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

FORM 10-Q

(Mark One)
[x] **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Quarterly Period Ended September 29, 2019

OR

[ ] **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Transition Period From______ To

COMMISSION FILE NUMBER: 000-22671

QUICKLOGIC CORPORATION
(Exact name of registrant as specified in its charter)

DELAWARE	**77-0188504**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

2220 Lundy Avenue, San Jose, CA 95131-1816
(Address of principal executive offices including zip code))

(408) 990-4000
(Registrant's telephone number, including area code)

Securities registered pursuant Section 12(b) of the act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $.001 per share	QUIK	The Nasdaq Capital Market

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 [x] 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 [x] No [ ]

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definition 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	[x]
Non-accelerated filer	[ ]	Smaller Reporting Company	[x]
		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 Securities Exchange Act).

Yes [ ] No [x]

As of November 1, 2019, there were 116,558,521 shares of registrant’s common stock, par value $0.001 per share, outstanding.

QUICKLOGIC CORPORATION
FORM 10-Q
SEPTEMBER 29, 2019

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PART I. Financial Information

Item 1. Financial Statements

QUICKLOGIC CORPORATION
UNAUDITED CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except par value amount)

	September 29, 2019	December 30, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 24,722	$ 26,363
Restricted cash	100	100
Accounts receivable, net of allowances for doubtful accounts of $0 and $0	1,259	2,209
Inventories	3,378	3,836
Other current assets	1,506	1,775
Total current assets	30,965	34,283
Property and equipment, net	1,033	1,449
Right of use assets	2,170	—
Intangible assets	1,045	—
Goodwill	282	—
Other assets	306	354
TOTAL ASSETS	$ 35,801	$ 36,086
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Revolving line of credit	$ 15,000	$ 15,000
Trade payables	1,004	1,488
Accrued liabilities	1,474	1,903
Lease liabilities-current	662	316
Total current liabilities	18,140	18,707
Long-term liabilities:		
Lease liabilities-non-current	1,423	108
Other long-term liabilities	—	16
Total liabilities	19,563	18,831
Commitments and contingencies (see Note 15)		
Stockholders' equity:		
Preferred stock, $0.001 par value; 10,000 shares authorized; no shares issued or outstanding	—	—
Common stock, $0.001 par value; 200,000 authorized; 116,556 and 95,513 shares issued and outstanding as of September 29, 2019 and December 30, 2018, respectively	116	95
Additional paid-in capital	296,317	284,974
Accumulated deficit	(280,195)	(267,814)
Total stockholders' equity	16,238	17,255
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 35,801	$ 36,086

See accompanying Notes to Unaudited Condensed Consolidated Financial Statements.

QUICKLOGIC CORPORATION
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share amounts)

	Three Months Ended		Nine Months Ended	
	September 29, 2019	September 30, 2018	September 29, 2019	September 30, 2018
Revenue	$ 2,158	$ 3,510	$ 7,439	$ 9,396
Cost of revenue	1,117	1,767	3,397	4,734
Gross profit	1,041	1,743	4,042	4,662
Operating expenses:				
Research and development	3,139	2,461	9,596	7,526
Selling, general and administrative	2,095	2,509	6,881	7,680
Total operating expenses	5,234	4,970	16,477	15,206
Loss from operations	(4,193)	(3,227)	(12,435)	(10,544)
Interest expense	(63)	(21)	(270)	(77)
Interest income and other (expense), net	55	17	153	26
Loss before income taxes	(4,201)	(3,231)	(12,552)	(10,595)
Provision for (benefit from) income taxes	70	29	(171)	119
Net loss	$ (4,271)	$ (3,260)	$ (12,381)	$ (10,714)
Net loss per share:				
Basic and diluted	$ (0.04)	$ (0.03)	$ (0.12)	$ (0.12)
Weighted average shares outstanding:				
Basic and diluted	116,387	94,725	104,173	87,040

Note: Net loss equals to comprehensive loss for all the period presented.

See accompanying Notes to Unaudited Condensed Consolidated Financial Statements.

QUICKLOGIC CORPORATION
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Nine Months Ended	
	September 29, 2019	September 30, 2018
Cash flows from operating activities:		
Net loss	$ (12,381)	$ (10,714)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	900	980
Stock-based compensation	2,490	1,427
Write-down of inventories	80	206
Write-off of equipment	2	5
Tax benefit from acquisition	(282)	—
Changes in operating assets and liabilities:		
Accounts receivable	950	(301)
Inventories	378	(736)
Other assets	304	(59)
Trade payables	(492)	(232)
Accrued liabilities and deferred revenue	(683)	562
Other long-term liabilities	(16)	33
Net cash used in operating activities	(8,750)	(8,829)
Cash flows from investing activities:		
Capital expenditures for property and equipment	(599)	(112)
Cash received from business acquisition	20	—
Net cash used in investing activities	(579)	(112)
Cash flows from financing activities:		
Payment of finance lease obligations	(283)	(329)
Proceeds from line of credit	32,000	21,000
Payment of line of credit	(32,000)	(18,000)
Proceeds from issuance of common stock	9,439	15,859
Stock issuance costs	(1,181)	(1,638)
Taxes for net issuance of stock awards	(287)	(259)
Net cash provided by financing activities	7,688	16,633
Net (decrease)/increase in cash, cash equivalents and restricted cash	(1,641)	7,692
Cash, cash equivalents and restricted cash at beginning of period	26,463	16,527
Cash, cash equivalents and restricted cash at end of period	$ 24,822	$ 24,219

See accompanying Notes to Unaudited Condensed Consolidated Financial Statements.

QUICKLOGIC CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
(In thousands)

	For the three and nine months ended September 29, 2019				
	Common Stock		Additional Paid-In	Retained	Total Stockholders'
	Shares	Amount	Capital	Earnings	Equity
Balance at December 30, 2018	95,513	$ 95	$ 284,974	$ (267,814)	$ 17,255
Common stock issued under stock plans and employee stock purchase plan	1,676	2	738	—	740
Stock-based compensation	—	—	951	—	951
Net loss	—	—	—	(3,476)	(3,476)
Balance at March 31, 2019	97,189	97	286,663	(271,290)	15,470
Common stock issued under stock plans and employee stock purchase plan	532	1	209	—	210
Common stock offering, net of issuance costs	18,400	18	8,007	—	8,025
Stock-based compensation	—	—	791	—	791
Net loss	—	—	—	(4,634)	(4,634)
Balance at June 30, 2019	116,121	116	295,670	(275,924)	19,862
Common stock issued under stock plans and employee stock purchase plan	435	—	(94)	—	(94)
Common stock offering issuance costs	—	—	(6)	—	(6)
Stock-based compensation	—	—	747	—	747
Net loss	—	—	—	(4,271)	(4,271)
Balance at September 29, 2019	116,556	$ 116	$ 296,317	$ (280,195)	$ 16,238

	For the three and nine months ended September 30, 2018				
	Common Stock		Additional Paid-In	Retained	Total Stockholders'
	Shares	Amount	Capital	Earnings	Equity
Balance at December 31, 2017	80,536	$ 80	$ 268,833	$ (254,035)	$ 14,878
Common stock issued under stock plans and employee stock purchase plan	91	—	(47)	—	(47)
Stock-based compensation	—	—	432	—	432
Net loss	—	—	—	(3,970)	(3,970)
Balance at April 1, 2018	80,627	80	269,218	(258,005)	11,293
Common stock issued under stock plans and employee stock purchase plan	434	—	233	—	233
Common stock offering, net of issuance costs	13,514	14	13,889	—	13,903
Stock-based compensation	—	—	479	—	479
Net loss	—	—	—	(3,484)	(3,484)
Balance at July 1, 2018	94,575	94	283,819	(261,489)	22,424
Common stock issued under stock plans and employee stock purchase plan	347	1	(130)	—	(129)
Stock-based compensation	—	—	516	—	516
Net loss	—	—	—	(3,260)	(3,260)
Balance at September 30, 2018	94,922	$ 95	$ 284,205	$ (264,749)	$ 19,551

See accompanying Notes to Unaudited Condensed Consolidated Financial Statements

NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

Note 1 — The Company and Basis of Presentation

QuickLogic Corporation, or QuickLogic or the Company, was founded in 1988 and reincorporated in Delaware in 1999. The Company enables Original Equipment Manufacturers, or OEMs to maximize battery life for highly differentiated, immersive user experiences with Smartphone, Wearable, Hearable, Tablet and Internet-of-Things, or IoT devices. QuickLogic delivers these benefits through industry leading ultra-low power customer programmable System on Chip, or SoC, semiconductor solutions, embedded software, and algorithm solutions for always-on voice and sensor processing, and enhanced visual experiences. The Company is a fabless semiconductor provider of comprehensive, flexible sensor processing solutions, ultra-low power display bridges, and ultra-low power Field Programmable Gate Arrays, or FPGAs. The Company's wholly owned subsidiary, SensiML Corporation, or SensiML, provides Analytics Toolkit, which is used in many of the applications where the Company's ArcticPro™, eFPGA intellectual property, or IP plays a critical role. SensiML Analytics toolkit is an end-to-end software suite that provides OEMs a straightforward process for developing pattern matching sensor algorithms using machine learning technology that are optimized for ultra-low power consumption.

The accompanying interim condensed consolidated financial statements are unaudited. In the opinion of the Company's management, these statements have been prepared in accordance with the United States generally accepted accounting principles, or U.S. GAAP, and include all adjustments, consisting only of normal recurring adjustments, necessary to provide a fair statement of results for the interim periods presented. The Company recommends that these interim condensed consolidated financial statements be read in conjunction with the Company's Form 10-K for the year ended December 30, 2018, which was filed with the Securities and Exchange Commission, or SEC, on March 15, 2019, as amended. Operating results for the three and nine months ended September 29, 2019 are not necessarily indicative of the results that may be expected for the full year.

QuickLogic's fiscal year ends on the Sunday closest to December 31 and each fiscal quarter ends on the Sunday closest to the end of each calendar quarter. QuickLogic's third fiscal quarters for 2019 and for 2018 ended on September 29, 2019 and September 30, 2018, respectively.

Liquidity

The Company has financed its operations and capital investments through sales of common stock, finance leases, bank lines of credit and cash flows from operations. As of September 29, 2019, the Company's principal sources of liquidity consisted of cash and cash equivalents and restricted cash of $24.8 million, including $15.0 million drawn down from its revolving line of credit, or Revolving Facility with Heritage Bank of Commerce, or Heritage Bank. On November 6, 2019 the Company entered into a First Amendment to the Revolving Facility with Heritage Bank to extend the maturity date for one year through September 28, 2021. Under this amendment the Revolving Facility advances shall bear interest, on the outstanding daily balance thereof, at a rate per annum equal to the greater of (i) one half of one percentage point (0.50%) above the Prime Rate, or (ii) five and one half of one percentage points (5.50%).

