock-based compensation expense of approximately $0.8 million and $2.3 million for the three and nine months ended October 31, 2018, respectively, as a result of the issuance of options and restricted stock units for newly hired employees and our annual evergreen stock program for existing employees. The SoC development cost was relatively flat for the three months ended October 31, 2018, but increased by approximately $3.4 million for the nine months ended October 31, 2018, as compared to the same periods in the prior fiscal year, due to the timing and number of chips in development.

Selling, General and Administrative

	Three Months Ended October 31,		Change		Nine Months Ended October 31,		Change	
	2018	2017	Amount	%	2018	2017	Amount	%
	(dollars in thousands)							
Selling, general and administrative	$12,354	$11,700	$654	5.6%	$38,098	$35,406	$2,692	7.6%

Selling, general and administrative expense increased for the three and nine months ended October 31, 2018, as compared to the same periods in the prior fiscal year, primarily due to our selling, general and administrative headcount increasing to 175 at October 31, 2018 compared to 168 at October 31, 2017. The increased headcount resulted in an increase in salary-related expenses of approximately $0.7 million and $1.7 million for the three and nine months ended October 31, 2018, respectively. For the nine months ended October 31, 2018, the increase was also attributable to additional stock-based compensation expense of approximately $0.6 million, as a result of the issuance of options and restricted stock units for newly-hired employees and our annual evergreen stock program for existing employees, and approximately $0.6 million of additional expenditures on outside professional services to support our business.

Other Income, Net

	Three Months Ended October 31,				Nine Months Ended October 31,			
	2018	2017	Change Amount	%	2018	2017	Change Amount	%
	(dollars in thousands)							
Other income, net	$993	$319	$674	211.3%	$2,517	$696	$1,821	261.6%

The increase in other income, net, for the three and nine months ended October 31, 2018 compared to the same periods in the prior fiscal year was primarily due to an aggregate of approximately $0.7 million and $1.8 million, respectively, of additional interest and other income from our deposits and debt security investments. The increase is primarily the result of larger invested balances, interest rate increases and debt securities purchased at discounts. During the three months ended October 31, 2018, we invested an additional $100.0 million in debt securities.

Provision for Income Taxes

	Three Months Ended October 31,				Nine Months Ended October 31,			
	2018	2017	Change Amount	%	2018	2017	Change Amount	%
	(dollars in thousands)							
Provision for income taxes	$592	$3,713	$(3,121)	(84.1)%	$2,367	$6,145	$(3,778)	(61.5)%
Effective tax rate	(7.0)%	24.1%	—	(31.1)%	(10.1)%	25.9%	—	(36.0)%

The quarterly income taxes reflect an estimation of the corresponding fiscal year's annual effective tax rate and include, when applicable, adjustments from discrete tax items arising in that quarter.

The decreased income tax expense for the three and nine months ended October 31, 2018, as compared to the same periods in the prior fiscal year, was primarily due to a reduction in the U.S. statutory rate from 35% to 21%, which was partially offset by a decrease in the proportion of profits generated in lower-tax jurisdictions and losses incurred in jurisdictions for which the Company was not able to recognize a related tax benefit.

Liquidity and Capital Resources

As of October 31, 2018 and January 31, 2018, we had cash, cash equivalents and marketable securities of approximately $348.6 million and $434.6 million, respectively. We invest in highly liquid, short-term marketable securities and hold these investments as available-for-sale securities. As of October 31, 2018, these securities had a fair value of approximately $203.4 million with insignificant unrealized losses caused by fluctuations in market value.

Cash Flows

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

	Nine Months Ended October 31,	
	2018	2017
	(in thousands)	
Net cash provided by operating activities	$10,498	$60,294
Net cash used in investing activities	(50,650)	(13,228)
Net cash used in financing activities	(94,180)	(49,004)
Net decrease in cash and cash equivalents	$(134,332)	$(1,938)

Net Cash Provided by Operating Activities

Net cash provided by operating activities decreased for the nine months ended October 31, 2018 compared to the same period in the prior fiscal year, primarily due to decreased net income as a result of decreased revenue and increased operating expenses. The decrease also was attributable to decreased liabilities associated with the timing of payments to suppliers, partially offset by increased cash receipts associated with the timing of payments from customers.

Net Cash Used in Investing Activities

Net cash used in investing activities increased for the nine months ended October 31, 2018 compared to the same period in the prior fiscal year, primarily due to approximately $86.0 million of additional investments in debt securities. The increased cash used in investing activities was partially offset by an increase of approximately $48.6 million in cash receipts from the sale and maturity of debt securities.

Net Cash Used in Financing Activities

Net cash used in financing activities increased for the nine months ended October 31, 2018 compared to the same period in the prior fiscal year, primarily due to additional payments of $44.9 million in cash for the repurchase of our ordinary shares under the stock repurchase program.

Stock Repurchase Program

On June 4, 2018, our Board of Directors authorized the repurchase of up to an additional $100.0 million of our ordinary shares over a twelve-month period commencing June 5, 2018. Since the inception of the repurchase programs in June 2016, a total of $225.0 million has been authorized and we have repurchased a total of 3,881,716 shares for approximately $171.3 million in cash. As of October 31, 2018, approximately $35.4 million remained available for repurchases under the current repurchase program through June 4, 2019. Repurchases under the program may be made from time-to-time through open market purchases, 10b5-1 plans or privately negotiated transactions subject to market conditions, applicable legal requirements and other relevant factors. The repurchase program does not obligate us to acquire any particular amount of ordinary shares, and it may be suspended at any time at the company's discretion. Repurchases are funded using working capital and any repurchased shares are recorded as authorized but unissued shares.

Operating and Capital Expenditure Requirements

As of October 31, 2018, we had cash, cash equivalents and marketable securities of approximately $348.6 million. We believe that our existing cash balances will be sufficient to meet our anticipated cash requirements through at least the next 12 months. In the future, we expect our operating and capital expenditures to increase as we increase headcount, expand our business activities, and implement and enhance our information technology platforms. As we expand our operations, we may require more working capital. If our available cash balances are insufficient to satisfy our future liquidity requirements, we may seek to sell equity or convertible debt securities or borrow funds commercially. The sale of equity and convertible debt securities may result in dilution to our shareholders and those securities may have rights senior to those of our ordinary shares. If we raise additional funds through the issuance of convertible debt securities, these securities could contain covenants that would restrict our operations. We may require additional capital beyond our currently anticipated amounts. Additional capital may not be available to us on reasonable terms, or at all.

Our short- and long-term capital requirements will depend on many factors, including the following:

- our ability to generate cash from operations;
- our ability to control our costs;
- the expansion of our research and development of new technologies and products to address new markets and applications;
- the emergence of competing or complementary technologies or products;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights, or participating in litigation-related activities; and
- our acquisition of complementary businesses, products and technologies.

Contractual Obligations, Commitments and Contingencies

Manufacturing Purchase Obligations

As of October 31, 2018, we had purchase obligations with our independent contract manufacturers of $21.8 million.

Except as described above with respect to the manufacturing purchase obligations, there were no other material changes in our contractual obligations, commitments and contingencies from those disclosed in our Annual Report on Form 10-K for the fiscal year ended January 31, 2018. Please see Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Contractual Obligations, Commitments and Contingencies” in our Annual Report on Form 10-K for the fiscal year ended January 31, 2018 for a description of our contractual obligations.

Off-Balance Sheet Arrangements

As of October 31, 2018, we did not engage in any off-balance sheet arrangements, including the use of structured finance, special purpose entities or variable interest entities.

Recent Authoritative Accounting Guidance

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

Critical Accounting Policies and Significant Management Estimates

There have been no material changes to our critical accounting policies and estimates as compared to the critical accounting policies and estimates described in our Annual Report on Form 10-K for the 2018 fiscal year filed with the SEC on March 30, 2018, except for the recently adopted accounting guidance on revenue recognition as discussed in Notes 1 and 2 of Notes to Condensed Consolidated Financial Statements.

ITEM 3. Quantitative and Qualitative Disclosures about Market Risk

As of October 31, 2018 and January 31, 2018, we had cash, cash equivalents, marketable securities and restricted cash totaling $348.6 million and $434.6 million, respectively. Our cash is deposited in checking accounts with reputable financial institutions. The cash equivalents and marketable securities consist primarily of investments in debt securities. Our cash is held for working capital purposes. We do not enter into investments for trading or speculative purposes.

Interest Rate Fluctuation Risk

The primary objectives of our investment activities are to preserve principal, provide liquidity and maximize income without significantly increasing risk. Some of the securities we invest in are subject to market risk. This means that a change in prevailing interest rates may cause the principal amount of the investment to fluctuate. To minimize this risk, we maintain our portfolio of short-term investments in a variety of debt securities with high liquidity. We do not enter into investments for trading or speculative purposes. A 10% change in interest rates will not have a material impact on our future interest income or investment fair value. The risk associated with fluctuating interest rates is limited to our investment portfolio.

Foreign Currency Risk

To date, all of our product sales and inventory purchases have been denominated in U.S. dollars. We therefore have not had any foreign currency risk associated with these two activities. The functional currency of all of our entities is the U.S. dollar. Our operations outside of the United States incur operating expenses and hold assets and liabilities

denominated in foreign currencies, principally the New Taiwan Dollar and the Chinese Yuan Renminbi. Our results of operations and cash flows are subject to fluctuations due to changes in foreign currency exchange rates, particularly the exchange rates between the Chinese Yuan Renminbi and the U.S. dollar and between the New Taiwan Dollar and the U.S. dollar. Given that the operating expenses that we incur in currencies other than U.S. dollars have not been a significant percentage of our total revenue, we believe that the exposure to foreign currency fluctuation risk from operating expenses is not material at this time. As we grow our operations, our exposure to foreign currency risk could become more significant. To date, we have not entered into any foreign currency exchange contracts and currently do not expect to enter into foreign currency exchange contracts for trading or speculative purposes.

ITEM 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Quarterly Report on Form 10-Q. The term “disclosure controls and procedures” (as defined in Rules 13a- 15(e) and 15d- 15(e)) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Based upon such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of October 31, 2018, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the Company’s fiscal quarter ended October 31, 2018 that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

Inherent Limitations of Disclosure Controls and Internal Control over Financial Reporting

Because of their inherent limitations, our disclosure controls and procedures and our internal control over financial reporting may not prevent material errors or fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. The effectiveness of our disclosure controls and procedures and our internal control over financial reporting is subject to risks, including that the controls may become inadequate because of changes in conditions or that the degree of compliance with our policies or procedures may deteriorate.

PART II – OTHER INFORMATION

ITEM 1. Legal Proceedings

We are not engaged in any material legal proceedings at this time.

ITEM 1A. Risk Factors

Certain factors may have a material adverse effect on our business, financial condition and results of operations. You should consider carefully the risks and uncertainties described below, in addition to other information contained in this Quarterly Report on Form 10-Q, including our unaudited condensed consolidated financial statements and related notes. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business. If any of the following risks actually occurs, our business, financial condition, results of operations, and future prospects could be materially and adversely affected. In that event, the trading price of our ordinary shares could decline, and you could lose part or all of your investment.

Risks Related to Our Business and Our Industry

If our customers do not design our solutions into their product offerings, or if our customers' product offerings are not commercially successful, our business would suffer.

We sell our video and image processing system-on-a-chip, or SoC, solutions to original equipment manufacturers, or OEMs, who include our SoCs in their products, and to original design manufacturers, or ODMs, who include our SoCs in the products that they supply to OEMs. We refer to ODMs as our customers and OEMs as our end customers, except as otherwise indicated or as the context otherwise requires. Our video and image processing SoCs are generally incorporated into our customers' products at the design stage, which is referred to as a design win. As a result, we rely on OEMs to design our solutions into the products that they design and sell. Without these design wins, our business would be significantly harmed. We often incur significant expenditures developing a new SoC solution without any assurance that an OEM will select our solution for design into its own product. Once an OEM designs a competitor's device into its product, it becomes significantly more difficult for us to sell our SoC solutions to that OEM because changing suppliers involves significant cost, time, effort and risk for the OEM.

Even if an OEM designs one of our SoC solutions into its product, we cannot be assured that the OEM's product will be commercially successful over time or at all. For example, in the past we have secured design wins for camera products that were never commercially released by our customer as a result of factors beyond our control. If other products or other product categories incorporating our SoC solutions are not commercially successful or experience rapid decline, our revenue and business will suffer. For example, we have recently experienced declines in demand for our solutions in several consumer camera markets, including wearable cameras, virtual reality cameras and unmanned aerial vehicle, also referred to as UAVs or drones, which has negatively impacted our business and which we expect will continue through at least the end fiscal year 2019.