On June 21, 2019, the Company closed its underwritten public offering of 18.4 million shares of common stock, $0.001 par value per share at a price of $0.50 per share, which included 2.4 million shares issued pursuant to the underwriters' full exercise of their over-allotment option. The Company received net proceeds of approximately $8.0 million, after deducting underwriting commissions and other offering-related expenses.

Various factors can affect the Company's liquidity, including, among others: the level of revenue and gross profit as a result of the cyclicality of the semiconductor industry; the conversion of design opportunities into revenue; market acceptance of existing and new products including solutions based on its ArcticLink®, PolarPro® platforms, eFPGA, EOS S3 SoC, Quick AI solution, SensiML software and Freedom Aware SoC Templates; fluctuations in revenue as a result of product end-of-life; fluctuations in revenue as a result of the stage in the product life cycle of its customers' products; costs of securing access to and availability of adequate manufacturing capacity; levels of inventories; wafer purchase commitments; customer credit terms; the amount and timing of research and development expenditures; the timing of new product introductions; production volumes; product quality; sales and marketing efforts; the value and liquidity of its investment portfolio; changes in operating assets and liabilities; the ability to obtain or renew debt financing and to remain in compliance with the terms of existing credit facilities; the ability to raise funds from the sale of equity in the Company; the ability to capitalize on synergies with our newly acquired subsidiary SensiML; the issuance and exercise of stock options and participation in the Company's employee stock purchase plan; and other factors related to the uncertainties of the industry and global economics.

Over the longer term, the Company anticipates that sales generated from its new product offerings, existing cash and cashequivalents, together with financial resources from its Revolving Facility with the Heritage Bank, assuming renewal of the Revolving Facility or the Company entering into a new debt agreement with an alternative lender prior to the expiration of the revolving line of credit in September 2021, and its ability to raise additional capital in the public capital markets will be sufficient to satisfy its operations and capital expenditures. However, the Company cannot provide any assurance that it will be able to raise additional capital, if required, or that such capital will be available on terms acceptable to the Company. The inability of the Company to generate sufficient sales from its new product offerings and/or raise additional capital if needed could have a material adverse effect on the Company's operations and financial condition, including its ability to maintain compliance with its lender's financial covenants.

Principles of Consolidation

The consolidated financial statements include the accounts of QuickLogic and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated.

Foreign Currency

The functional currency of the Company's non-U.S. operations is the U.S. dollar. Accordingly, all monetary assets and liabilities of these foreign operations are translated into U.S. dollars at current period-end exchange rates and non-monetary assets and related elements of expense are translated using historical exchange rates. Income and expense elements are translated to U.S. dollars using the average exchange rates in effect during the period. Gains and losses from the foreign currency transactions of these subsidiaries are recorded as interest income and other expense, net in the unaudited condensed consolidated statements of operations.

Uses of Estimates

The preparation of these 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 disclosures of contingent assets and liabilities and the reported amounts of revenue and expenses during the period. Actual results could differ materially from those estimates, particularly in relation to revenue recognition, the allowance for doubtful accounts, sales returns, valuation of long-lived assets including mask sets, valuation of goodwill and intangibles related to the acquisition of SensiML, including the estimated useful lives of acquired intangible assets, valuation of inventories including identification of excess quantities, market value and obsolescence, measurement of stock-based compensation awards, accounting for income taxes and estimating accrued liabilities.

Contracts with customers often include promises to transfer multiple products and services to a customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment.

Judgment is required to determine the Stand-alone Selling Price, or SSP, for each distinct performance obligation. The Company uses a range of amounts to estimate SSP when each of the products and services are sold separately and determines the discount to be allocated based on the relative SSP of the various products and services when products and services sold are bundled. In instances where SSP is not directly observable, such as when the Company does not sell the product or service separately, it determines the SSP using information that may include market conditions and other observable inputs. The Company typically has more than one SSP for individual products and services due to the stratification of those products and services by customers. In these instances, the Company may use information such as the size of the customer, customer tier, type of the technology used, customer demographics, geographic region and other factors in determining the SSP.

Concentration of Risk

The Company's accounts receivable are denominated in U.S. dollars and are derived primarily from sales to customers located in North America, Asia Pacific, and Europe. The Company performs ongoing credit evaluations of its customers and generally does not require collateral. See Note 14 for information regarding concentrations associated with accounts receivable.

Note 2 — Significant Accounting Policies

During the nine-month period ended September 29, 2019, there were no changes in the Company's significant accounting policies from its disclosures in the Annual Report on Form 10-K for the year ended December 30, 2018, except for the new accounting standards adopted during the nine months of 2019. For a discussion of the significant accounting policies, please see the Annual Report on Form 10-K for the fiscal year ended December 30, 2018, filed with the SEC on March 15, 2019, as amended. For a discussion of the new accounting standards adopted during the nine months of 2019, see “New Accounting Pronouncements” and “Leases” below.

Revenue Recognition

The Company applies Accounting Standards Codification, or ASC, Topic 606, *Revenue from Contracts with Customers*, to recognize revenue. The guidance states that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services.

Under the new standard revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration it expects to receive in exchange for those products or services.

The Company determines revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer;
- Identification of the performance obligations in the contract;
- Determination of the transaction price;
- Allocation of the transaction price to the performance obligations in the contract; and
- Recognition of revenue when, or as, a performance obligation is satisfied.

As part of its assessment of each contract, the Company evaluates certain factors including the customer’s ability to pay, or credit risk. For each contract, the Company considers the promise to transfer products, each of which is distinct, to be the identified performance obligations. In determining the transaction price, the price stated on the purchase order is typically fixed and represents the net consideration to which the Company expects to be entitled, and therefore there is no variable consideration. As the Company’s standard payment terms are less than one year, the Company has elected, as a practical expedient, to not assess whether a contract has a significant financing component. The Company allocates the transaction price to each distinct product based on its relative stand-alone selling price. The product price as specified on the purchase order is considered the stand-alone selling price as it is an observable source that depicts the price as if sold to a similar customer in similar circumstances.

Leases

The Company adopted Accounting Standards Update, or ASU, No. 2016-02, *Leases (Topic 842)* and related ASUs, which provide supplementary guidance and clarifications on December 31, 2018, utilizing the modified retrospective transition method through a cumulative-effect adjustment at the beginning of the first quarter of 2019. Additionally, the Company elected the practical expedient approach and did not reassess whether any contracts that existed prior to adoption have or contain leases or the classification of our existing leases.

Under Topic 842, all significant lease arrangements are generally recognized at lease commencement. Operating lease right-of-use, or ROU, assets and lease liabilities are recognized at the commencement date. A ROU asset and corresponding lease liability is not recorded for leases with an initial term of 12 months or less (short term leases) and the Company recognizes lease expense for these leases as incurred over the lease term.

ROU assets represent the Company’s right to use an underlying asset during the reasonably certain lease terms and lease liabilities represent the Company’s obligation to make lease payments arising from the lease. The Company’s lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. The Company primarily uses its incremental borrowing rate, based on the information available at commencement date, in determining the present value of lease payments. The operating lease ROU asset also includes any lease payments related to initial direct cost and prepayments and excludes lease incentives. Lease expense is recognized on a straight-line basis over the lease term. The Company has lease agreements with lease and non-lease components, which are generally accounted for separately.

In accordance with ASU No. 2016-02, the Company recognized right-of-use assets of approximately $975,000 and lease liabilities of approximately $939,000 on the Company's Consolidated Balance Sheet as of March 31, 2019, with no material impact to its Consolidated Statements of operations. As of September 29, 2019, the Company's right-of-use assets was approximately $2.2 million and lease liability was approximately $2.1 million as presented on the Company's Consolidated Balance Sheet. See Note 8 to the Unaudited Consolidated Financial Statements for more details.

Business Combinations

The Company recognizes assets acquired (including goodwill and identifiable intangible assets) and liabilities assumed at fair value on the acquisition date. Subsequent changes to the fair value of such assets acquired and liabilities assumed are recognized in earnings, after the expiration of the measurement period, a period not to exceed 12 months from the acquisition date. Acquisition-related expenses and acquisition-related restructuring costs are recognized in earnings in the period in which they are incurred.

Goodwill and Intangible Assets

Goodwill represents the excess fair value of consideration transferred over the fair value of net assets acquired in business combinations. The carrying value of goodwill and indefinite lived intangible assets are not amortized, but are annually tested for impairment and more often if there is an indicator of impairment.

Intangible assets with finite useful lives are amortized on a straight-line basis over the periods benefited. The Company reviews the recoverability of its long-lived assets when events or changes in circumstances occur that indicate that the carrying value of the asset or asset group may not be recoverable. The assessment of possible impairment is based on the Company's ability to recover the carrying value of the asset or asset group from the expected future pre-tax cash flows (undiscounted and without interest charges) of the related operations. If these cash flows are less than the carrying value of such asset, an impairment loss is recognized for the difference between estimated fair value and carrying value. The measurement of impairment requires management to estimate future cash flows and the fair value of long-lived assets.

Restricted cash

Restricted cash represents amounts pledged as cash security related to the Silicon Valley Bank credit cards.

New Accounting Pronouncements

Recently adopted accounting pronouncements:

In January 2017, the FASB issued Accounting Standards Update ASU No. 2017-04, *Simplifying the Test for Goodwill Impairment*, which simplifies the subsequent measurement of goodwill. Goodwill impairment will equal the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. Furthermore, the ASU eliminates the requirements for any reporting unit with a zero or negative carrying amount to perform a qualitative assessment and, if it fails that qualitative test, to perform step 2 of the goodwill impairment test. The guidance will be applied prospectively, and is effective for annual and interim goodwill impairment tests in fiscal years beginning after December 15, 2019. Early adoption is permitted for any impairment tests performed on testing dates after January 1, 2017. The Company has elected to early adopt this guidance effective December 31, 2018 for goodwill impairment test, which will be performed annually on December 1st . The adoption of this guidance did not have a material impact on our consolidated financial statements.

In February 2018, FASB issued ASU No. 2018-02, *Income Statement - Reporting Comprehensive Income.* The new standard provides companies with an option to reclassify stranded tax effects resulting from enactment of the Tax Cuts and Jobs Act, or TCJA, from accumulated other comprehensive income to retained earnings. The guidance will be effective for the Company beginning in the first quarter of 2019 with early adoption permitted, and would be applied either in the period of adoption or retrospectively to each period (or periods) in which the effect of the change in the tax rate as a result of TCJA is recognized. The Company adopted this ASU on December 31, 2018 with no material impact on its results of operations, financial position and cash flows.

In March 2018, FASB issued ASU No. 2018-05,*Income Taxes (Topic 740)*. The new standard allows to insert the SEC's interpretive guidance from Staff Accounting Bulletin, or SAB, No.118, into the income tax accounting codification under U.S. GAAP. The ASU permits companies to use provisional amounts for certain income tax effects of the Tax Act during a one-year measurement period. The provisional accounting impacts for the Company may change in future reporting periods until the accounting analysis is finalized, which will occur no later than the first quarter of fiscal 2019. The Company completed its SAB No.118 analysis with no material impact to the consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, *Improvements to Nonemployee Share-Based Payment Accounting*. Currently, share-based payments to nonemployees are accounted for under Subtopic 505-50, which significantly differs from the guidance for share-based payments to employees under Topic 718. This ASU supersedes Subtopic 505-50 by expanding the scope of Topic 718 to include nonemployee awards and generally aligning the accounting for nonemployee awards with the accounting for employee awards. The effective date for public companies is for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. For all other entities, the effective date is fiscal years beginning after December 15, 2019. The Company adopted this ASU on December 31, 2018 with no material impact on its results of operations, financial position and cash flows.

Recently issued accounting pronouncements not yet adopted:

In August 2018, the FASB issued ASU No. 2018-13,*Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement*. This new standard modifies certain disclosure requirements on fair value measurements. The effective date for all entities is for fiscal years beginning after December 15, 2019. The Company is currently evaluating the impact of our pending adoption of the new standard on the consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-15,*Intangibles - Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementations Costs Incurred in a Cloud Computing Arrangement That is a Service Contract.* Under the new standard, implementations costs related to a cloud computing arrangement will be deferred or expensed as incurred, in accordance with the existing internal-use software guidance for similar costs. The new standard also prescribes the balance sheet, income statement and cash flow classification of the capitalized implementation costs and related amortizations expenses. The effective date for public companies is for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. For all other entities, the effective date is fiscal years beginning after December 15, 2021. The amendments may be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. The Company is currently evaluating the impact of our pending adoption of the new standard on the consolidated financial statements.

Note 3 — Net Loss Per Share

Basic loss per share is computed by dividing net loss available to common stockholders by the weighted average number of common shares outstanding during the period. Diluted net loss per share was computed using the weighted average number of common shares outstanding during the period plus potentially dilutive common shares outstanding during the period under the treasury stock method. In computing diluted net loss per share, the weighted average stock price for the period is used in determining the number of shares assumed to be purchased from the exercise of stock options and warrants.

For the three and nine months ended September 29, 2019 and September 30, 2018, 7.8 million and 7.0 million of common shares associated with equity awards and the estimated number of shares to be purchased under the current offering period of the 2009 Employee Stock Purchase Plan were outstanding, respectively. These shares were not included in the computation of diluted net loss per share as they were considered anti-dilutive due to the net losses the Company experienced during these periods. Warrants to purchase up to 5.4 million shares were issued in connection with May 29, 2018 stock offering were also not included in the diluted loss per share calculation of the three and nine months ended September 29, 2019 as they were also considered anti-dilutive due to the net loss the Company experienced during these periods.

Note 4 — Balance Sheet Components

The following table provides details relating to certain balance sheet line items as of September 29, 2019, and December 30, 2018 (in thousands):

	September 29, 2019	December 30, 2018
Inventories:		
Raw materials	$ 191	$ —
Work-in-process	2,535	3,120
Finished goods	652	716
	$ 3,378	$ 3,836
Property and equipment:		
Equipment	$ 10,703	$ 10,607
Software	1,790	2,788
Furniture and fixtures	35	42
Leasehold improvements	474	712
	13,002	14,149
Less: Accumulated depreciation and amortization	(11,969)	(12,700)
	$ 1,033	$ 1,449

Note 5 — Business Acquisition

SensiML Acquisition

On January 3, 2019, the Company entered into a stock purchase agreement, or the Stock Purchase Agreement, with SensiML for the purchase of all of its issued and outstanding common stock in exchange for the Company's common stock, or the SensiML Acquisition.

SensiML has a software toolkit enabling IoT developers to quickly and easily create smart devices, transforming rich sensors into actionable event detectors.

SensiML's Analytics Toolkit is an end-to-end software suite that provides OEMs a straightforward process for developing pattern matching sensor algorithms using machine learning technology that are optimized for ultra-low power consumption. The SensiML Analytics Toolkit enables OEMs to quickly and easily leverage the power of local AI in edge, endpoint and wearable designs without the need for significant Data Science or Firmware Engineering resources.

The results of operations for the Company for the three and nine months ended September 29, 2019 include operating activity for SensiML since its acquisition date of January 3, 2019. For the nine months endedSeptember 29, 2019, revenues attributable to SensiML included in the condensed consolidated statement of operations were not significant. For the three and nine months ended September 29, 2019, charges of $37,000 and $111,000, respectively, were attributable to the amortization of purchased intangible assets were included in the statements of operations for respective periods. Deal costs associated with the acquisition were $104,000 for the nine months period ended September 29, 2019. Deal costs were included in general and administrative expenses in the Company's consolidated results of operations.

Purchase Price Allocation

Under the purchase accounting method, the total preliminary purchase price was allocated to SensiML's net tangible and intangible assets based upon their estimated fair values as of the acquisition date. The excess purchase price over the value of the net tangible and identified intangible assets was recorded as goodwill. During the measurement period, which can be no more than one year from the date of acquisition, the Company expects to continue to obtain information to determine the final fair value of the net assets acquired at the acquisition date during the measurement period. Assets acquired and liabilities assumed are recorded based on valuations derived from estimated fair value assessments and assumptions used by the Company. Thus, the provisional measurements of fair value discussed above are subject to change. The Company expects to finalize the valuation as soon as practicable, but not later than one year from the acquisition date. While the Company believes that its estimates and assumptions underlying the valuations are reasonable, different estimates and assumptions could result in different valuations assigned to the individual assets acquired and liabilities assumed, and the resulting amount of goodwill.

Intangible assets associated with the acquisition is primarily attributable to the future technology, market presence and knowledgeable and experienced workforce. The fair value assigned to identifiable intangible assets acquired was determined using the income approach taking into account the Company’s consideration of a number of inputs, including an independent third-party analysis that was based upon estimates and assumptions provided by the Company. These estimates and assumptions were determined through established and generally accepted valuation techniques. The estimated fair value of the tangible and intangible assets acquired was allocated at SensiML’s acquisition date. Goodwill is not amortized for financial accounting purposes and is not expected to be deductible for income tax purposes

The Stock Purchase Agreement contains customary representations and warranties between the Company and SensiML, who agreed to indemnify each other for certain breaches of representations, warranties, covenants and other specified matters. Approximately $200,000 in value of the Company’s common stock of the purchase price was placed in escrow as security for post-closing working capital adjustments. Escrow period ends at the close of the business day on January 2, 2020.

Note 6 — Intangible Assets

The following table provides the details of the carrying value of intangible assets recorded from the acquisition of SensiML during the nine month period ended September 29, 2019 (in thousands):

	September 29, 2019		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Developed technology	$ 959	$ (72)	$ 887
Customer relationships	81	(30)	51
Trade names and trade marks	116	(9)	107
Total acquired identifiable intangible assets	$ 1,156	$ (111)	$ 1,045

The following table provides the details of future annual amortization of intangible assets, based upon the current useful lives as of September 29, 2019 (in thousands):

Annual Fiscal Years	Amount
2019 (remaining period)	$ 38
2020	148
2021	107
2022	107
2023	107
Thereafter	538
Total	$ 1,045

Note 7 — Debt Obligations

Revolving Line of credit

On September 28, 2018, the Company entered into a Loan and Security Agreement or Loan Agreement with Heritage Bank. The Loan Agreement provided for, among other things, the Revolving Facility with aggregate commitments of $9,000,000. Pursuant to the Loan Agreement, the Revolving Facility will bear interest at a rate equal to half percentage point (0.50%) above the variable rate of interest, per annum, that appears in The Wall Street Journal from time to time, whether or not such announced rate is the lowest rate available from Heritage Bank.

On December 21, 2018, the Company entered into an Amended and Restated Loan and Security Agreement, or the Amended and Restated Loan Agreement with Heritage Bank to replace in its entirety the Loan Agreement. The Amended and Restated Loan Agreement increased the Revolving Facility from $9,000,000 to $15,000,000. The Amended and Restated Loan Agreement requires the Company to maintain at least $3,000,000 in unrestricted cash at Heritage Bank. The Company was in compliance with all loan covenants under the Amended and Restated Loan Agreement as of the end of the current reporting period.

On November 6, 2019 the Company entered into a First Amendment to the Amended and Restated Loan Agreement to extend the maturity date of the Revolving Facility for one year through September 28, 2021. Under this amendment, the Revolving Facility advances shall bear interest, on the outstanding daily balance thereof, at a rate per annum equal to the greater of (i) one half of one percentage point (0.50%) above the Prime Rate, or (ii) five and one halfof one percentage points (5.50%).

For the three and nine months ended September 29, 2019, the Revolving Facility bear interest at a rate equal to half percentage point (0.50%) above the variable rate of interest, per annum, that appears in The Wall Street Journal from time to time, whether or not such announced rate is the lowest rate available from Heritage Bank. As of September 29, 2019 and December 30, 2018, the Company had $15.0 million of revolving debt outstanding with an interest rates of 5.5% and 6.0% per annum, respectively. On October 1, 2019, the Company repaid $9.0 million of its outstanding debt under the Revolving Facility with Heritage Bank.

Note 8 — Leases

The Company entered into operating leases for office space for its headquarter, domestic and foreign subsidiaries and sales offices. Finance leases are primarily engineering design software. Operating leases generally have lease terms of 1 year to 5 years. Finance leases are generally 2 years to 3 years. During the nine months ended September 29, 2019, the Company recognized right-of-use assets of approximately $2.2 million and lease liability of approximately $2.1 million relating to the operating leases signed for the premises of its headquarters in San Jose, its San Diego office and its subsidiary SensiML in Oregon. The Company exited Sunnyvale premises lease in July 2019.