Similarly, even if an OEM designs one of our SoC solutions into its product, we are not assured that we will receive or continue to receive new design wins from that OEM. For example, GoPro, our largest OEM customer in fiscal year 2017, has used a competing solution in its recently introduced mainstream cameras, which has had and will continue to have a significant negative impact on our revenue. In fiscal year 2018, revenues from direct shipments to GoPro and from shipments to GoPro's ODMs combined accounted for approximately 13% of our total revenue. We currently anticipate that revenue from GoPro will represent an immaterial percentage of our total revenue in fiscal year 2019 and beyond. Similarly, DJI, our largest UAV customer has begun using competing solutions in many of its

mainstream products, which has negatively impacted DJI’s demand for our solutions.

We depend on a limited number of customers and end customers for a significant portion of our revenue. If we fail to retain or expand our customer relationships, our revenue could decline.

We derive a significant portion of our revenue from a limited number of ODMs who build products on behalf of a limited number of OEMs and from a limited number of OEMs to whom we ship directly. We anticipate that this customer concentration will continue for the foreseeable future. In fiscal years 2018, 2017 and 2016, sales directly and through our distributors to our five largest ODM and OEM customers collectively accounted for approximately 51%, 56% and 56% of our total revenue, respectively, and sales to our ten largest ODM and OEM customers collectively accounted for approximately 65%, 68% and 69% of our total revenue, respectively. For the nine months ended October 31, 2018, sales directly and through our distributors to our five largest ODM and OEM customers collectively accounted for approximately 50% of our total revenue, and sales to our ten largest ODM and OEM customers collectively accounted for approximately 64% of our total revenue. We believe that our operating results for the foreseeable future will continue to depend on sales to a relatively small number of customers and end-customers. In the future, these customers may decide not to purchase our SoC solutions at all, may purchase fewer solutions than they did in the past or may alter their purchasing patterns. As substantially all of our sales to date have been made on a purchase order basis, these customers may cancel, change or delay product purchase commitments with little or no notice to us and without penalty and may make our revenue volatile from period to period. For example, GoPro, our largest OEM customer in fiscal year 2017, has used a competing solution in one of its recently introduced mainstream cameras, which had and will continue to have a significant negative impact on our revenue. Similarly, our customer DJI has recently introduced UAVs incorporating competing solutions that have reduced, and will continue to reduce, DJI's demand for our solutions. The loss of a significant customer, or substantial reduction in purchases by a significant customer, could happen again at any time and without notice, and such loss would likely harm our financial condition and results of operations. Moreover, because several of our largest OEM customers have a dominant position in their markets, a loss of a significant customer may not be easily replaced through sales to other customers in that market.

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

Our customers may cancel their orders, change production quantities or delay production. If we fail to accurately forecast demand for our solutions, revenue shortfalls or excess, obsolete or insufficient inventory could result.

Our customers typically do not provide us with firm, long-term purchase commitments. Substantially all of our sales are made on a purchase order basis, which permits our customers to cancel, change or delay their product purchase commitments with little or no notice to us and without penalty to them. Because production lead times often exceed the amount of time required by our customers to fill their orders, we often must build SoCs in advance of receiving orders from customers, relying on an imperfect demand forecast to project volumes and product mix.

Our SoCs are incorporated into products manufactured by or for our end customers, and as a result, demand for our solutions is influenced by the demand for our customers' products. Our ability to accurately forecast demand can be adversely affected by a number of factors, including inaccurate forecasting by our customers, miscalculations by our customers of their inventory requirements, changes in market conditions, adverse changes in our product order mix and fluctuating demand for our customers' products. For example, higher than normal customer inventory levels at GoPro significantly impacted our revenue in the fiscal quarter ended January 31, 2016 and in the first half of fiscal years 2017 and 2018. Higher than normal customer inventory levels can occur in the future. Even after an order is received, our customers may cancel these orders, request a decrease in production quantities or request a delay in the delivery of our solutions. Any such cancellation, decrease or delay subjects us to a number of risks, most notably that our projected sales will not materialize on schedule or at all, leading to unanticipated revenue shortfalls and excess or

obsolete inventory that we may be unable to sell to other customers.

Alternatively, if we are unable to project customer requirements accurately, we may not build enough SoCs, which could lead to delays in product shipments and lost sales opportunities in the near term, as well as force our customers to identify alternative sources, which could affect our ongoing relationships with these customers. We have in the past had customers significantly increase their requested production quantities with little or no advance notice. If we do not fulfill customer demands in a timely manner, our customers may cancel their orders and we may be subject to customer claims for cost of replacement. In addition, the rapid pace of innovation in our industry could render portions of our inventory obsolete. Excess or obsolete inventory levels could result in unexpected expenses or increases in our reserves that could adversely affect our business, operating results and financial condition. In addition, any significant future cancellations or deferrals of product orders could harm our margins, increase our write-offs due to product obsolescence and restrict our ability to fund our operations.

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

To date, our revenue has been primarily attributable to demand for our video and image processing SoCs in the camera market and infrastructure market. We initially focused on the infrastructure market, and then leveraged our knowledge and experience to design solutions for the camera market. We now derive substantially all of our revenue from the camera market, and our operating results are increasingly affected by trends in such market. These trends include demand for higher resolution, increased functionality, longer battery life, greater storage, connectivity requirements and computer vision technology, while accommodating more sophisticated standards for video compression. We may be unable to predict the timing or development of these markets with accuracy. For example, the proliferation of smartphones having the ability to capture high-quality video and still images has significantly impacted the camera market in a relatively short period of time and continues to impact this market. We have recently experienced declines in demand for our solutions in several consumer camera markets, including wearable cameras, virtual reality cameras and UAVs, which we expect will continue through at least the end of fiscal year 2019. A slower than expected adoption rate for computer vision technology in the Internet Protocol, or IP, security camera market, could slow the demand for our new solutions. In the automotive market, a slower than anticipated adoption of advanced driving assistance systems and autonomous driving functionality could reduce demand for our new computer vision solutions. If our key target markets, such as automotive cameras, IP security cameras and cameras for robotic applications, do not grow or develop in ways that we currently expect, demand for our video and image processing SoCs may not materialize as expected and our business and operating results could suffer.

If we fail to penetrate new markets, our revenue and financial condition could be harmed.

In the past several years, substantially all of our revenue was generated from sales of our products to OEMs and ODMs of HD video cameras. Our future revenue growth, if any, will depend in part on our ability to expand within the camera markets with our video and image processing SoC solutions, particularly in the professional IP security and home security and monitoring camera markets and the automotive camera market, as well as emerging markets such as the OEM automotive and robotics markets. Each of these markets presents distinct and substantial risks and, in many cases, requires us to develop new functionality or software to address the particular requirements of that market. For example, we expect that computer vision functionality will become an increasingly important requirement in many of our current and future markets, including automotive, IP security and robotics markets. As a result, we believe that our ability to develop advanced computer vision technology and gain customer acceptance of our technology will be critical to our future success. Development of products to address new markets, such as the OEM automotive and robotics markets, could negatively impact our ability to develop new products for our current markets, which may harm our financial condition, particularly in the near term. In addition, we anticipate that as we continue to move into new markets, such as the OEM automotive and robotics markets, we will likely face competition from larger competitors with greater resources and more history in these markets. If any of these markets do not develop as we currently anticipate or if we are unable to penetrate them successfully with our solutions, our revenue could decline and our financial condition will be negatively impacted.

Some of these markets are primarily served by only a few large, multinational OEMs with substantial negotiating power relative to us and, in some instances, with internal solutions that are competitive to our products. Meeting the technical requirements and securing design wins with any of these companies will require a substantial investment of our time and resources. We cannot assure you that we will secure design wins from these or other companies or that we will achieve meaningful revenue from the sales of our solutions into these markets. In addition, in these new markets, such as the OEM automotive and robotics markets, we will likely face competition from larger competitors with greater resources and more history in these markets.

If we fail to penetrate these or other new markets we are targeting, our financial condition would likely suffer.

If we fail to develop and introduce new or enhanced solutions on a timely basis, our ability to attract and retain customers could be impaired and our competitive position could be harmed.

We operate in a dynamic environment characterized by rapidly changing technologies and technological obsolescence. To compete successfully, we must design, develop, market and sell enhanced solutions that provide increasingly higher levels of performance and functionality and that meet the cost expectations of our customers. Our existing or future solutions could be rendered obsolete by the introduction of new products by our competitors; convergence of other markets, such as smartphones, with or into the camera market; the market adoption of products based on new or alternative technologies; the emergence of new industry standards for video compression; or the requirement of additional functionality included in our products, such as analytics or computer vision functionality. In addition, the markets for our solutions are characterized by frequent introduction of next-generation and new products, short product life cycles, increasing demand for added functionality and significant price competition. If we or our customers are unable to manage product transitions in a timely and cost-effective manner, our business and results of operations would suffer.

Our failure to anticipate or timely develop new or enhanced solutions in response to technological shifts could result in decreased revenue and our competitors achieving design wins that we sought. In particular, we may experience difficulties with product design, development of new software, manufacturing, marketing or qualification that could delay or prevent our development, introduction or marketing of new or enhanced solutions. In addition, for some markets, such as the automotive OEM market, we expect that we will need to establish relationships with third-party suppliers or software providers in order to effectively market our solutions to end-customers. Failure to establish these relationships could harm our ability to achieve design wins. Delays in product development could impair our relationships with our customers and negatively impact sales of our solutions under development. Moreover, it is possible that our customers may develop their own product or adopt a competitor's solution for products that they currently buy from us. If we fail to introduce new or enhanced solutions that meet the needs of our customers or penetrate new markets in a timely fashion, we will lose market share and our operating results will be adversely affected.

Fluctuations in our operating results on a quarterly and annual basis could cause the market price of our ordinary shares to decline.

Our revenue and operating results have fluctuated significantly from period to period in the past and are likely to do so in the future. In particular, our business tends to be seasonal with higher revenue in our third quarter as our customers typically increase their production to meet holiday shopping season or year-end demand for their products. We also may experience seasonally lower demand in our first quarter in the Asia-based portion of the IP security camera market as a result of industry seasonality and the impact of ODM and OEM factory closures associated with the Chinese New Year holiday. As a result, you should not rely on period-to-period comparisons of our operating results as an indication of our future performance. In future periods, our revenue and results of operations may be below the expectations of analysts and investors, which could cause the market price of our ordinary shares to decline.

Factors that may affect our operating results include:

- fluctuations in demand, sales cycles, product mix, and prices for our products;
- the forecasting, scheduling, rescheduling or cancellation of orders by our customers;
- shifts in consumer preferences and any resultant change in demand for video and image capture devices into which our solutions are incorporated;
- changes in the competitive dynamics of our markets, including new entrants or pricing pressures;
- delays in our customers' ability to manufacture and ship products that incorporate our solutions caused by internal and external factors beyond our control;
- our ability to successfully define, design and release new solutions in a timely manner that meet our customers' needs;
- changes in manufacturing costs, including wafer, test and assembly costs, mask costs, manufacturing yields and product quality and reliability;
- timely availability of adequate manufacturing capacity from our manufacturing subcontractors;
- the timing of product announcements by our competitors or by us;
- incurrence of research and development and related new products expenditures;
- write-downs of inventory for excess quantities and technological obsolescence;
- future accounting pronouncements and changes in accounting policies;
- volatility in our share price, which may lead to higher stock-based compensation expense;
- volatility in our effective tax rate;
- general socioeconomic and political conditions in the countries where we operate or where our products are sold or used; and
- costs associated with litigation, especially related to intellectual property.

Moreover, the semiconductor industry has historically been cyclical in nature, reflecting overall economic conditions as well as budgeting and buying patterns of consumers. We expect these cyclical conditions to continue. As a result, our quarterly operating results are difficult to predict, even in the near term. Our expense levels are relatively fixed in the short term and are based, in part, on our expectations of future revenue. If revenue levels are below our expectations, we may experience material impacts on our business, including declines in margins and profitability, or incur losses. For example, in the first half of fiscal year 2017 and in the fourth quarter of fiscal year 2018, our revenue declined 21% and 19%, respectively, compared to the same periods in the prior fiscal years. For the nine months ended October 31, 2018, our revenue declined 21% compared to the same period of last fiscal year and we incurred our first net losses since our initial public offering, or IPO, in 2012. The reduced revenues resulted in a substantial decline in cash flows from operating activities. We may experience similar declines in the future, which would harm our operating results.

Achieving design wins is subject to lengthy competitive selection processes that require us to incur significant costs. Even if we begin a product design, a customer may decide to cancel or change its product plans, resulting in no revenue from such expenditures.