The following table provides the activity related to operating and finance leases (in thousands):

	Three Months Ended September 29, 2019	Nine Months Ended September 29, 2019
Rent expenses relating to operating leases:		
Fixed	$ 186	$ 596
Variable	—	—
Short term	6	33
Total	192	629
Finance lease amortization costs:		
Amortization of ROU asset	91	273
Interest	3	14
Total	$ 94	$ 287

The following table provides the details of supplemental cash flow information (in thousands):

	Nine Months Ended September 29, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows used for operating leases	$ 633
Operating cash flows used for finance leases	20
Financing cash flows used for financing leases	283
Total	$ 936
Right-of-use assets obtained in exchange for obligations:	
Operating leases	$ 1,920
Finance leases	250
Total	$ 2,170

The following table provides the details of right-of-use assets and lease liabilities as ofSeptember 29, 2019 (in thousands):

	September 29, 2019
Right-of-use assets:	
Operating leases	$ 1,920
Finance leases	250
Total	$ 2,170
Lease liabilities:	
Operating leases	1,944
Finance leases	141
Total	$ 2,085

The following table provided the details of future lease payments for operating and finance leases as of September 29, 2019 (in thousands):

Annual Fiscal Years	Operating	Finance
2019 (Remaining period)	$ 157	$ 86
2020	611	63
2021	494	—
2022	409	—
2023	421	—
Thereafter	106	—
Total lease payments	2,198	149
Less: Interest	(254)	(8)
Present value of lease liabilities	$ 1,944	$ 141

The following table provides the details of lease terms and discount rates as of September 29, 2019:

	September 29, 2019
Right-of-use assets:	
Weighted-average remaining lease term (years)	
Operating leases	4.00
Finance leases	0.44
Weighted-average discount rates:	
Operating leases	5.99 %
Finance leases	6.89 %

Note 9 — Fair Value Measurements

Pursuant to the accounting guidance for fair value measurements and its subsequent updates, fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be recorded at fair value, the Company considers the principal or most advantageous market and assumptions that market participants would use when pricing the asset or liability.

Our cash and cash equivalents include money market account balance of $23.9 million and money market funds of $262,000 as of September 29, 2019 and December 30, 2018, respectively. Investment in money market funds was classified within level 1 of the fair value hierarchy because they were valued using quoted market prices for identical assets. Fair value of the money market account balance with Heritage Bank equals to book value.

Note 10 — Stockholders' Equity

Common Stock and Preferred Stock

As of September 29, 2019, the Company was authorized to issue 200 million shares of common stock and had 10 million shares of authorized but unissued shares of preferred stock. Without any further vote or action by the Company's stockholders, the Board of Directors has the authority to determine the powers, preferences, rights, qualifications, limitations or restrictions granted to or imposed upon any wholly unissued shares of undesignated preferred stock.

Issuance of Common Stock

On June 21, 2019, the Company closed an underwritten public offering of 18.4 million shares of common stock, $0.001 par value per share at a price of $ 0.50 per share, which included 2.4 million shares issued pursuant to the underwriters' full exercise of their over-allotment option. The Company received net proceeds from the offering of approximately $8.0 million, net of underwriter's commission and other offering expenses paid as of the third quarter of 2019.

On March 15, 2019, the Company filed a shelf registration statement on Form S-3, under which the Company may, from time to time, sell securities in one or more offerings up to a total amount of $75 million. The Company's shelf registration statement was declared effective on March 29, 2019.

In May, 2018, the company issued an aggregated of 13.5 million shares of common stock, and warrants to purchase up to an aggregate of 5.4 million shares of common stock in a confidentially marketed underwritten offering. The common stock and warrants were issued in units, or the Units, with each Unit consisting of (i) one share of common stock and (ii) a warrant to purchase 0.40 of a share of common stock, at a price of $1.15 per Unit. The Company received total net proceeds from the offering of $13.9 million.

The warrants are exercisable any time for a period of 60 months from the date of issuance on May 29, 2018, and are exercisable at a price of $1.38 per share. The Company allocated the proceeds between the common stock and the warrants based on the relative fair value of each on the date of issuance. The estimated grant date fair value was $0.57 per warrant and was calculated based on the following assumptions used in the Black-Scholes model: expected term of 5 years, risk-free interest rate of 2.58%, expected volatility of 52.75% and expected dividend of zero.

Note 11 — Employee Stock Plans

2019 Stock Plan

On April 24, 2019, the Company's Board of Directors and shareholders approved the 2019 Stock Plan, or 2019 Plan, to replace the 2009 stock Plan, or the 2009 Plan. Under the 2019 Plan, 5,000,000 shares of common stock are available for grants, plus any shares subject to any outstanding options or other awards granted under the Company's 2009 Plan that expire, are forfeited, cancelled, returned to the Company for failure to satisfy vesting requirements, settled for cash or otherwise terminated without payment being made thereunder. The remaining balance of available shares under the 2009 Plan of 4,186,979 were cancelled as of April 24, 2019. As of September 29, 2019, approximately 4.0 million shares of the Company's common stock were reserved for issuance under the 2019 Plan.

Employee Stock Purchase Plan

The 2009 Employee Stock Purchase Plan, or the 2009 ESPP, was adopted in March 2009. The 2009 ESPP was amended by the Board of Directors in January 2015 and in February 2017, and was approved by the Company's stockholders on April 23, 2015 and April 26, 2017, to reserve an additional 1.0 million and 1.5 million shares of common stock, respectively, for issuance under the 2009 ESPP.

As of September 29, 2019, approximately 873,000 shares of the Company's common stock were reserved for issuance under the 2009 ESPP. On May 6, 2019, the Board of Directors approved the extension of the term of the 2009 ESPP to March 5, 2029, which also requires the stockholders' ratification within 12 months of the approval by the Board of Directors. The Company plans to submit the extension of the term of the 2009 ESPP for our stockholders to ratify in the next annual general meeting, if not sooner.

Note 12 — Stock-Based Compensation

Stock-based compensation expense included in the Company's consolidated financial statements for the three and nine months ended September 29, 2019 and September 30, 2018 was as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 29, 2019	September 30, 2018	September 29, 2019	September 30, 2018
Cost of revenue	$ 15	$ 30	$ 59	$ 99
Research and development	521	220	1,708	610
Selling, general and administrative	212	266	723	718
Total costs and expenses	$ 748	$ 516	$ 2,490	$ 1,427

No stock-based compensation was capitalized during any period presented above.

No stock options were granted during the three and nine-month periods ended September 29, 2019 and September 30, 2018.

Stock-Based Compensation Award Activity

The following table summarizes the activity in the shares available for grant under the 2019 Plan and 2009 Plan during the nine months ended September 29, 2019 (in thousands):

	Shares Available for Grants	
	2019 Plan	2009 Plan
Balance at December 30, 2018	—	6,760
Authorized	5,000	—
RSUs granted	(1,261)	(3,355)
RSUs forfeited or expired	198	762
Options forfeited	15	20
Plan shares expired	—	(4,187)
Balance at September 29, 2019	3,952	—

Stock Options

The following table summarizes stock options outstanding and stock option activity under the 2009 Plan and the 2019 Plan, and the related weighted average exercise price, for the nine months ended September 29, 2019:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Term	Aggregate Intrinsic Value
	(in thousands)		(in years)	(in thousands)
Balance outstanding at December 30, 2018	3,201	$ 2.18		
Forfeited or expired	(580)	1.70		
Exercised	(4)	0.78		
Balance outstanding at September 29, 2019	2,617	$ 2.29	3.70	$ —
Exercisable at September 29, 2019	2,433	$ 2.40	3.46	$ —
Vested and expected to vest at September 29, 2019	2,603	$ 2.30	3.69	$ —

The aggregate intrinsic value in the table above represents the total pretax intrinsic value, based on the Company's closing stock price of $0.35 as of September 29, 2019, which would have been received by the option holders had all option holders exercised their options as of that date.

The total intrinsic value of options exercised during the three months ended September 29, 2019 and September 30, 2018 was approximately $0 and $5,000, respectively. The total intrinsic value of options exercised during the nine months endedSeptember 29, 2019 and September 30, 2018 was approximately $0 as the stock price was lower than exercise price and $5,000, respectively. Total cash received from employees as a result of employee stock option exercises during the nine months ended September 29, 2019 and September 30, 2018 was approximately $3,600 and $5,000, respectively. The Company settles employee stock option exercises with newly issued common shares. In connection with these exercises, there was no tax benefit realized by the Company due to the Company's current loss position. Total stock-based compensation related to stock options was approximately $24,000 and $30,000 for the three months ended September 29, 2019 and September 30, 2018, respectively, and approximately $73,000 and $102,000 for the nine months ended September 29, 2019 and September 30, 2018, respectively.

Restricted Stock Units

The Company grants restricted stock units or RSUs, to employees and directors with various vesting terms. RSUs entitle the holder to receive, at no cost, one common share for each RSU as it vests. In general, the Company's policy is to withhold shares in settlement of employee tax withholding obligations upon the vesting of RSUs. The stock-based compensation related to RSUs was approximately $724,000 and $435,000 for the three months ended and approximately $2.4 million and $1.2 million for nine months ended September 29, 2019 and September 30, 2018, respectively. As of September 29, 2019 and September 30, 2018, there was approximately $2.7 million and $2.1 million, respectively, in unrecognized compensation expense related to RSUs. The remaining unrecognized stock-based compensation expense is expected to be recorded over a weighted average period of 1.7 years.

A summary of activity for the Company's RSUs for the nine months ended September 29, 2019 is as follows:

	RSUs & PRSUs Outstanding	
	Number of Shares	Weighted Average Grant Date Fair Value
	(in thousands)	
Nonvested at December 30, 2018	2,570	$ 1.23
Granted	4,615	0.81
Vested	(1,552)	0.64
Forfeited	(415)	—
Nonvested at September 29, 2019	5,218	$ 1.10

Employee Stock Purchase Plan

As of September 29, 2019, 873,000 shares remained available for issuance under the 2009 ESPP. For the three months ended September 29, 2019 and September 30, 2018, the Company recorded stock-based compensation expense related to the 2009 ESPP of approximately $0 and $51,000, respectively. For the nine months ended September 29, 2019 and September 30, 2018, the Company recorded stock-based compensation expense related to the 2009 ESPP of approximately $60,000 and $168,000, respectively. The weighted average estimated fair value, as defined by the amended authoritative guidance, of rights issued pursuant to the Company's 2009 ESPP during the third quarter ended September 29, 2019 and September 30, 2018, was $0 and $0.47, respectively, per right, respectively.

The fair value of rights issued pursuant to the Company's 2009 ESPP was estimated on the commencement date of each offering period using the following weighted average assumptions:

	Three Months Ended		Nine Months Ended	
	September 29, 2019	September 30, 2018	September 29, 2019	September 30, 2018
Expected term (months)	—	6.00	6.00	6.00
Risk-free interest rate	—	2.09 %	2.40 %	2.09 %
Volatility	—	44.76 %	53.77 %	44.76 %
Dividend yield	—	—	—	—

As of September 29, 2019, there was no unrecognized stock-based compensation expense relating to the Company's 2009 ESPP. ESPP grants were suspended until the extension of the term of 2009 ESPP is ratified by the stockholders in the annual general meeting to be held in 2020.

Note 13 — Income Taxes

The Company recorded a net income tax expense of approximately $70,000 and $29,000 for the three months ended September 29, 2019 and September 30, 2018, respectively. For the nine months ended September 29, 2019 and September 30, 2018 the Company recorded a net income tax benefit of approximately $171,000 and tax expense of $119,000 respectively. A majority of the income tax expense for the third quarters of 2019 and 2018 and nine months ended September 29, 2019 and September 30, 2018 relates to the Company's foreign subsidiaries, which are cost-plus entities. Income tax benefit for the nine months ended September 29, 2019 relates to the deferred tax benefit arising from Intangible assets acquired from the acquisition of SensiML, which was offset by the income taxes from the Company's foreign subsidiaries.

The Company believes it is more likely than not that federal and state net deferred tax assets will not be fully realized. In assessing the realizability of deferred tax assets, the Company’s management considers whether it is more likely than not that some portion or all of our deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. A valuation allowance is recorded for loss carry forwards and other deferred tax assets where it is more likely than not that such deferred tax assets will not be realized. Accordingly, the Company continues to maintain a valuation allowance against all of U.S. and certain foreign net deferred tax assets as of September 29, 2019. The Company continues to maintain a full valuation allowance against net federal, state and certain foreign deferred tax assets until there is sufficient evidence to support recoverability of the Company’s deferred tax assets.

The Company had no unrecognized tax benefits as of September 29, 2019 and December 30, 2018, which would affect the Company's effective tax rate. The Company does not anticipate any material changes to its unrecognized tax benefits during the next 12 months.

Accrued interest and penalties related to unrecognized tax benefits are recognized as part of the income tax provision in the condensed consolidated statements of operations.

The Company is subject to U.S. federal income tax as well as income taxes in many U.S. states and foreign jurisdictions in which the Company operates. The U.S. tax years from 1999 forward remain effectively open to examination due to the carryover of unused net operating losses and tax credits.

Under the Tax Reform Act of 1986, the amount of and the benefit from net operating loss carryforwards and credit carryforwards may be impaired or limited in certain circumstances. Events which may restrict utilization of a company's net operating loss and credit carryforwards include, but are not limited to, certain ownership change limitations as defined in Internal Revenue Code Section 382 and similar state provisions. In the event the Company has had a change of ownership, utilization of carryforwards could be restricted to an annual limitation. The annual limitation may result in the expiration of net operating loss carryforwards and credit carryforwards before utilization.

The Company has not undertaken a study to determine if its net operating losses are limited. In the event the Company previously experienced an ownership change, or should experience an ownership change in the future, the amount of net operating losses and research and development credit carryovers available in any taxable year could be limited and may expire unutilized.

Note 14 — Information Concerning Product Lines, Geographic Information and Revenue Concentration

The Company identifies its business segment based on business activities, management responsibility and geographic location. For all periods presented, the Company operated in a single reportable business segment.

The following is a breakdown of revenue by product line (in thousands):

	Three Months Ended		Nine Months Ended	
	September 29, 2019	September 30, 2018	September 29, 2019	September 30, 2018
Revenue by product line(1):				
New products	$ 1,015	$ 1,523	$ 2,413	$ 4,404
Mature products	1,143	1,987	5,026	4,992
Total revenue	$ 2,158	$ 3,510	$ 7,439	$ 9,396

(1) For all periods presented: New products include all products manufactured on 180 nanometer or smaller semiconductor processes, eFPGA IP license, Quick AI and Software revenues. Mature products include all products produced on semiconductor processes larger than 180 nanometer.

The following is a breakdown of revenue by shipment destination (in thousands):

	Three Months Ended		Nine Months Ended	
	September 29, 2019	September 30, 2018	September 29, 2019	September 30, 2018
Revenue by geography:				
Asia Pacific (1)	$ 528	$ 1,737	$ 2,496	$ 4,030
North America (2)	1,518	1,370	3,747	4,409
Europe	112	403	1,196	957
Total revenue	$ 2,158	$ 3,510	$ 7,439	$ 9,396

(1) Asia Pacific includes revenue from Japan of $510,000, or 24% of total revenue for the quarter ended September 29, 2019, and revenue from China of $842,000, or 24% of total revenue, for the quarter ended September 30, 2018. For the nine months ended September 29, 2019 and September 30, 2018, revenue from Japan was $1.3 million, or 17% and $1.2 million or 13% of total revenue, respectively. Revenue from China was $1.4 million, or 15% of total revenue for the nine months ended September 30, 2018, respectively.

(2) North America includes revenue from the United States of $1.4 million, or 67% of total revenue, and $1.4 million, or 39% of total revenue, for the three months ended September 29, 2019 and September 30, 2018, respectively. For the nine months ended September 29, 2019 and September 30, 2018 revenue from the United States was $3.6 million, or 49% of total revenue, and $4.3 million, or 46% of total revenue, respectively.

The following distributors and customers accounted for 10% or more of the Company's revenue for the periods presented:

	Three Months Ended		Nine Months Ended	
	September 29, 2019	September 30, 2018	September 29, 2019	September 30, 2018
Distributor "A"	55%	29%	43%	33%
Distributor "C"	*	*	10%	*
Distributor "E"	11%	*	*	*
Distributor "G"	*	11%	12%	*
Distributor "I"	*	13%	*	*
Customer "G"	*	17%	*	12%
Customer "B"	17%	12%	14%	12%
Customer "F"	11%	*	*	*
Customer "I"	*	10%	11%	*
Customer "J"	10%	*	*	12%
Customer "K"	*	13%	*	*
Customer "N"	14%	*	*	*

The following distributors and customers accounted for 10% or more of the Company's accounts receivable as of the dates presented:

	September 29, 2019	December 30, 2018
Distributor "A"	42 %	35 %
Distributor "E"	18 %	*
Distributor "G"	*	10 %
Distributor "J"	20 %	*
Customer "M"	*	23 %

* Represents less than 10% of revenue and accounts receivable as of the date presented.

As of September 29, 2019, 11% of the Company's long-lived assets, including property and equipment and other assets, were located outside the United States.

Note 15 — Commitments and Contingencies

Commitments

The Company's manufacturing suppliers require the forecast of wafer starts several months in advance. The Company is required to take delivery of and pay for a portion of forecasted wafer volume. As of September 29, 2019, and December 30, 2018, the Company had $74,000 and $22,000, respectively, of outstanding commitments for the purchase of wafer and finished goods inventory.

The Company has obligations with certain suppliers for the purchase of other goods and services entered into in the ordinary course of business. As of September 29, 2019, total outstanding purchase obligations for other goods and services were $795,000, all of which were due within the next twelve months.

Note 16 — Litigation

From time to time, the Company may become involved in legal actions arising in the ordinary course of business including, but not limited to, intellectual property infringement and collection matters. Absolute assurance cannot be given that any such third party assertions will be resolved without costly litigation; in a manner that is not adverse to the Company’s financial position, results of operations or cash flows; or without requiring royalty or other payments which may adversely impact gross profit. As of September 29, 2019, the Company was not involved in any litigation.

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

Forward-Looking Statements

The following Management's Discussion and Analysis of Financial Condition and Results of Operations, as well as information contained in "Risk Factors" in Part II, Item 1A and elsewhere in this Quarterly Report on Form 10-Q, contain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. We intend that these forward-looking statements be subject to the safe harbor created by those provisions. Forward-looking statements are generally written in the future tense and/or are preceded by words such as "will," "may," "should," "forecast," "could," "expect," "suggest," "believe," "anticipate," "intend," "plan," "future," "potential," "target," "seek," "continue," "if" or other similar words. Forward-looking statements include statements regarding our strategies as well as (1) our revenue levels, including the commercial success of our solutions and new products, (2) the conversion of our design opportunities into revenue, (3) our liquidity, (4) our gross profit and breakeven revenue level and factors that affect gross profit and the break-even revenue level, (5) our level of operating expenses, (6) our research and development efforts, (7) our partners and suppliers, (8) industry and market trends, (9) our manufacturing and product development strategies and (10) our competitive position.

The following discussion should be read in conjunction with the attached unaudited condensed consolidated financial statements and notes thereto, and with our audited consolidated financial statements and notes thereto for the fiscal year ended December 30, 2018, found in our Annual Report on Form 10-K filed with the Securities and Exchange Commission, or SEC, on March 15, 2019, as amended. Although we believe that the assumptions underlying the forward-looking statements contained in this Quarterly Report are reasonable, any of the assumptions could be inaccurate, and therefore there can be no assurance that such statements will be accurate. The risks, uncertainties and assumptions referred to above that could cause our results to differ materially from the results expressed or implied by such forward-looking statements include, but are not limited to, those discussed under the heading "Risk Factors" in Part II, Item 1A hereto and the risks, uncertainties and assumptions discussed from time to time in our other public filings and public announcements. All forward-looking statements included in this document are based on information available to us as of the date hereof. In light of the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of such information should not be regarded as a representation by us or any other person that the results or conditions described in such statements or our objectives and plans will be achieved. Furthermore, past performance in operations and share price is not necessarily indicative of future performance. We disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise that may arise after the date of this Quarterly Report on Form 10-Q.

Overview

We develop low power, multi-core semiconductor platforms and intellectual property, or IP, for artificial intelligence, or AI, voice and sensor processing. The solutions include an eFPGA for hardware acceleration and pre-processing, and heterogeneous multi-core SoCs that integrate eFPGA with other processors and peripherals. The SensiML Analytics Toolkit from our recently acquired wholly owned subsidiary, SensiML Corporation, or SensiML, completes the "full stack" end-to-end solution with accurate sensor algorithms using AI technology. The full range of platforms, software tools and eFPGA IP enables the practical and efficient adoption of AI, voice and sensor processing across mobile, wearable, hearable, consumer, industrial, edge and endpoint IoT applications.