We are focused on selling our video and image processing solutions to ODMs and OEMs for incorporation into their products at the design stage. These efforts to achieve design wins typically are lengthy, especially in emerging markets we intend to address such as the OEM automotive market, and in any case can require us to both incur design and development costs and dedicate scarce engineering resources in pursuit of a single customer opportunity. We may not prevail in the competitive selection process and, even when we do achieve a design win, we may never generate any revenue despite incurring development expenditures. For example, in the past we had achieved certain design wins and projected substantial future revenue as a result of such design wins. Subsequently, based on factors outside of our control, the applicable end customers abruptly cancelled the projects, with no notice to us, resulting in a loss of projected revenue. In addition, even if an OEM designs one of our SoC solutions into one of its products, we cannot be assured that we will secure new design wins from that OEM for future products. For example, GoPro and DJI have used competing solutions in recently introduced camera products, which had and will continue to have a significant negative impact on our revenue in the current fiscal year and beyond.

These risks are exacerbated by the fact that some of our end customers' products, particularly in the camera market, likely will have short life cycles. Further, even after securing a design win, we have experienced and may again experience delays in generating revenue from our solutions as a result of the lengthy product development cycle typically required, if we generate any revenue at all as a result of any such design win.

Our customers generally take a considerable amount of time to evaluate our solutions. The typical time from early engagement by our sales force to actual product introduction runs from nine to 12 months for the camera market and 12 to 24 months for the infrastructure market, though it will likely take significantly longer in new markets such as the OEM automotive and robotics markets. The delays inherent in these lengthy sales cycles increase the risk that a customer will decide to cancel, curtail, reduce or delay its product plans, causing us to lose anticipated sales. In addition, any delay or cancellation of a customer's plans could harm our financial results, as we may have incurred significant expense and generated no revenue. Finally, our customers' failure to successfully market and sell their products could reduce demand for our SoC solutions and harm our business, financial condition and results of operations. If we were unable to generate revenue after incurring substantial expenses to develop any of our solutions, our business would suffer.

The average selling prices of video and image processing solutions in our target markets have historically decreased over time and will likely do so in the future, which could harm our revenue and gross margins.

Average selling prices of semiconductor products in the markets we serve have historically decreased over time, and we expect such declines to continue to occur for our solutions over time. Our gross margins and financial results will suffer if we are unable to offset reductions in our average selling prices by reducing our costs, developing new or

enhanced SoC solutions on a timely basis with higher selling prices or gross margins, or increasing our sales volumes. Additionally, because we do not operate our own manufacturing, assembly or testing facilities, we may not be able to reduce our costs as rapidly as companies that operate their own facilities, and our costs may even increase, which could also reduce our gross margins. In the past, we have reduced the prices of our SoC solutions in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. Recently, we have experienced competitive pricing pressures at the low ends of the automotive aftermarket camera market and China-based IP security camera market. We expect that we will have to address pricing pressures again in the future, which could require us to reduce the prices of our SoC solutions and harm our operating results.

We expect competition to increase in the future, which could have an adverse effect on our revenue and market share.

The global semiconductor market in general, and the video and image processing markets in particular, are highly competitive. We compete in different target markets to various degrees on the basis of a number of competitive factors, including our solutions' performance, features, functionality, energy efficiency, size, ease with which our solution may be integrated into our customers' products, customer support, reliability and price, as well as on the basis of our reputation. We expect competition to increase and intensify as more and larger semiconductor companies enter our markets. We also expect that the trend among large OEMs to seek to develop their own semiconductor solutions will continue and expand, particularly in camera markets experiencing consolidation, such as the IP security market. In addition, as we move into new markets, such as the OEM automotive and robotics markets, we will face competition from larger competitors with longer histories in these markets. Increased competition could result in price pressure, reduced profitability and loss of market share, any of which could harm our business, revenue and operating results.

Our competitors range from large, international companies offering a wide range of semiconductor products to smaller companies specializing in narrow markets. In the wearable sports camera market, our primary competitors are vertically integrated divisions of camera device OEMs, including Sony Corporation, or Sony, and Panasonic Corporation, as well as HiSilicon Technologies Co., Ltd., or HiSilicon, which is owned by Huawei Technologies Co., and Socionext Inc., or Socionext, an entity created from the merger of the system LSI businesses of Fujitsu Ltd. and Panasonic Corporation. In the IP security camera market, our primary competitors include Fullhan Microelectronics Co., Ltd., Geo Semiconductor, Inc., Grain Media, Inc., which was recently acquired by Novatek Microelectronics Corp., or Novatek, HiSilicon, Intel Corporation, or Intel, Movidius Ltd., which was recently acquired by Intel, OmniVision Technologies, Inc., or OmniVision, Qualcomm Incorporated, or Qualcomm, Realtek Semiconductor Corp., Socionext, and Texas Instruments Incorporated, or Texas Instruments, as well as vertically integrated divisions of IP Security camera device OEMs, including Axis Communications AB and Sony. In the automotive camera market, we currently compete against Allwinner Technology Co., Ltd., Alpha Imaging Technology Corp., Core Logic, Inc., Novatek, NXP Semiconductors N.V., OmniVision, Qualcomm, Renesas Electronics Corporation, Sunplus Technology Co. Ltd., and Texas Instruments. Our primary competitors in the UAV camera market include HiSilicon, Intel, NVIDIA Corporation and Qualcomm. Our primary competitors in the infrastructure market include GigPeak, Inc., Intel, and Texas Instruments. Certain of our customers and suppliers also have divisions that produce products competitive with ours. In addition, certain third-party developers of technology competitive to our solutions have licensed their technology, including image signal processing and computer vision IP, which potentially enables a greater number of competitors to offer competitive solutions. We expect competition in our current markets to increase in the future as existing competitors improve or expand their product offerings and as potential new competitors enter these markets.

Our ability to compete successfully depends on elements both within and outside of our control, including industry and general economic trends. Many of our competitors are substantially larger, have greater financial, technical, marketing, distribution, customer support and other resources, are more established than we are and have significantly better brand recognition and broader product offerings which may enable them to develop and enable new technology into product solutions better or faster than us and to better withstand adverse economic or market conditions in the future. Our ability to compete will depend on a number of factors, including:

- our ability to anticipate market and technology trends and successfully develop solutions that meet market needs;
- our success in identifying and penetrating new markets, applications and customers;
- our ability to understand the price points and performance metrics of competing products in the marketplace;
- our solutions' performance and cost-effectiveness relative to that of competing products;
- our ability to gain access to leading design tools and product specifications at the same time as our competitors;
- our ability to develop and maintain relationships with key OEMs and ODMs;
- our products' effective implementation of video processing standards;
- our ability to protect our intellectual property;

- our ability to expand international operations in a timely and cost-efficient manner;
- our ability to deliver products in volume on a timely basis at competitive prices;
- our ability to support our customers' incorporation of our solutions into their products; and
- our ability to recruit design and application engineers with expertise in image video and image processing technologies and sales and marketing personnel.

Our competitors may also establish cooperative relationships among themselves or with third parties or acquire companies that provide similar products to ours. As a result, new competitors or alliances may emerge that could acquire significant market share. Any of these factors, alone or in combination with others, could harm our business and result in a loss of market share and an increase in pricing pressure.

We are dependent on sales of a limited number of video and image processing solutions, and a decline in market adoption of these solutions could harm our business.

We currently derive substantially all of our revenue from the sale of our SoCs for use in the camera market and we expect to do so for the next several years. As a result, continued market adoption of our SoC solutions in the camera market is critical to our future success. If demand for our SoC solutions were to decline, or demand for products incorporating our solutions declines, or does not continue to grow or does not grow as expected, our revenue would decline and our business would be harmed.

We do not have long-term supply contracts with our third-party manufacturing vendors, and they may not allocate sufficient capacity to us at reasonable prices to meet future demands for our solutions.

The semiconductor industry is subject to intense competitive pricing pressure from customers and competitors. Accordingly, any increase in the cost of our solutions, whether by adverse purchase price variances or adverse manufacturing cost variances, will reduce our gross margins and operating profit. We currently do not have long-term supply contracts with most of our primary third-party vendors, and we negotiate pricing with our main vendors on a purchase order-by-purchase order basis. Therefore, they are not obligated to perform services or supply product to us for any specific period, in any specific quantities, or at any specific price, except as may be provided in a particular purchase order. Availability of foundry capacity has in the recent past been limited due to strong demand. The ability of our foundry vendors to provide us with a product, which is sole sourced at each foundry, is limited by their available capacity, existing obligations and technological capabilities. Foundry capacity may not be available when we need it or at reasonable prices. None of our third-party foundry or assembly and test vendors has provided contractual assurances to us that adequate capacity will be available to us to meet our anticipated future demand for our solutions. Our foundry and assembly and test vendors may allocate capacity to the production of other companies' products while reducing deliveries to us on short notice. In particular, other companies that are larger and better financed than we are or that have long-term agreements with our foundry or assembly and test vendors may cause our foundry or assembly and test vendors to reallocate capacity to them, decreasing the capacity available to us. Converting or transferring manufacturing from a primary location or supplier to a backup foundry vendor could be expensive and would likely take at least two or more quarters. There are only a few foundries, including Samsung and Taiwan Semiconductor Manufacturing Co., Ltd., or TSMC, that are currently available for certain advanced process technologies that we utilize or may utilize, such as 10 or 7 nanometer. As we continue to develop solutions in advanced process nodes we will be increasingly dependent upon such foundries.

If, in the future, we enter into arrangements with suppliers that include additional fees to expedite delivery, nonrefundable deposits or loans in exchange for capacity commitments or commitments to purchase specified quantities over extended periods, such arrangements may be costly, reduce our financial flexibility and be on terms unfavorable to us, if we are able to secure such arrangements at all. Moreover, if we are able to secure foundry capacity, we may be obligated to use all of that capacity or incur penalties. These penalties could harm our financial results. To date, we have not entered into any such arrangements with our suppliers. If we need additional foundry or assembly and test subcontractors because of increased demand or the inability to obtain timely and adequate deliveries from our current vendors, we may not be able to do so cost-effectively, if at all.

A substantial portion of our revenue is processed through a single distributor and the loss of this distributor may cause disruptions in our shipments, which may adversely affect our operations and financial condition.

We sell a significant percentage of our solutions through a single distributor, Wintech Microelectronics Co., Ltd., or Wintech, which serves as our non-exclusive sales representative in Asia, other than Japan. Approximately 59%, 60% and 67% of our revenue was derived from sales through Wintech for the fiscal years ended January 31, 2018, 2017 and 2016, respectively. Approximately 57% of our revenue was derived from sales through Wintech for the nine months ended October 31, 2018. We anticipate that a significant portion of our revenue will continue to be derived from sales through Wintech in the foreseeable future. Our current agreement with Wintech is effective until September 2019, unless it is terminated earlier by either party for any or no reason with 60 days written notice or by failure of the breaching party to cure a material breach within 30 days following written notice of such material breach by the non-breaching party. Our agreement with Wintech will automatically renew for additional successive 12-month terms unless at least 60 days before the end of the then-current term either party provides written notice to the other party that it elects not to renew the agreement. Termination of the relationship with Wintech, either by us or by Wintech, could result in a temporary or permanent loss of revenue. We may not be successful in finding suitable alternative distributors on satisfactory terms, or at all, and this could adversely affect our ability to effectively sell our solutions in certain geographical locations or to certain end customers. Furthermore, Wintech, or any successor or other distributors we do business with, may face issues obtaining credit, which could impair their ability to make timely payments to us.

We are subject to risks associated with our distributors' product inventories.

We sell many of our products to customers through distributors who maintain their own inventory of our products for sale to dealers and end customers. We allow limited price adjustments on sales to distributors. Price adjustments may be effected by way of credits for future product or by cash payments to the distributor, either in arrears or in advance, using estimates based on historical transactions. Upon the adoption of ASC 606 on February 1, 2018, we recognize revenue on sales to distributors upon shipment and transfer of control (known as “sell-in” revenue recognition) based on the amount of consideration expected to be received. To the extent that the actual consideration received is materially different from estimated variable consideration recognized, we may be required to adjust revenue in subsequent periods.

If our distributors are unable to sell an adequate amount of their inventory of our products in a given quarter to dealers and end customers or if they decide to decrease their inventories for any reason, such as adverse global economic conditions or a downturn in technology spending, our sales to these distributors and our revenues may decline. We also face the risk that our distributors may purchase, or for other reasons accumulate, inventory levels of our products in any particular quarter in excess of future anticipated sales to end customers. If such sales do not occur in the time frame anticipated by these distributors for any reason, these distributors may substantially decrease the amount of product they order from us in subsequent periods until their inventory levels realign with end-customer demand, which would harm our business and could adversely affect our revenues in such subsequent periods. Our reserve estimates associated with products stocked by our distributors are based largely on reports that our distributors provide to us on a weekly or monthly basis. To date, we believe this resale and channel inventory data have been generally accurate. To the extent that these data are inaccurate or not received in a timely manner, we may not be able to make reserve estimates for future periods accurately or at all.

Deterioration of the financial conditions of our customers could adversely affect our operating results.