Our solutions are created from our new silicon platforms including our EOS™, QuickAI™, SensiML Analytics Studio, ArcticLink® III, PolarPro®3, PolarPro II, PolarPro, and Eclipse II products (which together comprise our new product category). Our mature products include primarily FPGA families named pASIC®3 and QuickRAM® as well as programming hardware and design software. In addition to delivering our own semiconductor solutions, we have an IP business that licenses our eFPGA technology for use in other semiconductor companies SoCs. We began delivering our eFPGA IP product ArcticPro™ in 2017, which is included in the new product revenue category. Through the acquisition of SensiML, we now have an AI software platform that includes Software-as-a-Service, or SaaS, subscriptions for development, per unit license fees when deployed in production, and proof-of-concept services, all of which are also included in the new product revenue category.

Our solutions typically fall into one of three categories: Sensor Processing, Display and Visual Enhancement, and Smart Connectivity. Our solutions include a unique combination of our silicon platforms, IP cores, software drivers, and in some cases, firmware and application software. All of our silicon platforms are standard devices and must be programmed to be effective in a system. Our IP that enables always-on context-aware sensor applications includes our Flexible Fusion Engine, our Sensor Manager and Communications Manager technologies as well as IP that (i) improves multimedia content, such as our Visual Enhancement Engine, or VEE, technology, and Display Power Optimizer, or DPO, technology; and (ii) implements commonly used mobile system interfaces, such as Low Voltage Differential Signalling, or LVDS, Mobile Industry Processor Interface, or MIPI, and Secure Digital Input Output, or SDIO. We provide complete solutions by first architecting the solution jointly with our customer's or ecosystem partner's engineering group, selecting the appropriate solution platform and Proven System Blocks, or PSBs, providing custom logic, integrating the logic, programming the device with the PSBs and/or firmware, providing software drivers or application software required for the customer's application, and supporting the customer on-site during integration, verification and testing. In many cases, we deliver software algorithms that have been optimized for use in a QuickLogic silicon platform.

On January 3, 2019, we acquired all of SensiML's issued and outstanding common stock in exchange for the Company's Common Stock. SensiML operates as one of our divisions, and will continue to develop, expand, and optimize its platform-independent software solutions to support SoCs from other semiconductor companies as well as our SoCs, QuickAI™ Platforms and licensees of our ArcticPro™ eFPGA IP.

Through the acquisition of SensiML, our core IP also includes the SensiML AI Toolkit that enables OEMs to develop AI software for a broad array of resource-constrained time-series sensor endpoint applications. These include a wide range of consumer and industrial sensing applications.

We also work with mobile processor manufacturers, sensor manufacturers, and voice recognition, sensor fusion and context awareness algorithm developers in the development of reference designs. Through reference designs that incorporate our solutions, we believe mobile processor manufacturers, sensor manufacturers, and sensor and voice algorithm companies can expand the available market for their respective products. Furthermore, should a solution developed for a processor manufacturer or sensor and/or sensor algorithm company be applicable to a set of common OEMs or Original Design Manufacturers, or ODMs, we can amortize our Research and Development, or R&D, investment over that set of OEMs or ODMs. There may also be cases when platform providers that intend to use always-on voice recognition will dictate certain performance requirements for the combined software/hardware solution before the platform provider certifies and/or qualifies our product for use by end customers.

Our ArcticPro eFPGA IP is currently developed on 65nm, 40nm and 22nm process nodes. The licensable IP is generated by a compiler tool that enables licensees to create an eFPGA block that they can integrate into their SoC without significant involvement by us. We believe this flow enables a scalable support model for us.

In addition to working directly with our customers, we partner with other companies that are experts in certain technologies to develop additional IP, reference platforms and system software to provide application solutions, particularly in the area of hardware acceleration for AI-type applications. We also work with mobile processor and communications semiconductor device manufacturers and companies that supply sensor, algorithms and applications. The depth of these relationships vary depending on the partner and the dynamics of the end market being targeted, but they are typically a co-marketing relationship that includes joint account calls, promotional activities and/or engineering collaboration and developments, such as reference designs. For our sensor processing solutions, we collaborate with sensor manufacturers to ensure interface compatibility. We also collaborate with sensor and voice/audio software companies, helping them optimize their software technology on our silicon platforms in terms of performance, power consumption and user experience.

For our eFPGA strategy, we work with semiconductor manufacturing partners to ensure our eFPGA IP is proven for a given foundry and process node before it is licensed to an SoC company.

In order to grow our revenue from its current level, we depend upon increased revenue from our new products including existing new product platforms, eFPGA IP and platforms currently in development. We expect our business growth to be driven mainly by our silicon solutions, eFPGA IP and SensiML AI Software. Therefore, our revenue growth needs to be strong enough to enable us to sustain profitability while we continue to invest in the development, sales and marketing of our new solution platforms, IP and software.

During the third quarter of 2019, we generated total revenue of $2.2 million, which represents an increase of 3% compared to the second quarter of 2019 and represents a decrease of 39% compared to the third quarter of 2018. Our new product revenue in the third quarter was $1.0 million, an increase of 43% from the prior quarter and a decrease of 33% from the third quarter of 2018. Our mature product revenue was $1.1 million in the third quarter of 2019, which represents a decrease of 17% from the prior quarter and 42% compared to the third quarter of 2018. We expect our mature product revenue to continue to fluctuate over time.

We devote substantially all of our development, sales and marketing efforts to our new sensor processing solutions using our EOS™ S3 platforms, derivative products based on software-driven features, development of additional new products and solution platforms, our new eFPGA IP licensing and QuickAI initiatives. Overall, we reported a net loss of $4.3 million for the third quarter of 2019, an increase of 31% compared with the third quarter of 2018 and a decrease of 8% compared with the second quarter of 2019. The increase compared with the third quarter of 2018 was primarily due to the SensiML acquisition and decrease in overall revenue. Net loss includes operating expenses relating to the new subsidiary, SensiML, of $729,000 and $2.1 million for the three and nine months ended September 29, 2019, respectively.

Critical Accounting Estimates

The methods, estimates and judgments we use in applying our most critical accounting policies have a significant impact on the results we report in our consolidated financial statements. The SEC has defined critical accounting policies as those that are most important to the portrayal of our financial condition and results of operations and require us to make difficult and subjective judgments, often as a result of the need to make estimates of matters that are inherently uncertain. Based on this definition, our critical policies include revenue recognition, valuation of inventories, including identification of excess quantities and product obsolescence, valuation of investments, valuation of long-lived assets, valuation of goodwill and intangible assets, including the estimate of related useful lives, measurement of stock-based compensation and estimation of accrued liabilities. We believe that we apply judgments and estimates in a consistent manner and that this consistent application results in consolidated financial statements and accompanying notes that fairly represent all periods presented. However, any factual errors or errors in these judgments and estimates may have a material impact on our financial statements. During the three and nine months ended September 29, 2019, there were no changes in our critical accounting policies from our disclosure in our Annual Report on Form 10-K for the fiscal year ended December 30, 2018, filed with the SEC on March 15, 2019, as amended, except for the new accounting standards adopted in the first quarter of 2019 as described in Note 2 to the condensed consolidated financial statements as of and for the three and nine months ended September 29, 2019, and except for our estimates relating to goodwill and intangible assets associated with the acquisition of SensiML on January 3, 2019, as described in Note 5 to the condensed consolidated financial statements as of and for the three and nine months ended September 29, 2019. For a discussion of critical accounting policies and estimates, please see Item 7 in our Annual Report on Form 10-K for the fiscal year ended December 30, 2018, filed with the SEC on March 15, 2019, as amended. See also Note 2 to the Unaudited Condensed Consolidated Financial Statements as of and for the three and nine months ended September 29, 2019 for the details of the newly adopted accounting standards and acquisition of SensiML.

The Company adopted Accounting Standards Update, or ASU, No. 2016-02, *Leases (Topic 842)* and related ASUs, which provide supplementary guidance and clarifications on December 31, 2018, utilizing the modified retrospective transition method through a cumulative-effect adjustment at the beginning of the first quarter of 2019. Additionally, the Company elected the practical expedient approach and did not reassess whether any contracts that existed prior to adoption have or contain leases or the classification of our existing leases. In accordance with the adoption of ASU No. 2016-02, the Company recognized right-of-use assets of approximately $975,000 and lease liabilities of approximately $939,000 on the Company's Consolidated Balance Sheets as of and for the three months ended March 31, 2019, with no material impact to its Consolidated Statements of Operations. As of September 29, 2019, the Company has right-of-use assets of approximately $2.2 million and lease liability of approximately $2.1 million on the Company's Consolidated Balance Sheet. See Notes 2 and 8 to the Unaudited Consolidated Financial Statements as of and for the three and nine months ended September 29, 2019 for the details.

The Company adopted ASU No. 2017-04, *Simplifying the Test for Goodwill Impairment*, which simplifies the subsequent measurement of goodwill by removing the requirement to perform a hypothetical purchase price allocation to compute the implied fair value of goodwill to measure impairment. Instead, any goodwill impairment will equal the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. Furthermore, the ASU eliminates the requirements for any reporting unit with a zero or negative carrying amount to perform a qualitative assessment and, if it fails that qualitative test, to perform step 2 of the goodwill impairment test. As permitted by the ASU, the Company has elected to early adopt this guidance effective December 31, 2018 for goodwill impairment test, which will be performed during the fourth quarter of fiscal 2019. The adoption of this guidance did not have a material impact on our consolidated financial statements.

Results of Operations

The following table sets forth the percentage of revenue for certain items in our condensed consolidated statements of operations for the periods indicated:

	Three Months Ended		Nine Months Ended	
	September 29, 2019	September 30, 2018	September 29, 2019	September 30, 2018
Revenue	100 %	100 %	100 %	100 %
Cost of revenue	52 %	50 %	46 %	50 %
Gross profit	48 %	50 %	54 %	50 %
Operating expenses:				
Research and development	146 %	70 %	129 %	80 %
Selling, general and administrative	97 %	71 %	92 %	82 %
Loss from operations	(195)%	(91)%	(167)%	(112)%
Interest expense	(3)%	(1)%	(4)%	(1)%
Interest income and other (expense), net (1)	3 %	— %	2 %	— %
Loss before income taxes	(195)%	(92)%	(169)%	(113)%
Provision for income taxes	3 %	1 %	(2)%	1 %
Net loss	(198)%	(93)%	(167)%	(114)%

(1) Insignificant percentages are rounded to zero percentage (-%) for disclosure.

Three Months Ended September 29, 2019 Compared to Three Months Ended September 30, 2018

Revenue

The table below sets forth the changes in revenue for the three months ended September 29, 2019, as compared to the three months ended September 30, 2018 (in thousands, except percentage data):

	Three Months Ended				Change	
	September 29, 2019		September 30, 2018			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
Revenue by product line(1):						
New products	$ 1,015	47 %	$ 1,523	43 %	$ (508)	(33)%
Mature products	1,143	53 %	1,987	57 %	(844)	(42)%
Total revenue	$ 2,158	100 %	$ 3,510	100 %	$ (1,352)	(39)%

(1) For all periods presented: New products include all products manufactured on 180 nanometer or smaller semiconductor processes, eFPGA IP license, QuickAI and Software revenues. Mature products include all products produced on semiconductor processes larger than 180 nanometer.