Deterioration of the financial condition of our distributors or customers could adversely impact our collection of accounts receivable. We regularly review the collectability and creditworthiness of our distributors and customers to determine an appropriate allowance for doubtful receivables. Based on our review of our distributors and customers, we currently have only immaterial reserves for uncollectible accounts. If our uncollectible accounts, however, were to exceed our current or future allowance for doubtful receivables, our operating results would be negatively impacted.

The loss of any of our key personnel could seriously harm our business.

We believe our future success depends in large part upon the continuing services of the members of our senior management team and various engineering and other technical personnel. If one or more of our senior executives or other key personnel are unable or unwilling to continue in their present positions, we may not be able to replace them easily or at all, our business may be disrupted, and our financial condition and results of operations may be materially and adversely affected. In addition, if any member of our senior management team or any of our other key personnel joins a competitor or forms a competing company, we may experience material disruption of our operations and development plans and lose customers, know-how and key professionals and staff members, and we may incur increased operating expenses as the attention of other senior executives is diverted to recruit replacements for key personnel.

We rely on highly skilled personnel and, if we are unable to hire, retain or motivate key personnel, we may not be able to grow effectively.

Our performance largely depends on the talents and efforts of highly skilled individuals. Our future success depends on our continuing ability to identify, hire, develop, motivate, and retain highly skilled personnel for all areas of our organization. Our industry is characterized by high demand and intense competition for talent. The pool of qualified candidates is limited, particularly in Silicon Valley and parts of Asia for very-large-scale integration, or VLSI, and

computer vision engineers, and certain of our competitors and potential competitors with greater resources have directly targeted our employees. In addition, our compensation arrangements, such as our equity award programs, may not always be successful in attracting new employees and retaining and motivating our existing employees. Our continued ability to compete effectively depends on our ability to attract new employees and to retain and motivate our existing employees.

If we do not generate revenue growth, we may not be able to execute our business plan and our operating results could suffer.

You should not rely on our revenue growth, gross margins or operating results for any prior quarterly or annual periods as an indication of our future operating performance. In the past, we have experienced significant growth in a short period of time. Our revenue increased from $21.5 million in fiscal year 2008 to $316.4 million in fiscal year 2016. Recently, however, we have not sustained this growth rate. Our revenue decreased to $310.3 million in fiscal year 2017 and to $295.4 million in fiscal year 2018. For the nine months ended October 31, 2018, our revenue decreased to $176.7 million resulting in the first net losses since our IPO in 2012. We continue to invest in the development of new technology and solutions and expect our research and development expenditures to increase compared to prior periods. Accordingly, if we are unable to generate or maintain adequate revenue growth, our financial results could suffer and our stock price could decline.

If we are unable to manage any future growth, we may not be able to execute our business plan and our operating results could suffer.

Our business has grown rapidly. Our future operating results depend to a large extent on our ability to successfully manage any expansion and growth, including the challenges of managing a company with headquarters in the United States and the majority of its employees in Asia. We are increasing our investment in research and development and other functions to grow our business and address new markets, such as the OEM automotive and robotics markets. To manage our growth successfully and handle the responsibilities of being a public company, we believe we must effectively, among other things:

- recruit, hire, train and manage additional qualified engineers for our research and development activities, particularly in our offices in Asia and especially for the positions of semiconductor design and systems, applications engineering and computer vision development;
- add additional sales and business development personnel;
- add additional finance and accounting personnel;
- maintain and improve our administrative, financial and operational systems, procedures and controls; and
- enhance our information technology support for enterprise resource planning and design engineering by adapting and expanding our systems and tool capabilities, and properly training new hires as to their use.

We are likely to incur the costs associated with these increased investments earlier than some of the anticipated benefits, and the return on these investments, if any, may be lower, may develop more slowly than we expect or may not materialize. In addition, development of products to address emerging markets, such as the OEM automotive and robotics markets, could negatively impact our ability to develop new products for our current markets, which may harm our financial condition, particularly in the near term.

If we are unable to manage our growth effectively, we may not be able to take advantage of market opportunities or develop new solutions, and we may fail to satisfy customer product or support requirements, maintain product quality, execute our business plan or respond to competitive pressures.

While we intend to continue to invest in research and development, we may be unable to make the substantial investments that are required to remain competitive in our business.

The semiconductor industry requires substantial investment in research and development in order to bring to market new and enhanced solutions. Our research and development expense was $115.5 million, $101.2 million and $82.9 million in fiscal years 2018, 2017 and 2016, respectively. For the nine months ended October 31, 2018, our research and development expense was $95.4 million. We expect to increase our research and development expenditures as compared to prior periods as part of our strategy of focusing on the development of innovative video and image processing solutions with increased functionality, such as analytics or computer vision capabilities, and as we target

new markets, such as the automotive OEM and robotics markets. We are unable to predict whether we will have sufficient resources to maintain the level of investment in research and development required to remain competitive. For example, development in the latest process nodes, such as 10nm and 7nm, can cost significantly more than required to develop in larger process nodes, such as 28nm. This added cost could prevent us from being able to maintain a technology advantage over larger competitors that have significantly more resources to invest in research and development. In addition, we cannot assure you that the technologies which are the focus of our research and development expenditures will become commercially successful or generate any revenue.

We may have difficulty accurately predicting our future revenue and appropriately budgeting our expenses.

The rapidly evolving nature of the markets in which we sell our solutions, combined with substantial uncertainty concerning how these markets may develop and other factors beyond our control, limits our ability to accurately forecast quarterly or annual revenue. In addition, because we record a significant portion of our revenue from sales when we have received notification from our distributors that they have sold our products, some of the revenue we record in a quarter may be derived from sales of products shipped to our distributors during previous quarters. This revenue recognition methodology limits our ability to forecast quarterly or annual revenue accurately. We are currently expanding our staffing and increasing our expenditures in anticipation of future revenue growth. If our revenue does not increase as anticipated, we could incur significant losses due to our higher expense levels if we are not able to decrease our expenses in a timely manner to offset any shortfall in future revenue.

We may experience difficulties demonstrating the value to customers of newer, higher priced and higher margin solutions if they believe existing solutions are adequate to meet end customer expectations.

As we develop and introduce new solutions, we face the risk that customers may not value or be willing to bear the cost of incorporating these newer solutions into their products, particularly if they believe their customers are satisfied with current solutions. Regardless of the improved features or superior performance of the newer solutions, customers may be unwilling to adopt our new solutions due to design or pricing constraints. Owing to the extensive time and resources that we invest in developing new solutions, if we are unable to sell customers new generations of our solutions, our revenue could decline and our business, financial condition, operating results and cash flows could be negatively affected.

The complexity of our solutions could result in unforeseen delays or expenses from undetected defects, errors or bugs in hardware or software which could reduce the market adoption of our new solutions, damage our reputation with current or prospective customers and adversely affect our operating costs.

Highly complex SoC solutions such as ours frequently contain defects, errors and bugs when they are first introduced or as new versions are released. We have in the past and may in the future experience these defects, errors and bugs. If any of our solutions have reliability, quality or compatibility problems, we may not be able to successfully correct these problems in a timely manner or at all. In addition, if any of our proprietary features contain defects, errors or bugs when first introduced or as new versions of our solutions are released, we may be unable to timely correct these problems. Consequently, our reputation may be damaged and customers may be reluctant to buy our solutions, which could harm our ability to retain existing customers and attract new customers, and could adversely affect our financial results. In addition, these defects, errors or bugs could interrupt or delay sales to our customers. If any of these problems are not found until after we have commenced commercial production of a new product, we may incur significant additional development costs and product recall, repair or replacement costs. These problems may also result in claims against us by our customers or others.

Camera manufacturers incorporate components supplied by multiple third parties, and a supply shortage or delay in delivery of these components could delay orders for our solutions by our customers.

Our customers purchase components used in the manufacture of their cameras from various sources of supply, often involving several specialized components, including lenses, sensors, and memory chips. Any supply shortage or delay in delivery by third-party component suppliers, or a third-party supplier’s cessation or shut down of its business, may prevent or delay production of our customers’ products. In addition, replacement or substitute components may not be available on commercially reasonable terms, or at all. As a result of delays in delivery or supply shortages of third-party components, orders for our solutions may be delayed or canceled and our business may be harmed. For example, a disruption in the availability of image sensors from Sony Corporation as a result of the April 14, 2016 Kumamoto, Japan earthquake impacted our customers’ ability to build or launch cameras and, as a result, negatively impacted the timing and scope of demand for our SoCs in the second and third quarters of fiscal year 2017. Similarly,

our ability to generate design wins in some markets, such as the automotive OEM market, may require us to collaborate with third-party software suppliers in order to offer a complete solution to customers. Our inability to successfully collaborate with such third-party suppliers could harm our ability to achieve design wins and harm our business. Errors or defects within a camera system or in the manner in which the various components interact could prevent or delay production of our customers' products, which could harm our business.

We outsource our wafer fabrication, assembly and testing operations to third parties, and if these parties fail to produce and deliver our products according to requested demands in specification, quantity, cost and time, our reputation, customer relationships and operating results could suffer.

We rely on third parties for substantially all of our manufacturing operations, including wafer fabrication, assembly and testing. Currently, the majority of our SoCs are supplied by Samsung in facilities located in Austin, Texas and South Korea, from whom we have the option to purchase both fully assembled and tested products as well as tested die in wafer form for assembly. Samsung subcontracts the assembly and initial testing of the assembled chips it supplies to us to Signetics Corporation and STATS ChipPAC Ltd. In the case of purchases of tested die from Samsung, we contract the assembly to Advanced Semiconductor Engineering, Inc., or ASE. We also have products supplied by Global UniChip Corporation, or GUC, in Taiwan, from whom we purchase fully assembled and tested products. The wafers used by GUC in the assembly of our products are manufactured by TSMC in Taiwan. The assembly is done by GUC subcontracted assembly suppliers ASE, and Powertech Technology Inc, or PTI. Final testing of all of our products is handled by King Yuan Electronics Co., Ltd. or Sigurd Corporation under the supervision of our engineers. We depend on these third parties to supply us with material of a requested quantity in a timely manner that meets our standards for yield, cost and manufacturing quality. We do not have any long-term supply agreements with any of our manufacturing suppliers. If one or more of these vendors terminates its relationship with us, or if we encounter any problems with our manufacturing supply chain, our ability to ship our solutions to our customers on time and in the quantity required would be adversely affected, which in turn could cause an unanticipated decline in our sales and damage our customer relationships.

If our foundry vendors do not achieve satisfactory yields or quality, our reputation and customer relationships could be harmed.

The fabrication of our video and image processing SoC solutions is a complex and technically demanding process. Minor deviations in the manufacturing process can cause substantial decreases in yields, and in some cases, cause production to be suspended. Our foundry vendors, from time to time, experience manufacturing defects and reduced manufacturing yields, including in the fabrication of our SoCs. Changes in manufacturing processes or the inadvertent use of defective or contaminated materials by our foundry vendors could result in lower than anticipated manufacturing yields or unacceptable performance of our SoCs. Many of these problems are difficult to detect at an early stage of the manufacturing process and may be time consuming and expensive to correct. Poor yields from our foundry vendors, or defects, integration issues or other performance problems in our solutions, could cause us significant customer relations and business reputation problems, harm our financial results and give rise to financial or other damages to our customers. Our customers might consequently seek damages from us for their losses. A product liability claim brought against us, even if unsuccessful, would likely be time consuming and costly to defend.

Each of our SoC solutions is manufactured at a single location. If we experience manufacturing problems at a particular location, we would be required to transfer manufacturing to a new location or supplier. Converting or transferring manufacturing from a primary location or supplier to a backup fabrication facility could be expensive and could take two or more quarters. During such a transition, we would be required to meet customer demand from our then-existing inventory, as well as any partially finished goods that could be modified to the required product specifications. We do not seek to maintain sufficient inventory to address a lengthy transition period because we believe it is uneconomical to keep more than minimal inventory on hand. As a result, we may not be able to meet customer needs during such a transition, which could delay shipments, cause production delays, result in a decline in our sales and damage our customer relationships.

We may experience difficulties in transitioning to new wafer fabrication process technologies or in achieving higher levels of design integration, which may result in reduced manufacturing yields, delays in product deliveries and increased costs.

We aim to use the most advanced manufacturing process technology appropriate for our products that is available from our third-party foundries. As a result, we periodically evaluate the benefits of migrating our solutions to smaller geometry process technologies in order to improve performance and reduce costs. We believe this strategy will help us remain competitive. These ongoing efforts require us from time to time to modify the manufacturing processes for our products and to redesign some products, which in turn may result in delays in product deliveries. We may face difficulties, delays and increased expense as we transition our products to new processes, such as the 10nm or 7nm process node, and potentially to new foundries. We depend on Samsung and TSMC, as the principal foundries for our products, to transition to new processes successfully. We cannot assure you that Samsung or TSMC will be able to effectively manage such transitions or that we will be able to maintain our relationship with Samsung or TSMC or develop relationships with new foundries. Moreover, as we utilize more advanced process nodes beyond 10nm, we are increasingly dependent upon Samsung and TSMC, who are two of the few foundries currently available for certain advanced process technologies. If we or our foundry vendors experience significant delays in transitioning to smaller geometries or fail to efficiently implement transitions, we could experience reduced manufacturing yields, delays in product deliveries and increased costs, all of which could harm our relationships with our customers and our operating results. As new processes become more prevalent, we expect to continue to integrate greater levels of functionality, as well as more end-customer and third-party intellectual property, into our solutions. We may not be able to achieve higher levels of design integration or deliver new integrated solutions on a timely basis.