The net decrease of $508,000 in the revenue of new products was primarily due to a decrease in display bridge solutions, which were not fully offset by other new products. The $844,000 decrease in the revenue of mature products was primarily due to lower shipments to military and aviation sectors.

Gross Profit

The table below sets forth the changes in gross profit for the three months ended September 29, 2019 as compared to the three months ended September 30, 2018 (in thousands, except percentage data):

	Three Months Ended				Change	
	September 29, 2019		September 30, 2018			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
Revenue	$ 2,158	100 %	$ 3,510	100 %	$ (1,352)	(39)%
Cost of revenue	1,117	52 %	1,767	50 %	(650)	(37)%
Gross profit	$ 1,041	48 %	$ 1,743	50 %	$ (702)	(40)%

In the third quarter of 2019, $702,000 or 2% gross profit margin percentage was lower as compared to the same quarter in the prior year, primarily due to a decrease of higher gross margin mature products, which was partially offset by a decrease of lower margin Display Bridge revenue. The sale of previously reserved inventory was $31,000 and $77,000 in the third quarters of 2019 and 2018, respectively.

Our semiconductor products have historically had long product life cycles and obsolescence has not been a significant factor in the valuation of inventories. However, as we continue to pursue opportunities in the mobile market and develop new solutions and products, our product life cycle will be shorter and the risk of obsolescence will increase. In general, our standard manufacturing lead times are longer than the binding forecasts we receive from customers.

Operating Expenses

The table below sets forth the changes in operating expenses for the three months ended September 29, 2019, as compared to the three months ended September 30, 2018 (in thousands, except percentage data):

	Three Months Ended				Change	
	September 29, 2019		September 30, 2018			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
R&D expense	$ 3,139	146 %	$ 2,461	70 %	$ 678	28 %
SG&A expense	2,095	97 %	2,509	71 %	(414)	(17)%
Total operating expenses	$ 5,234	243 %	$ 4,970	141 %	$ 264	5 %

Research and Development

Our Research and Development, or R&D, expenses consist primarily of personnel, overhead and other costs associated with sensor processing and algorithm development, programmable logic design, SoC software, QuickAI, and eFPGA development. The $678,000 increase in R&D expenses in the third quarter of 2019, as compared to the third quarter of 2018, was primarily attributable to the expanded R&D operations due to the acquisition of SensiML.

Selling, General and Administrative Expense

Our selling, general and administrative, or SG&A, expenses consist primarily of personnel and related overhead costs for sales, marketing, finance, administration, human resources and general management. The $414,000 decrease in SG&A expenses in the third quarter of 2019, as compared to the third quarter of 2018 was primarily attributable to lower facility costs, headcount and outside services.

Interest Expense and Interest Income and Other (Expense), Net

The table below sets forth the changes in interest expense and interest income and other (expense), net for the three months ended September 29, 2019 as compared to the three months ended September 30, 2018 (in thousands, except percentage data):

	Three Months Ended		Change	
	September 29, 2019	September 30, 2018	Amount	Percentage
Interest expense	$ (63)	$ (21)	$ (42)	200 %
Interest income and other (expense), net	55	17	38	224 %
	$ (8)	$ (4)	$ (4)	100 %

Interest expense relates primarily to the Company's line of credit facility. Interest income relates to the interest earned on our money market account and short-term investments on surplus cash in the Money Market Funds.

Provision for Income Taxes

The table below sets forth the changes in the provisions for income tax for the three months ended September 29, 2019 as compared to the three months ended September 30, 2018 (in thousands, except percentage data):

	Three Months Ended		Change	
	September 29, 2019	September 30, 2018	Amount	Percentage
Provision for income taxes	$ 70	$ 29	$ 41	141 %

The majority of the income tax expense relates to the Company's foreign subsidiaries, which are cost-plus entities.

The Company is subject to U.S. federal income tax as well as income taxes in many U.S. states and foreign jurisdictions in which the Company operates. The U.S. tax years from 1999 forward remain effectively open to examination due to the carryover of unused net operating losses and tax credits.

Nine Months Ended September 29, 2019 Compared to Nine Months Ended September 30, 2018

Revenue

The table below sets forth the changes in revenue for the nine months ended September 29, 2019, as compared to the nine months ended September 30, 2018 (in thousands, except percentage data):

	Nine Months Ended					
	September 29, 2019		September 30, 2018		Change	
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
Revenue by product line (1):						
New products	$ 2,413	32 %	$ 4,404	47 %	$ (1,991)	(45)%
Mature products	5,026	68 %	4,992	53 %	34	1 %
Total revenue	$ 7,439	100 %	$ 9,396	100 %	$ (1,957)	(21)%

(1) For all periods presented: New products include all products manufactured on 180 nanometer or smaller semiconductor processes, eFPGA IP license, QuickAI and Software revenues. Mature products include all products produced on semiconductor processes larger than 180 nanometers.

The $2.0 million decrease in the revenue of new products was primarily due to decreased shipment of connectivity and display bridge products, which was partially offset by eFPGA IP license revenue recognized in the first nine months of 2019. The revenue from mature products was higher by $34,000 compared with the same period of the prior year.

Gross Profit

The table below sets forth the changes in gross profit for the nine months ended September 29, 2019, as compared to the nine months ended September 30, 2018 (in thousands, except percentage data):

	Nine Months Ended				Change	
	September 29, 2019		September 30, 2018			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
Revenue	$ 7,439	100 %	$ 9,396	100 %	$ (1,957)	(21)%
Cost of revenue	3,397	46 %	4,734	50 %	(1,337)	(28)%
Gross profit	$ 4,042	54 %	$ 4,662	50 %	$ (620)	(13)%

The 4% increase in gross margin percentage was primarily due to a favorable new product mix including SensiML SaaS and eFPGA license revenue in the first nine months of 2019 compared to the first nine months of 2018. The sale of previously reserved inventory was $95,000 and $180,000 in the first nine months of 2019 and 2018, respectively.

Operating Expenses

The table below sets forth the changes in operating expenses for the nine months ended September 29, 2019, as compared to the nine months ended September 30, 2018 (in thousands, except percentage data):

	Nine Months Ended				Change	
	September 29, 2019		September 30, 2018			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
R&D expense	$ 9,596	129 %	$ 7,526	80 %	$ 2,070	28 %
SG&A expense	6,881	93 %	7,680	82 %	$ (799)	(10)%
Total Operating Expenses	$ 16,477	222 %	$ 15,206	162 %	$ 1,271	8 %

Research and Development

Our R&D expenses consist primarily of personnel, overhead and other costs associated with, sensor processing and algorithm development, programmable logic design, SoC software, QuickAI and eFPGA development. The $2.1 million increase in R&D expenses in the first nine months of 2019, as compared to the first nine months of 2018 was primarily attributable to the addition of personnel acquired as a result of the acquisition of SensiML as well as additional expenses associated with QuickAI and SoC roadmap development.

Selling, General and Administrative Expense

Our SG&A expenses consist primarily of personnel and related overhead costs for sales, marketing, finance, administration, human resources and general management. The $799,000 decrease in SG&A expenses in the first nine months of 2019, as compared to the first nine months of 2018, was primarily due to a decrease of facility costs, compensation-related costs, including stock-based compensation expenses, consulting services expenses.

Interest Expense and Interest Income and Other (Expense), Net

The table below sets forth the changes in interest expense and interest income and other (expense), net for the nine months ended September 29, 2019 as compared to the nine months ended September 29, 2018 (in thousands, except percentage data):

	Nine Months Ended		Change	
	September 29, 2019	September 30, 2018	Amount	Percentage
Interest expense	$ (270)	$ (77)	$ (193)	251 %
Interest income and other (expense), net	153	26	127	488 %
	$ (117)	$ (51)	$ (66)	129 %

Interest expense relates primarily to the Company's line of credit facility. Interest income relates to the interest earned on our money market account and short-term investments on surplus cash in the money market funds.

Provision for Income Taxes

The table below sets forth the changes in the income tax provisions for the nine months ended September 29, 2019 as compared to the nine months ended September 30, 2018 (in thousands, except percentage data):

	Nine Months Ended		Change	
	September 29, 2019	September 30, 2018	Amount	Percentage
(Benefit from) / provision for income taxes	$ (171)	$ 119	$ (290)	(244)%

Income tax benefit for the nine months ended September 29, 2019 relates to the deferred tax benefit arising from Intangible assets acquired from the acquisition of SensiML, which was offset by the income taxes from the Company's foreign subsidiaries. A majority of the income tax expense for the nine months ended September 30, 2018 relates to the Company's foreign subsidiaries, which are cost-plus entities.

As of September 29, 2019, our ability to utilize our income tax loss carryforwards in future periods is uncertain, and accordingly, we recorded a full valuation allowance against the related U.S. tax provision. We will continue to assess the realizability of deferred tax assets in future periods.

Liquidity and Capital Resources

We have financed our operating losses and capital investments through sales of common stock, finance leases, a revolving line of credit and cash flows from operations. As of September 29, 2019, the Company's principal sources of liquidity consisted of cash, cash equivalents and restricted cash of $24.8 million, including $15.0 million line of credit with Heritage Bank. The previous line of credit facility with Silicon Valley Bank, which matured on September 24, 2018, was fully paid off in July 2018.

On September 28, 2018, we entered into a Loan and Security Agreement, or Loan Agreement, with Heritage Bank. The Loan Agreement provided for, among other things, the Revolving Facility with aggregate commitments of $9,000,000. Pursuant to the Loan Agreement, the Revolving Facility will bear interest at a rate equal to half percentage point (0.50%) above the variable rate of interest, per annum, that appears in The Wall Street Journal from time to time, whether or not such announced rate is the lowest rate available from Heritage Bank.

On December 21, 2018, we entered into an Amended and Restated Loan and Security Agreement, or the Amended and Restated Loan Agreement with Heritage Bank to replace in its entirety the Loan Agreement. The Amended and Restated Loan Agreement increased the Revolving Facility from $9,000,000 to $15,000,000. The Amended and Restated Loan Agreement requires us to maintain at least $3,000,000 in unrestricted cash at Heritage Bank. We were in compliance with all loan covenants under the Amended and Restated Loan Agreement as of the end of the current reporting period. As of September 29, 2019, we had $15.0 million of outstanding revolving line of credit with an interest rate of 5.5%. We repaid $9.0 million of Heritage line of credit in October 2019, which is available for draw down.