We rely on third-party vendors to supply software development tools to us for the development of our new products, and we may be unable to obtain the tools necessary to develop or enhance new or existing products.

We rely on third-party software development tools to assist us in the design, simulation and verification of new products or product enhancements. To bring new products or product enhancements to market in a timely manner, or at all, we need software development tools that are sophisticated enough or technologically advanced enough to complete our design, simulations and verifications. In the future, the design requirements necessary to meet consumer demands for more features and greater functionality from our solutions may exceed the capabilities of available software development tools. Unavailability of software development tools may result in our missing design cycles or losing design wins, either of which could result in a loss of market share or negatively impact our operating results.

Because of the importance of software development tools to the development and enhancement of our solutions, our relationships with leaders in the computer-aided design industry, including Cadence Design Systems, Inc., Mentor Graphics Corporation and Synopsys, Inc., are critical to us. We have invested significant resources to develop relationships with these industry leaders. We believe that utilizing next-generation development tools to design, simulate and verify our products will help us remain at the forefront of the video compression market, and develop solutions that utilize leading-edge technology on a rapid basis. If these relationships are not successful, we may be unable to develop new products or product enhancements in a timely manner, which could result in a loss of market share, a decrease in revenue or negatively impact our operating results.

Our failure to adequately protect our intellectual property rights could impair our ability to compete effectively or defend ourselves from litigation, which could harm our business, financial condition and results of operations.

Our success depends, in part, on our ability to protect our intellectual property. We rely primarily on patent, copyright, trademark and trade secret laws, as well as confidentiality and non-disclosure agreements and other contractual protections, to protect our proprietary technologies and know-how, all of which offer only limited protection. The steps we have taken to protect our intellectual property rights may not be adequate to prevent misappropriation of our proprietary information or infringement of our intellectual property rights, and our ability to prevent such misappropriation or infringement is uncertain, particularly in countries outside of the United States. The failure of our patents to adequately protect our technology might make it easier for our competitors to offer similar products or technologies, which would harm our business. For example, our patents and patent applications could be opposed, contested, circumvented, designed around by our competitors or be declared invalid or unenforceable in judicial or administrative proceedings. Our foreign patent protection is generally not as comprehensive as our U.S. patent protection and may not protect our intellectual property in some countries where our products are sold or may be sold in the future. Many U.S.-based companies have encountered substantial intellectual property infringement in foreign countries, including countries where we sell products. Even if foreign patents are granted, effective enforcement in foreign countries may not be available. For example, the legal environment relating to intellectual property protection in China is relatively weak, often making it difficult to create and enforce such rights. We may not be able to effectively protect our intellectual property rights in China or elsewhere. If such an impermissible use of our intellectual property or trade secrets were to occur, our ability to sell our solutions at competitive prices may be adversely affected and our business, financial condition, operating results and cash flows could be materially and adversely affected.

The legal standards relating to the validity, enforceability and scope of protection of intellectual property rights are uncertain and evolving. We cannot assure you that others will not develop or patent similar or superior technologies, products or services, or that our patents, trademarks and other intellectual property will not be challenged, invalidated or circumvented by others.

Unauthorized copying or other misappropriation of our proprietary technologies could enable third parties to benefit from our technologies without paying us for doing so, which could harm our business. Monitoring unauthorized use of our intellectual property is difficult and costly. Although we are not aware of any unauthorized use of our intellectual

property in the past, it is possible that unauthorized use of our intellectual property may have occurred or may occur without our knowledge. We cannot assure you that the steps we have taken will prevent unauthorized use of our intellectual property. Our failure to effectively protect our intellectual property could reduce the value of our technology in licensing arrangements or in cross-licensing negotiations.

We may in the future need to initiate infringement claims or litigation in order to try to protect our intellectual property rights. Litigation, whether we are a plaintiff or a defendant, can be expensive, time-consuming and may divert the efforts of our technical staff and management, which could harm our business, whether or not such litigation results in a determination favorable to us. Litigation also puts our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not being issued. Additionally, any enforcement of our patents or other intellectual property may provoke third parties to assert counterclaims against us. If we are unable to protect our proprietary rights or if third parties independently develop or gain access to our or similar technologies, our business, revenue, reputation and competitive position could be harmed.

Third parties' assertions of infringement of their intellectual property rights could result in our having to incur significant costs and cause our operating results to suffer.

The semiconductor industry is characterized by vigorous protection and pursuit of intellectual property rights and positions, which has resulted in protracted and expensive litigation for many companies. Certain of our customers have received, and we expect, particularly to the extent we gain greater market visibility, that in the future we may receive, communications from others alleging our infringement of their patents, trade secrets or other intellectual property rights. In addition, certain of our end customers have been the subject of lawsuits alleging infringement of intellectual property rights by products incorporating our solutions, including the assertion that the alleged infringement may be attributable, at least in part, to our technology. Lawsuits resulting from such allegations could subject us to significant liability for damages and invalidate our proprietary rights, though this has not occurred to date. Any potential intellectual property litigation also could force us to do one or more of the following:

- stop selling products or using technology that contain the allegedly infringing intellectual property;
- lose the opportunity to license our technology to others or to collect royalty payments based upon successful protection and assertion of our intellectual property against others;
- incur significant legal expenses;
- pay substantial damages to the party whose intellectual property rights we may be found to be infringing;
- redesign those products that contain the allegedly infringing intellectual property; or
- attempt to obtain a license to the relevant intellectual property from third parties, which may not be available on reasonable terms or at all.

Any significant impairment of our intellectual property rights from any litigation we face could harm our business and our ability to compete.

Any potential dispute involving our patents or other intellectual property could affect our customers, which could trigger our indemnification obligations to them and result in substantial expense to us.

In any potential dispute involving our patents or other intellectual property, our customers could also become the target of litigation. Certain of our customers have received notices from third parties claiming to have patent rights in certain technology and inviting our customers to license this technology, and certain of our end customers have been the subject of lawsuits alleging infringement of patents by products incorporating our solutions, including the assertion that the alleged infringement may be attributable, at least in part, to our technology. Because we indemnify our customers for intellectual property claims made against them for products incorporating our technology, any litigation could trigger technical support and indemnification obligations under some of our license agreements, which could result in substantial expense to us. Although we have not incurred significant indemnity expenses related to intellectual property claims to date, we anticipate that we will receive requests for indemnity in the future pursuant to our license agreements with our customers. In addition, other customers or end customers with whom we do not have formal agreements requiring us to indemnify them may ask us to indemnify them if a claim is made as a condition to awarding future design wins to us. Because some of our ODMs and OEMs are larger than we are and have greater resources than we do, they may be more likely to be the target of an infringement claim by third parties than we would be, which could increase our chances of becoming involved in a future lawsuit. Although we have not yet been subject to such claims, if any such claims were to succeed, we might be forced to pay damages on behalf of our ODMs or OEMs that could increase our expenses, disrupt our ability to sell our solutions and reduce our revenue. In addition to the time and expense required for us to supply support or indemnification to our customers, any such litigation could severely disrupt or shut down the business of our customers, which in turn could hurt our relations with our customers and cause the sale of our products to decrease.

A breach of our security systems may have a material adverse effect on our business.

Our security systems are designed to maintain the physical security of our facilities and information systems and protect our customers', suppliers' and employees' confidential information. Accidental or willful security breaches or other unauthorized access by third parties to our facilities or our information systems or the existence of computer viruses in our data or software could expose us to a risk of information loss and misappropriation of proprietary and confidential information. Security breaches, computer malware and computer hacking attacks have become more prevalent and sophisticated. Experienced computer programmers and hackers may be able to penetrate our security controls and misappropriate or compromise our confidential information or that of third parties or create system disruptions. Computer programmers and hackers also may be able to develop and deploy viruses, worms and other malicious software programs that attack our information systems and cause disruptions of our business. Data security breaches may also result from non-technical means, for example, actions by an employee. Any theft or misuse of this information could result in, among other things, damage to our reputation, allegations by our customers that we have not performed our contractual obligations, litigation by affected parties and possible financial obligations for liabilities and damages related to the theft or misuse of this information, any of which could have a material adverse effect on our business, financial condition, our reputation, and our relationships with our customers and partners. We also rely on a number of third-party "cloud-based" service providers of corporate infrastructure services relating to, among other things, human resources, electronic communication services and some finance functions, and we are, of necessity, dependent on the security systems of these providers. Any security breaches or other unauthorized access by third parties to the systems of our cloud-based service providers or the existence of computer viruses in their data or software could expose us to a risk of information loss and misappropriation of confidential information. Since the techniques used to obtain unauthorized access or to sabotage systems change frequently and are often not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures.

We are subject to governmental laws, regulations and other legal obligations related to privacy and data protection.

The legislative and regulatory framework for privacy and data protection issues worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. We collect personally identifiable information, or PII, and other data as part of our business processes and activities. This data is subject to a variety of U.S. and international laws and regulations, including oversight by various regulatory or other governmental bodies. Many foreign countries and governmental bodies, including the European Union and other relevant jurisdictions where we conduct business, have laws and regulations concerning the collection and use of PII and other data obtained from their residents or by businesses operating within their jurisdictions that are currently more restrictive than those in the U.S. For example, in May 2016, the European Union adopted the General Data Protection Regulation that imposed more stringent data protection requirements and provided for greater penalties for noncompliance beginning in May 2018. Any inability, or perceived inability, to adequately address privacy and data protection concerns, even if unfounded, or to comply with applicable laws, regulations, policies, industry standards, contractual obligations or other legal obligations, could result in additional cost and liability to us, damage our reputation and adversely affect our business.

We rely on third parties to provide services and technology necessary for the operation of our business. Any failure of one or more of our vendors, suppliers or licensors to provide such services or technology could harm our business.

We rely on third-party vendors to provide critical services, including, among other things, services related to accounting, human resources, information technology and network monitoring that we cannot or do not create or provide ourselves. We depend on these vendors to ensure that our corporate infrastructure will consistently meet our business requirements. The ability of these third-party vendors to successfully provide reliable and high-quality services is subject to technical and operational uncertainties that are beyond our control. While we may be entitled to damages if our vendors fail to perform under their agreements with us, our agreements with these vendors limit the amount of damages we may receive. In addition, we do not know whether we will be able to collect on any award of damages or that these damages would be sufficient to cover the actual costs we would incur as a result of any vendor's

failure to perform under its agreement with us. Upon expiration or termination of any of our agreements with third-party vendors, we may not be able to replace the services provided to us in a timely manner or on terms and conditions, including service levels and cost, that are favorable to us, and a transition from one vendor to another vendor could subject us to operational delays and inefficiencies until the transition is complete.

Additionally, we incorporate third-party technology into some of our products, and we may do so in future products. The operation of our products could be impaired if errors occur in the third-party technology we use. It may be more difficult for us to correct any errors in a timely manner, if at all, because the development and maintenance of the technology is not within our control. We cannot assure you that these third parties will continue to make their technology, or improvements to the technology, available to us, or that they will continue to support and maintain their technology. Further, due to the limited number of vendors of some types of technology, it may be difficult to obtain new licenses or replace existing technology. Any impairment of the technology of or our relationship with these third parties could harm our business.

Failure to comply with the U.S. Foreign Corrupt Practices Act, or FCPA, and similar laws associated with our activities outside of the United States could subject us to penalties and other adverse consequences.

We face significant risks if we fail to comply with the FCPA and other anti-corruption laws that prohibit improper payments or offers of payment to foreign governments and political parties by us for the purpose of obtaining or retaining business. In many foreign countries, particularly in countries with developing economies, it may be a local custom that businesses operating in such countries engage in business practices that are prohibited by the FCPA or other applicable laws and regulations. Although we implemented an FCPA compliance program, we cannot assure you that all of our employees and agents, as well as those companies to which we outsource certain of our business operations, will not take actions in violation of our policies and applicable law, for which we may be ultimately held responsible. Any violation of the FCPA or other applicable anti-corruption laws could result in severe criminal or civil sanctions and, in the case of the FCPA, suspension or debarment from U.S. government contracting, which could have a material and adverse effect on our reputation, business, financial condition, operating results and cash flows.

We, our customers and third-party contractors are subject to increasingly complex environmental regulations and compliance with these regulations may delay or interrupt our operations and adversely affect our business.

We face increasing complexity in our procurement, design, and research and development operations as a result of requirements relating to the materials composition of our products, including the European Union's, or EU's, Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, or RoHS, directive, which restricts the content of lead and certain other hazardous substances in specified electronic products put on the market in the EU and similar Chinese legislation relating to marking of electronic products which became effective in March 2007. Failure to comply with these and similar laws and regulations could subject us to fines, penalties, civil or criminal sanctions, contract damage claims, and take-back of non-compliant products, which could harm our business, reputation and operating results. The passage of similar requirements in additional jurisdictions or the tightening of these standards in jurisdictions where our products are already subject to such requirements could cause us to incur significant expenditures to make our products compliant with new requirements, or could limit the markets into which we may sell our products.

Some of our operations, as well as the operations of our contract manufacturers and foundry vendors and other suppliers, are also regulated under various other federal, state, local, foreign and international environmental laws and requirements, including those governing, among other matters, the management, disposal, handling, use, labeling of, and exposure to hazardous substances, and the discharge of pollutants into the air and water. Liability under environmental laws can be joint and several and without regard to comparative fault. We cannot assure you that violations of these laws will not occur in the future, as a result of human error, accident, equipment failure or other causes. Environmental laws and regulations have increasingly become more stringent over time. We expect that our products and operations will be affected by new environmental requirements on an ongoing basis, which will likely result in additional costs, which could adversely affect our business.

Our failure to comply with present and future environmental, health and safety laws could cause us to incur substantial costs, result in civil or criminal fines and penalties and decreased revenue, which could adversely affect our operating results. Failure by our foundry vendors or other suppliers to comply with applicable environmental laws and requirements could cause disruptions and delays in our product shipments, which could adversely affect our relations with our ODMs and OEMs and adversely affect our business and results of operations.

Regulations related to "conflict minerals" may force us to incur additional expenses, may make our supply chain more complex and may result in damage to our reputation with customers.

Pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, the Securities and Exchange Commission, or the SEC, has adopted requirements for companies that use certain minerals and metals, known as conflict minerals, in their products, whether or not these products are manufactured by third

parties. These requirements require companies to perform due diligence, disclose and report whether or not such minerals originate from the Democratic Republic of Congo and adjoining countries. These requirements could adversely affect the sourcing, availability and pricing of minerals used in the manufacture of semiconductor devices, including our products. While these requirements continue to be subject to administrative uncertainty, we have incurred, and will continue to incur, additional costs to comply with the disclosure requirements, including costs related to determining the source of any of the relevant minerals and metals used in our products. Since our supply chain is complex, we may not be able to sufficiently verify the origins for these minerals and metals used in our products through the due diligence procedures that we implement, which may harm our reputation. In such event, we may also face difficulties in satisfying customers who require that all of the components of our products are certified as conflict mineral free.

We are subject to warranty and product liability claims and to product recalls.

From time to time, we are subject to warranty claims that may require us to make significant expenditures to defend these claims or pay damage awards. In the future, we may also be subject to product liability claims resulting from failure of our solutions or if products we design, manufacture, or sell, cause personal injury or property damage, even where the cause is unrelated to product defects. These risks will likely increase as our products are introduced into new devices, market, or applications, including autonomous and semi-autonomous automotive, UAV and robotic uses. In the event of a warranty claim, we may also incur costs if we compensate the affected customer. We maintain product liability insurance, but this insurance is limited in amount and subject to significant deductibles. There is no guarantee that our insurance will be available or adequate to protect against all claims. We also may incur costs and expenses relating to a recall of one of our customers' products containing one of our devices. The process of identifying a recalled product in consumer devices that have been widely distributed may be lengthy and require significant resources, and we may incur significant replacement costs, contract damage claims from our customers and reputational harm. Costs or payments made in connection with warranty and product liability claims and product recalls could harm our financial condition and results of operations, as well as harm our reputation and cause the market value of our ordinary shares to decline.

Rapidly changing industry standards could make our video and image processing solutions obsolete, which would cause our operating results to suffer.

We design our video and image processing solutions to conform to video compression standards, including MPEG-2, H.264 and H.265, set by industry standards setting bodies such as ITU-T Video Coding Experts Group and the ISO/IEC Moving Picture Experts Group. Generally, our solutions comprise only a part of a camera or broadcast infrastructure equipment device. All components of these devices must uniformly comply with industry standards in order to operate efficiently together. We depend on companies that provide other components of the devices to support prevailing industry standards. Many of these companies are significantly larger and more influential in driving industry standards than we are. Some industry standards may not be widely adopted or implemented uniformly, and competing standards may emerge that may be preferred by our customers or by consumers. If our customers or the suppliers that provide other device components adopt new or competing industry standards with which our solutions are not compatible, or if the industry groups fail to adopt standards with which our solutions are compatible, our existing solutions would become less desirable to our customers. As a result, our sales would suffer, and we could be required to make significant expenditures to develop new SoC solutions. For example, if the new H.265 video compression standard is not broadly adopted by our customers or potential customers, sales of our H.265 compliant solutions would suffer and we may be required to expend substantial resources to comply with an alternative video compression standard. In addition, existing standards may be challenged as infringing upon the intellectual property rights of other companies or may be superseded by new innovations or standards.

Products for communications applications are based on industry standards that are continually evolving. Our ability to compete in the future will depend on our ability to identify and ensure compliance with these evolving industry standards, including any new video compression standards. The emergence of new industry standards could render our solutions incompatible with products developed by other suppliers. As a result, we could be required to invest significant time and effort and to incur significant expense to redesign our solutions to ensure compliance with relevant standards. If our solutions are not in compliance with prevailing industry standards for a significant period of time, we could miss opportunities to achieve crucial design wins, which could harm our business.

We are subject to the cyclical nature of the semiconductor industry.

The semiconductor industry is highly cyclical and is characterized by constant and rapid technological change, rapid product obsolescence, price erosion, evolving standards, short product life cycles and wide fluctuations in product supply and demand. The industry experienced a significant downturn during the recent global recession. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels

and accelerated erosion of average selling prices. Any future downturns could harm our business and operating results. Furthermore, any significant upturn in the semiconductor industry could result in increased competition for access to third-party foundry and assembly capacity. We are dependent on the availability of this capacity to manufacture and assemble our SoC solutions. None of our third-party foundry or assembly contractors has provided assurances that adequate capacity will be available to us in the future.

The use of open source software in our products, processes and technology may expose us to additional risks and compromise our proprietary intellectual property.

Our products, processes and technology sometimes utilize and incorporate software that is subject to an open source license. Open source software is typically freely accessible, usable and modifiable. Certain open source software licenses, such as the GNU General Public License, require a user who intends to distribute the open source software as a component of the user's software to disclose publicly part or all of the source code to the user's software. In addition, certain open source software licenses require the user of such software to make any derivative works of the open source code available to others on terms unfavorable to us or at no cost. This can subject previously proprietary software to open source license terms.

While we monitor the use of open source software in our products, processes and technology and try to ensure that no open source software is used in such a way as to require us to disclose the source code to the related product, processes or technology when we do not wish to do so, such use could inadvertently occur. Additionally, if a third-party software provider has incorporated certain types of open source software into software we license from such third-party for our products, processes or technology, we could, under certain circumstances, be required to disclose the source code to our products, processes or technology. This could harm our intellectual property position and our business, results of operations and financial condition.

Some of our operations and a significant portion of our customers and our subcontractors are located outside of the United States, which subjects us to additional risks, including increased complexity and costs of managing international operations and geopolitical instability.

We have research and development design centers and business development offices in China, Japan, Italy, South Korea and Taiwan, and we expect to continue to conduct business with companies that are located outside the United States, particularly in Asia. We purchase wafers from foreign foundries, have our solutions assembled and tested by subcontractors located in Asia, and supply our solutions to customers located outside of the United States. Even customers of ours that are based in the United States often use contract manufacturers based in Asia to manufacture their products, and these contract manufacturers typically purchase products directly from us. As a result of our international focus, we face numerous challenges and risks, including:

- increased complexity and costs of managing international operations;
- longer and more difficult collection of receivables;
- difficulties in enforcing contracts generally;
- regional economic instability;
- geopolitical instability and military conflicts;
- limited protection of our intellectual property and other assets;
- compliance with local laws and regulations and unanticipated changes in local laws and regulations, including tax laws and regulations;
- trade and foreign exchange restrictions and higher tariffs;
- travel restrictions;
- timing and availability of import and export licenses and other governmental approvals, permits and licenses, including export classification requirements;
- foreign currency exchange fluctuations relating to our international operating activities;
- restrictions imposed by the U.S. government on our ability to do business with certain companies or in certain countries as a result of international political conflicts;
- transportation delays and other consequences of limited local infrastructure, and disruptions, such as large scale outages or interruptions of service from utilities or telecommunications providers;
- difficulties in staffing international operations;
- heightened risk of terrorist acts;
- local business and cultural factors that differ from our normal standards and practices;
- differing employment practices and labor relations;
- regional health issues and natural disasters; and
- work stoppages.

Global economic and political conditions, including possible trade tariffs and restrictions, may have an impact on our business and financial condition in ways that we currently cannot predict.

Recent proposed public policy changes and the imposition of trade tariffs and restrictions between the United States and China have in our view created, and will continue to create, an uncertain business environment. In particular, if tariffs or restrictions are imposed on our products or the products of our customers, there could be a negative impact on our operations and financial performance. For example, H.R. 5515 - John S. McCain National Defense Authorization Act for Fiscal Year 2019, which was recently enacted into law and will go into effect in calendar year 2019, will negatively impact our two largest China IP security customers and likely decrease their demand for our solutions. While we anticipate that this new law will likely have a negative impact on our revenue in the near term due to uncertainty relating to these customers, we cannot yet predict the longer term impact on our business. In addition, if further restrictions were placed a significant customer affecting its ability to do business with us, it would likely have a material adverse effect on our business and financial condition.

Our third-party contractors and their suppliers are concentrated in South Korea, Taiwan and Japan, a region subject to earthquakes and other natural disasters. Any disruption to the operations of these contractors could cause significant delays in the production or shipment of our products.

The majority of our products are manufactured by or receive components from third-party contractors located in South Korea, Taiwan and Japan. The risk of an earthquake or tsunami in South Korea, Taiwan, Japan and elsewhere in the Pacific Rim region is significant due to the proximity of major earthquake fault lines. For example, in December 2006 a major earthquake occurred in Taiwan and in March 2011 a major earthquake and tsunami occurred in Japan. Although we are not aware of any significant damage suffered by our third-party contractors as a result of those natural disasters, the occurrence of additional earthquakes or other natural disasters could result in the disruption of our foundry vendor or assembly and test capacity. A disruption in the availability of image sensors from Sony Corporation as a result of the April 14, 2016 Kumamoto, Japan earthquake impacted our customers' ability to build or launch cameras and, as a result, negatively impacted the timing and scope of demand for our SoCs in the second and third quarters of fiscal year 2017. Any disruption resulting from such events could cause significant delays in the production or shipment of our products until we are able to shift our manufacturing, assembling or testing from the affected contractor to another third-party vendor. We may not be able to obtain alternate capacity on favorable terms, or at all.

If our operations are interrupted, our business and reputation could suffer.

Our operations and those of our manufacturers are vulnerable to interruption caused by technical breakdowns, computer hardware and software malfunctions, software viruses, infrastructure failures, fires, earthquakes, floods, power losses, telecommunications failures, terrorist attacks, wars, Internet failures and other events beyond our control. Any disruption in our services or operations could result in a reduction in revenue or a claim for substantial damages against us, regardless of whether we are responsible for that failure. We rely on our computer equipment, database storage facilities and other office equipment, which are located primarily in the seismically active San Francisco Bay Area and Taiwan. If we suffer a significant database or network facility outage, our business could experience disruption until we fully implement our back-up systems.

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

We are subject to disclosure and compliance requirements associated with being a public company, including but not limited to compliance with Section 404 of the Sarbanes-Oxley Act of 2002. For example, Section 404 of the Sarbanes-Oxley Act requires that our management report on, and our independent auditors attest to, the effectiveness of our internal control structure and procedures for financial reporting. Compliance with Section 404 requires a

significant amount of time, expenses and diversion of internal resources. If we or our auditors discover a material weakness in our internal controls, the disclosure of that fact, even if quickly remedied, could reduce the market's confidence in our financial statements and harm our stock price. In addition, if we fail to maintain effective controls over financial reporting, we could be subject to sanctions or investigations by The NASDAQ Stock Market, the SEC, or other regulatory authorities. Furthermore, investor perceptions of our company may suffer, and this could cause a decline in the market price of our ordinary shares. Any inability to provide reliable financial reports or prevent fraud could harm our business. We may not be able to effectively and timely implement necessary control changes and employee training to ensure continued compliance with the Sarbanes-Oxley Act and other regulatory and reporting requirements. We cannot assure you that in the future we will be able to continue to fully comply with the requirements of the Sarbanes-Oxley Act or that management or our auditors will conclude that our internal controls are effective in future periods. Irrespective of compliance with Section 404, any failure of our internal controls could have a material adverse effect on our stated results of operations and harm our reputation.

Changes to financial accounting standards may affect our results of operations and could cause us to change our business practices.

We prepare our consolidated financial statements to conform to generally accepted accounting principles, or GAAP, in the United States. These accounting principles are subject to interpretation by the American Institute of Certified Public Accountants, the SEC and various bodies formed to interpret and create accounting rules and regulations. Changes in those accounting rules, including the new revenue recognition guidance and the associated adoption efforts, which are currently underway, could have a significant effect on our financial results, require significant resources, pose challenges in forecasting revenue and may affect our reporting of transactions completed before a change is announced. Changes to those rules or the questioning of current practices may adversely affect our reported financial results or the way we conduct our business.

Upon the adoption of ASC 606 on February 1, 2018, we recognize revenue on sales to distributors upon shipment and transfer of control (known as “sell-in” revenue recognition) based on the amount of consideration expected to be received. To the extent that the actual consideration received is materially different from estimated variable consideration recognized, we may be required to adjust revenue in subsequent periods.

The complexity of calculating our tax provision may result in errors that could result in restatements of our financial statements.

We are incorporated in the Cayman Islands and our operations are subject to income and transaction taxes in the United States, China, Hong Kong, Japan, Italy, South Korea, Taiwan and other jurisdictions in which we do business. Due to the complexity associated with the calculation of our tax provision, we have hired independent tax advisors to assist us. If we or our independent tax advisors fail to resolve or fully understand certain issues, there may be errors that could result in us having to restate our financial statements. Restatements are generally costly and could adversely impact our results of operations or have a negative impact on the trading price of our ordinary shares.

Changes in effective tax rates or adverse outcomes resulting from examination of our income tax returns could adversely affect our results.

Our future effective tax rates could be adversely affected if earnings are lower than anticipated in countries where we have lower statutory rates and higher than anticipated in countries where we have higher statutory rates, by changes in the valuation of our deferred tax assets and liabilities, tax effects of share-based compensation, or by changes in tax laws, regulations, accounting principles or interpretations thereof. For example, changes in tax laws, including the recently enacted U.S. federal tax legislation commonly referred to as the Tax Cuts and Jobs Act of 2017 (Tax Act), as well as other factors, could cause us to experience fluctuations in our tax obligations and effective tax rates and otherwise adversely affect our tax positions and/or our tax liabilities.

The Tax Act requires complex computations not previously provided in U.S. tax law. The U.S. Department of Treasury has broad authority to issue regulations and interpretative guidance that may significantly impact how we will apply the law and impact our results of operations in the period issued. As such, the application of accounting guidance for such items is currently uncertain. Further, compliance with the Tax Act and the accounting for such provisions require accumulation of information not previously required or regularly produced. While we have completed our accounting for the effects of the Tax Act, additional regulatory guidance may still be issued by the applicable taxing authorities which could materially affect our tax obligations and effective tax rate.

In addition, our income tax returns are subject to continuous examination by the Internal Revenue Service, or IRS, and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. We cannot assure you that the outcomes from these continuous examinations will not have an adverse effect on our operating results and financial condition.

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Unfavorable tax law changes, an unfavorable governmental review of our tax returns, changes in our geographical earnings mix or imposition of withholding taxes on repatriated earnings could adversely affect our effective tax rate and our operating results.

Our operations are subject to certain taxes, such as income and transaction taxes, in the Cayman Islands, the United States, China, Hong Kong, Japan, Italy, South Korea, Taiwan and other jurisdictions in which we do business. A change in the tax laws in the jurisdictions in which we do business, including an increase in tax rates or an adverse change in the treatment of an item of income or expense, possibly with retroactive effect, could result in a material increase in the amount of taxes we incur. In particular, past proposals have been made to change certain U.S. tax laws relating to foreign entities with U.S. connections, which may include us. For example, previously proposed legislation has considered treating certain foreign corporations as U.S. domestic corporations (and therefore taxable on all of their worldwide income) if the management and control of the foreign corporation occurs, directly or indirectly, primarily within the United States. If such legislation were enacted, we could, depending on the precise form, be subject to U.S. taxation notwithstanding our domicile outside the United States. In addition, on October 5, 2015 the Organization for Economic Co-operation and Development, or OECD, which represents a coalition of member countries, released its final reports from the BEPS Action Plans. The final reports include recommendations covering a number of issues, including country-by-country reporting, permanent establishment rules, transfer pricing rules and tax treaties. These changes, which have been or are in the process of being adopted by numerous countries, could increase uncertainties and may adversely affect our provision for income taxes.

We are subject to periodic audits or other reviews by tax authorities in the jurisdictions in which we conduct our activities. Any such audit, examination or review requires management’s time, diverts internal resources and, in the event of an unfavorable outcome, may result in additional tax liabilities or other adjustments to our historical results.

Because we conduct operations in multiple jurisdictions, our effective tax rate is influenced by the amounts of income and expense attributed to each such jurisdiction. If such amounts were to change so as to increase the amounts of our net income subject to taxation in higher-tax jurisdictions, or if we were to commence operations in jurisdictions assessing relatively higher tax rates, our effective tax rate could be adversely affected. In addition, we may determine that it is advisable from time to time to repatriate earnings from subsidiaries under circumstances that could give rise to imposition of potentially significant withholding taxes by the jurisdictions in which such amounts were earned, without our receiving the benefit of any offsetting tax credits, which could also adversely impact our effective tax rate.

We may be classified as a passive foreign investment company which could result in adverse U.S. federal income tax consequences for U.S. holders of our ordinary shares.

Based on the current and anticipated valuation of our assets and the composition of our income and assets, we do not expect to be considered a passive foreign investment company, or PFIC, for U.S. federal income tax purposes for our 2019 fiscal year or the foreseeable future. However, a separate determination must be made at the close of each taxable year as to whether we are a PFIC for that taxable year, and we cannot assure you that we will not be a PFIC for our 2019 fiscal year or any future taxable year. Under current law, a non-U.S. corporation will be considered a PFIC for any taxable year if either (a) at least 75% of its gross income is passive income or (b) at least 50% of the value of its assets, generally based on an average of the quarterly values of the assets during a taxable year, is attributable to assets that produce or are held for the production of passive income. PFIC status depends on the composition of our assets and income and the value of our assets (which may be based in part on the value of our ordinary shares which may fluctuate), including, among others, a pro rata portion of the income and assets of each subsidiary in which we own, directly or indirectly, at least 25% by value of the subsidiary’s equity interests, from time to time. Because we currently hold, and expect to continue to hold, a substantial amount of cash or cash equivalents, and because the calculation of the value of our assets may be based in part on the value of our ordinary shares which may fluctuate and may fluctuate considerably given that market prices of technology companies historically often have been volatile, we may be a PFIC for any taxable year. If we were treated as a PFIC for any taxable year during which a U.S. holder held ordinary shares, certain adverse U.S. federal income tax consequences could apply for such

U.S. holder.

Changes in our United States federal income tax classification, or that of our subsidiaries, could result in adverse tax consequences to our 10% or greater U.S. shareholders.

The Tax Act signed on December 22, 2017 may have changed the consequences to U.S. shareholders that own, or are considered to own, as a result of the attribution rules, ten percent or more of the voting power or value of the stock of a non-U.S. corporation (a 10% U.S. shareholder) under the U.S. Federal income tax law applicable to owners of U.S. controlled foreign corporations, or CFCs.

Prior to the Tax Act, the Company did not believe we, or any of our non-U.S. subsidiaries, were considered a CFC, which is a determination made daily based on whether the 10% U.S. shareholders together own, or are considered to own as a result of the attribution rules, more than fifty percent of the voting power or value of a non-U.S. corporation. The Tax Act repealed Internal Revenue Code Section 958(b)(4), which, unless clarified in future regulations or other guidance, may result in classification of certain of the Company's foreign subsidiaries as CFCs with respect to any single 10% U.S. shareholder. This may be the result without regard to whether 10% U.S. shareholders together own, directly or indirectly, more than fifty percent of the voting power or value of the Company as was the case under prior rules. The repeal is effective as of the last taxable year of CFCs beginning before January 1, 2018 and for the taxable year of 10% U.S. shareholders in which the CFCs' taxable year ends.

Fluctuations in exchange rates between and among the currencies of the countries in which we do business may adversely affect our operating results.

Our sales have been historically denominated in U.S. dollars. An increase in the value of the U.S. dollar relative to the currencies of the countries in which our end customers operate could impair the ability of our end customers to cost-effectively integrate our SoCs into their devices which may materially affect the demand for our solutions and cause these end customers to reduce their orders, which would adversely affect our revenue and business. We may experience foreign exchange gains or losses due to the volatility of other currencies compared to the U.S. dollar. A significant portion of our solutions are sold to camera manufacturers located outside the United States, primarily in Asia. Sales to customers in Asia accounted for approximately 79%, 73% and 91% of our total revenue in fiscal years 2018, 2017 and 2016, respectively. Sales to customers in Asia accounted for approximately 88% of our total revenue for the nine months ended October 31, 2018. Because most of our end customers or their ODM manufacturers are located in Asia, we anticipate that a majority of our future revenue will continue to come from sales to that region. Although a large percentage of our sales are made to customers in Asia, we believe that a significant number of the products designed by these customers and incorporating our SoCs are then sold to consumers globally. In addition, if in the future we sell products or purchase inventory in currencies other than the U.S. dollar, our exposure to foreign currency risk could become more significant.

A significant number of our employees are located in Asia, principally Taiwan and China. Therefore, a portion of our payroll as well as certain other operating expenses are paid in currencies other than the U.S. dollar, such as the New Taiwan Dollar and the Chinese Yuan Renminbi. Our operating results are denominated in U.S. dollars and the difference in exchange rates in one period compared to another may directly impact period-to-period comparisons of our operating results. Furthermore, currency exchange rates, particularly the exchange rates between the Chinese Yuan Renminbi and the U.S. dollar and between the New Taiwan Dollar and the U.S. dollar, have been especially volatile in the recent past and these currency fluctuations may make it difficult for us to predict our operating results.

We have not implemented any hedging strategies to mitigate risks related to the impact of fluctuations in currency exchange rates. Even if we were to implement hedging strategies, not every exposure can be hedged and, where hedges are put in place based on expected foreign exchange exposure, they are based on forecasts which may vary or which may later prove to have been inaccurate. Failure to hedge successfully or anticipate currency risks accurately could adversely affect our operating results.

We may make acquisitions in the future that could disrupt our business, cause dilution to our shareholders, reduce our financial resources and harm our business.

In the future, we may acquire other businesses, products or technologies. Other than our acquisition of VisLab S.r.l., or VisLab, in June 2015, we have not made any acquisitions to date and do not have any agreements or commitments for any specific acquisition at this time. Our ability to make and successfully integrate acquisitions is unproven. Our acquisition of VisLab and any future acquisitions may not strengthen our competitive position and may be viewed negatively by our customers, financial markets or investors, and we may not achieve our goals in a timely manner, or at all. In addition, any acquisitions we make could lead to difficulties in integrating personnel, technologies and

operations from the acquired businesses and in retaining and motivating key personnel from these businesses. Acquisitions may disrupt our ongoing operations, divert management from their primary responsibilities, subject us to additional liabilities, increase our expenses and adversely impact our business, operating results, financial condition and cash flows. Acquisitions may also reduce our cash available for operations and other uses, and could also result in an increase in amortization expense related to identifiable assets acquired, potentially dilutive issuances of equity securities or the incurrence of debt, any of which could harm our business.

We cannot predict our future capital needs, and we may not be able to obtain additional financing to fund our operations.

We may need to raise additional funds in the future. Any required additional financing may not be available on terms acceptable to us, or at all. If we raise additional funds by issuing equity securities or convertible debt, investors may experience significant dilution of their ownership interest, and the newly-issued securities may have rights senior to those of the holders of our ordinary shares. If we raise additional funds by obtaining loans from third parties, the terms of those financing arrangements may include negative covenants or other restrictions on our business that could impair our operational flexibility and would also require us to incur interest expense. If additional financing is not available when required or is not available on acceptable terms, we may have to scale back our operations or limit our production activities, and we may not be able to expand our business, develop or enhance our products, take advantage of business opportunities or respond to competitive pressures which could result in lower revenue and reduce the competitiveness of our products.

Our marketable securities portfolio could experience a decline in market value, which could materially and adversely affect our financial results.

During the three months ended October 31, 2018, we invested an additional $100.0 million in debt securities. As of October 31, 2018, we had approximately $203.4 million in securities investments. The investments consisted primarily of money market funds, certificates of deposit, commercial paper, asset-backed securities, U.S. government securities and debt securities of corporations which are focused on the preservation of our capital. We currently do not use derivative financial instruments to adjust our investment portfolio risk or income profile.

These investments, as well as any cash deposited in bank accounts, are subject to general credit, liquidity, market and interest rate risks, which may be exacerbated by unusual events, such as the Eurozone crisis and the U.S. debt ceiling crisis, which affected various sectors of the financial markets and led to global credit and liquidity issues. If the global credit market continues to experience volatility or deteriorates, our investment portfolio may be impacted and some or all of our investments may experience other-than-temporary impairment which could adversely impact our financial results and position.

Risks Related to Ownership of Our Ordinary Shares

The market price of our ordinary shares may be volatile, which could cause the value of your investment to decline.

Since our initial public offering in October 2012, the market price of our ordinary shares has been highly volatile. The trading price of our ordinary shares is likely to remain volatile and could be subject to wide fluctuations in price in response to various factors, some of which are beyond our control. These factors include:

- changes in financial estimates, including our ability to meet our future revenue and operating profit or loss projections;
- fluctuations in our operating results or those of other semiconductor or comparable companies;
- fluctuations in the economic performance or market valuations of companies perceived by investors to be comparable to us;
- economic developments in the semiconductor industry as a whole;
- general economic conditions and slow or negative growth of related markets;
- announcements by us or our competitors of acquisitions, new products, significant contracts or orders, commercial relationships or capital commitments;
- our ability to develop and market new and enhanced solutions on a timely basis;
- changes in the demand for our customers' products;
- commencement of or our involvement in litigation;
- disruption to our operations;

- any major change in our board of directors or management;
- political or social conditions in the markets where we sell our products;
- changes in governmental regulations; and
- changes in earnings estimates or recommendations by securities analysts.

In addition, the stock market in general, and the market for semiconductor and other technology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. These broad market and industry factors may cause the market price of our ordinary shares to decrease, regardless of our actual operating performance. These trading price fluctuations may also make it more difficult for us to use our ordinary shares as a means to make acquisitions or to use options to purchase our ordinary shares to attract and retain employees. If the market price of our ordinary shares declines, you may not realize any return on your investment in us and may lose some or all of your investment. In addition, in the past, following periods of volatility in the overall market and the market price of a company's securities, securities class action litigation has often been instituted against these companies. This litigation, if instituted against us, could result in substantial costs and a diversion of our management's attention and resources.

If securities analysts or industry analysts downgrade our ordinary shares, publish negative research or reports or fail to publish reports about our business, our stock price and trading volume could decline.

The trading market for our ordinary shares will be influenced by the research and reports that industry or securities analysts publish about us, our business and our market. If one or more analysts adversely changes their recommendation regarding our stock or our competitors' stock, our stock price would likely decline. If one or more analysts cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets which in turn could cause our stock price or trading volume to decline.

Our actual operating results may differ significantly from our guidance and investor expectations, which would likely cause our stock price to decline.

From time to time, we may release guidance in our earnings releases, earnings conference calls or otherwise, regarding our future performance that represent our management's estimates as of the date of release. If given, this guidance, which will include forward-looking statements, will be based on projections prepared by our management. Projections are based upon a number of assumptions and estimates that, while presented with numerical specificity, are inherently subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond our control. The principal reason that we expect to release guidance is to provide a basis for our management to discuss our business outlook with analysts and investors. With or without our guidance, analysts and other investors may publish expectations regarding our business, financial performance and results of operations. We do not accept any responsibility for any projections or reports published by any such third persons.

Guidance is necessarily speculative in nature, and it can be expected that some or all of the assumptions of the guidance furnished by us will not materialize or will vary significantly from actual results. If our actual performance does not meet or exceed our guidance or investor expectations, the trading price of our ordinary shares is likely to decline.

The price of our ordinary shares could decrease as a result of shares being sold in the market.

Sales of a substantial number of our ordinary shares in the public market, or the perception that these sales might occur, could cause the market price of our ordinary shares to decline. Certain holders of our ordinary shares are entitled to rights with respect to registration of such shares under the Securities Act of 1933, as amended, or the Securities Act, pursuant to a registration rights agreement between such holders and us. If such holders, by exercising their registration rights, sell a large number of shares, the market price for our ordinary shares could be adversely affected. If we file a registration statement for the purpose of selling additional shares to raise capital and are required to include shares held by these holders pursuant to the exercise of their registration rights, our ability to raise capital may be impaired.

We filed registration statements on Form S-8 under the Securities Act to register shares for issuance under our 2004 Stock Plan, 2012 Equity Incentive Plan and the Amended and Restated 2012 Employee Stock Purchase Plan. Our

2012 Equity Incentive Plan and the Amended and Restated 2012 Employee Stock Purchase Plan provide for automatic increases in the shares reserved for issuance under these plans which could result in additional dilution to our shareholders. These shares can be freely sold in the public market upon issuance and vesting, subject to restrictions provided under the terms of the applicable plan and/or the option agreements entered into with option holders.

We may also issue ordinary shares or securities convertible into ordinary shares from time to time in connection with a financing, acquisition or otherwise. Any such issuance could result in substantial dilution to our existing shareholders and cause the trading price of our stock to decline.

We do not intend to pay dividends on our ordinary shares and, consequently, a shareholder's ability to achieve a return on its investment will depend on appreciation in the price of our ordinary shares.

We have never declared or paid any cash dividends on our ordinary shares and do not currently intend to do so for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Therefore, shareholders are not likely to receive any dividends on their ordinary shares for the foreseeable future and the success of an investment in our ordinary shares will depend upon any future appreciation in their value. There is no guarantee that our ordinary shares will appreciate in value or even maintain the price at which our shareholders have purchased their shares. Investors seeking cash dividends should not purchase our ordinary shares.

Provisions of our memorandum and articles of association and Cayman Islands corporate law may discourage or prevent an acquisition of us which could adversely affect the value of our ordinary shares.

Provisions of our memorandum and articles of association and Cayman Islands law may have the effect of delaying or preventing a change of control or changes in our management. These provisions include the following:

- the division of our board of directors into three classes;
- the right of our board of directors to elect a director to fill a vacancy created by the expansion of our board of directors or due to the resignation or departure of an existing board member;
- prohibition of cumulative voting in the election of directors which would otherwise allow less than a majority of shareholders to elect director candidates;
- the requirement for the advance notice of nominations for election to our board of directors or for proposing matters that can be acted upon at a shareholders' meeting;
- the ability of our board of directors to issue, without shareholder approval, such amounts of preference shares as the board of directors deems necessary and appropriate with terms set by our board of directors, which rights could be senior to those of our ordinary shares;
- the elimination of the rights of shareholders to call a special meeting of shareholders and to take action by written consent in lieu of a meeting; and
- the required approval of a special resolution of the shareholders, being a two-thirds vote of shares held by shareholders present and voting at a shareholder meeting, to alter or amend the provisions of our post-offering memorandum and articles of association.

Holders of our ordinary shares may face difficulties in protecting their interests because we are incorporated under Cayman Islands law.

Our corporate affairs are governed by our amended and restated memorandum and articles of association, by the Companies Law (as the same may be supplemented or amended from time to time) of the Cayman Islands and by the common law of the Cayman Islands. The rights of our shareholders and the fiduciary responsibilities of our directors under Cayman Islands law are not as clearly established as under statutes or judicial precedent in existence in jurisdictions in the United States. In particular, the Cayman Islands has a less developed body of securities laws than the United States and provides significantly less protection to investors. There is no legislation specifically dedicated to the rights of investors in securities and thus no statutorily defined private cause of action specific to investors such as those provided under the Securities Act or the Securities Exchange Act of 1934, as amended. In addition, shareholders of Cayman Islands companies may not have standing to initiate shareholder derivative actions in U.S. federal courts. Therefore, you may have more difficulty in protecting your interests in the face of actions by our management, directors or controlling shareholders than would shareholders of a corporation incorporated in a jurisdiction in the United States due to the comparatively less developed nature of Cayman Islands law in this area.

Shareholders of Cayman Islands exempted companies, such as our company, have no general rights under Cayman Islands law to inspect corporate records and accounts or to obtain copies of lists of shareholders of the company. Our directors have discretion under our articles of association to determine whether or not, and under what conditions, our corporate records may be inspected by our shareholders, but are not obliged to make them available to our

shareholders. This may make it more difficult for you to obtain the information needed to establish any facts necessary for a shareholder motion or to solicit proxies from other shareholders in connection with a proxy contest.

Subject to limited exceptions, under Cayman Islands law, a minority shareholder may not bring a derivative action against the board of directors.

Holders of our ordinary shares may have difficulty obtaining or enforcing a judgment against us because we are incorporated under the laws of the Cayman Islands.

It may be difficult or impossible for you to bring an action against us in the Cayman Islands if you believe your rights have been infringed under U.S. securities laws. There is no statutory recognition in the Cayman Islands of judgments obtained in the United States, although the courts of the Cayman Islands will in certain circumstances recognize and enforce a non-penal judgment of a foreign court of competent jurisdiction without retrial on the merits. While there is no binding authority on this point, this is likely to include, in certain circumstances, a non-penal judgment of a United States court imposing a monetary award based on the civil liability provisions of the U.S. federal securities laws. The Grand Court of the Cayman Islands may stay proceedings if concurrent proceedings are being brought elsewhere. There is uncertainty as to whether the Grand Court of the Cayman Islands would recognize or enforce judgments of United States courts obtained against us predicated upon the civil liability provisions of the securities laws of the United States or any state thereof and whether the Grand Court of the Cayman Islands would hear original actions brought in the Cayman Islands against us predicated upon the securities laws of the United States or any state thereof.

ITEM 2. Unregistered Sales of Equity Securities and Use of Proceeds

(c) Purchases of Equity Securities by the Issuer and Affiliated Purchasers.

The following table displays information with respect to repurchases of the Company's ordinary shares during the three months ended October 31, 2018:

Period	Total Number Of Shares Purchased (i)	Average Price Paid Per Share (ii)	Total Number Of Shares Purchased As Part of Publicly Announced Plans Or Programs (i)	Approximate Dollar Value Of Shares That May Yet Be Purchased Under The Plans Or Programs (in millions) (i)
August 1, 2018 to August 31, 2018	598,892	$ 38.61	598,892	
September 1, 2018 to September 30, 2018	—	—	—	
October 1, 2018 to October 31, 2018	226,299	33.87	226,299	
Total	825,191	$ 37.31	825,191	$ 35.4

(i) Our Board of Directors previously authorized a program to repurchase up to $125.0 million of our ordinary shares through June 30, 2018. On June 4, 2018, our Board of Directors authorized the repurchase of up to an additional $100.0 million of our ordinary shares over a twelve-month period commencing June 5, 2018. The repurchase program does not obligate us to acquire any particular amount of ordinary shares, and it may be suspended at any time at our discretion. Shares may be repurchased through open market purchases, 10b5-1 plans or privately

negotiated transactions. Repurchases are funded using our working capital and any repurchased shares are recorded as authorized but unissued shares. As of October 31, 2018, we had repurchased an aggregate amount of $171.3 million of our ordinary shares, and we had approximately $35.4 million available to repurchase shares under the program through June 4, 2019.

(ii) The average price paid per share is calculated by total cash utilized (excluding commission) divided by total shares repurchased during the period.

ITEM 6. Exhibits

The exhibits listed in the accompanying Exhibit Index are filed or incorporated by reference as part of this Quarterly Report.

EXHIBIT INDEX

Exhibit Number	Description
3.1(1)	Amended and Restated Memorandum of Association and Second Amended and Restated Articles of Association of the Registrant.
31.1	Certification of Principal Executive Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Principal Financial Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1±	Certification of Principal Executive Officer and Principal Financial Officer Required Under Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. §1350.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Schema Linkbase Document
101.CAL	XBRL Taxonomy Calculation Linkbase Document
101.DEF	XBRL Taxonomy Definition Linkbase Document
101.LAB	XBRL Taxonomy Labels Linkbase Document
101.PRE	XBRL Taxonomy Presentation Linkbase Document

(1) Incorporated by reference to the Registrant's registration statement on Form S-1 (No. 333-174838) Amendment No. 3 as filed with the Securities and Exchange Commission on September 12, 2012.

± In accordance with Item 601(b)(32)(ii) of Regulation S-K and SEC Release No. 33-8238 and 34-47986, Final Rule: Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, the certifications furnished in Exhibits 32.1 hereto are deemed to accompany this Form 10-Q and will not be deemed "filed" for purposes of Section 18 of the Exchange Act. Such certifications will not be deemed to be incorporated by reference into any filings under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

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.

AMBARELLA, INC.

Date: December 7, 2018 By: /s/ Feng-Ming Wang
Feng-Ming Wang
President and Chief Executive Officer

Date: December 7, 2018 By: /s/ Kevin C. Eichler
Kevin C. Eichler
Chief Financial Officer