On November 6, 2019 the Company entered into a First Amendment to the Amended and Restated Loan Agreement with Heritage Bank to extend the maturity date of the Revolving Facility for one year through September 28, 2021. Under this amendment the Revolving Facility advances shall bear interest, on the outstanding daily balance thereof, at a rate per annum equal to the greater of (i) one half of one percentage point (0.50%) above the Prime Rate, or (ii) five and one half of one percentage points (5.50%).

On June 21, 2019, the Company closed its underwritten public offering of 18.4 million shares of common stock, $0.001 par value per share at a price of $ 0.50 per share, which included 2.4 million shares issued pursuant to the underwriters' full exercise of their over-allotment option. The company received net proceeds from the offering of approximately $8.0 million, net of underwriter's commission and other offering expenses. See Note 10 to the Condensed Consolidated Financial Statements for the details.

In May 2018, we issued an aggregate of 13.5 million shares of common stock and warrants to purchase up to an aggregate of 5.4 million shares of common stock in an underwritten public offering at a combined price of $1.15 per Unit. We received total net proceeds of $13.9 million from the offering. We believe that our existing cash and cash equivalents, together with available financial resources from the Revolving Facility with Heritage Bank will be sufficient to fund our operations and capital expenditure and provide adequate working capital for the next twelve months.

Over the longer term, we anticipate that the generation of sales from our new product offerings, existing cash and cash equivalents, together with financial resources from our Revolving Facility with Heritage Bank and our ability to raise additional capital in the public capital markets will be sufficient to satisfy our operations and capital expenditures. Our Revolving Facility with Heritage Bank will expire in September 2021 and we would need to renew this line of credit or find an alternative lender prior to the expiration date. Further, any violations of debt covenants may restrict our access to any additional cash draws from the revolving line of credit, and may require our immediate repayment of the outstanding debt amounts. We believe that we will be able to either renew the Revolving Facility or obtain alternative financing on the acceptable terms. We cannot provide any assurance that we will be able to raise additional capital, if required, or that such capital will be available on terms acceptable to us. Our inability to generate sufficient sales from our new product offerings and/or raise additional capital if needed could have a material adverse effect on our operations and financial condition, including our ability to maintain compliance with our lender's financial covenants.

As of September 29, 2019, most of our cash and cash equivalents were invested in the money market account of Heritage Bank. As of September 29, 2019, our interest-bearing debt consisted of $141,000 outstanding under finance leases and $15.0 million outstanding under our Revolving Facility. See Note 7 and 8 to the Consolidated Financial Statements for more details.

Cash balances held at our foreign subsidiaries were approximately $647,000 and $656,000 as of September 29, 2019 and December 30, 2018, respectively. Earnings from our foreign subsidiaries are currently deemed to be indefinitely reinvested. We do not expect such reinvestment to affect our liquidity and capital resources, and we continually evaluate our liquidity needs and ability to meet global cash requirements as a part of our overall capital deployment strategy. Factors that affect our global capital deployment strategy include anticipated cash flows, the ability to repatriate cash in a tax-efficient manner, funding requirements for operations and investment activities, acquisitions and divestitures and capital market conditions.

In summary, our cash flows were as follows (in thousands):

	Nine Months Ended	
	September 29, 2019	September 30, 2018
Net cash used in operating activities	$ (8,750)	$ (8,829)
Net cash used in investing activities	(579)	(112)
Net cash provided by financing activities	7,688	16,633

Net cash used in operating activities

For the nine months ended September 29, 2019, net cash used in operating activities was $8.8 million, which was primarily due to the net loss of $12.4 million, adjusted for non-cash charges of $3.2 million. Non-cash charges consisted primarily of stock-based compensation of $2.5 million. Other non-cash charges were depreciation, amortization of property, equipment, intangible assets, and right of use lease assets, and a write-down of inventory. Cash inflows from changes in operating assets and liabilities were $1.6 million, which were offset by cash outflows of $1.2 million.

For the nine months ended September 30, 2018, net cash used in operating activities was $8.8 million, which was primarily due to the net loss of $10.7 million, adjusted for non-cash charges of $2.6 million and cash outflows from changes in operating assets and liabilities of $733,000. Non-cash charges consisted primarily of stock-based compensation of $1.4 million, depreciation, amortization of property, equipment, and intangible assets of $980,000 and inventory write-down. Cash outflows from changes in operating assets and liabilities were $1.3 million, which were offset by cash inflows of $595,000.

Net cash used in investing activities

For the nine months ended September 29, 2019 cash used in investing activities was $579,000, which was primarily attributable to capital expenditure relating to leasehold improvements and computer equipment at the new office premises.

For the nine months ended September 30, 2018 cash used in investing activities was $112,000, which was primarily attributable to purchase of computers for employees, production and the IT department.

Net cash provided by financing activities

For the nine months ended September 29, 2019, cash provided by financing activities was $7.7 million, primarily attributable to the net proceeds of $8.0 million from the issuance of 18.4 million shares of common stock issued in June 2019, and net proceeds from the issuance of common stock under our equity plans. These inflows were partially offset by scheduled repayments of finance lease obligations and tax payments related to net settlement of stock awards.

For the nine months ended September 30, 2018, cash provided by financing activities was $16.6 million, primarily attributable to the net proceeds of $14.2 million from the issuance of 13.5 million shares of common stock and 5.4 million stock warrants in May 2018 and proceeds from the Revolving Facility with Heritage bank. These inflows were partially offset by repayment of line of credit balance with Silicon valley bank, the scheduled repayments of finance lease obligations and tax payments related to net settlement of stock awards.

We currently use our cash to fund capital expenditures and operations. Based on past operating performance and current annual operating plans, we believe that the generation of sales from our new product offerings, existing cash and cash equivalents, together with financial resources from our Revolving Facility with Heritage Bank and our ability to raise additional capital in the public capital markets will be sufficient to satisfy our operations and capital expenditures, and provide adequate working capital for the next twelve months from the date the unaudited condensed consolidated financial statements as of and for the three and nine-month period ended September 29, 2019. Our Revolving Facility will expire in September 2021 and we would need to renew this line of credit or find an alternative lender prior to the expiration date. Further, any violations of debt covenants before the expiration of the Revolving Facility may restrict our access to any additional cash draws from the Revolving Facility and may require our immediate repayment of the outstanding debt amounts. We believe that we will be able to either renew the Revolving Facility or obtain alternative financing on acceptable terms. We cannot provide any assurance that we will be able to raise additional capital, if required, or that such capital will be available on terms acceptable to us. Our inability to generate sufficient sales from our new product offerings and/or raise additional capital if needed could have a material adverse effect on our operations and financial condition, including our ability to maintain compliance with our lender's financial covenants.

Contractual Obligations and Commercial Commitments

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

As of September 29, 2019, the Company had purchase obligations of $869,000 for the purchase of wafer and finished goods inventory and other goods and services. As of September 29, 2019 the Company recognized right-of-use assets of approximately $2.2 million and lease liability of approximately $2.1 million relating to the operating leases signed for the premises of its headquarters in San Jose, San Diego Office and its subsidiaries.

Refer to Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K, as amended for the fiscal year ended December 30, 2018 for a description of our contractual obligations.

Concentration of Suppliers

We depend on a limited number of contract manufacturers, subcontractors, and suppliers for wafer fabrication, assembly, programming and testing, and for the supply of programming equipment. These services are typically provided by one supplier for each of our devices. We generally purchase these single or limited source services through standard purchase orders. Because we rely on independent subcontractors to perform these services, we cannot directly control product delivery schedules, costs or quality levels. Our future success also depends on the financial viability of our independent subcontractors. The decision not to provide these services to us or the inability to supply these services to us, such as in the case of a natural or financial disaster, would have a significant impact on our business. In addition, these subcontracted manufacturers produce products for other companies and we must place orders up to several months in advance of expected delivery. Increased demand from other companies could result in these subcontract manufacturers allocating available capacity to customers that are larger or have long-term supply contracts in place and we may be unable to obtain adequate foundry and other capacity at acceptable prices, or we may experience delays or interruption in supply. As a result, we have only a limited ability to react to fluctuations in demand for our products, which could cause us to have an excess or a shortage of inventories of a particular product. Additionally, volatility of economic, market, social and political conditions in countries where these suppliers operate may be unpredictable and could result in a reduction in product revenue or increase our cost of revenue and could adversely affect our business, financial condition and results of operations.

Off-Balance Sheet Arrangements

We do not maintain any off-balance sheet partnerships, arrangements or other relationships with unconsolidated entities or others, often referred to as structured finance or special purpose entities, which are established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Recently Issued Accounting Pronouncements

See Note 2 to the Unaudited Condensed Consolidated Financial Statements for a description of recent accounting pronouncements, including the respective dates of adoption and expected effects on the results of our operations and financial condition.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Risk

Our exposure to market rate risk for changes in interest rates relates primarily to our investment portfolio and variable rate debt. We do not use derivative financial instruments to manage our interest rate risk. We are averse to principal loss and ensure the safety and preservation of invested funds by limiting default, market risk and reinvestment risk. Our investment portfolio is generally comprised of investments that meet high credit quality standards and have active secondary and resale markets. Since these securities are subject to interest rate risk, they could decline in value if interest rates fluctuate or if the liquidity of the investment portfolio were to change. Due to the short duration and conservative nature of our investment portfolio, we do not anticipate any material loss with respect to our investment portfolio. A 10% move in interest rates as of the end of the third quarter of 2019 would have had an immaterial effect on our financial position, results of operations and cash flows.

Foreign Currency Exchange Rate Risk

All of our sales and costs of manufacturing are transacted in U.S. dollars. We conduct a portion of our research and development activities in India and have sales and marketing offices in several locations outside of the United States. We use the U.S. dollar as our functional currency. Most of the costs incurred at these international locations are in local currency. If these local currencies strengthen against the U.S. dollar, our payroll and other local expenses will be higher than we currently anticipate. Since our sales are transacted in U.S. dollars, this negative impact on expenses would not be offset by any positive effect on revenue. Operating expenses denominated in foreign currencies were approximately 19% and 27% of total operating expenses for the first nine months of 2019 and 2018, respectively. A currency exchange rate fluctuation of 10% would have caused our operating expenses to change by approximately $314,000 in the first nine months of 2019.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Based on management's evaluation as of September 29, 2019, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) were effective at the reasonable assurance level to ensure that the information required to be disclosed by us in this Quarterly Report on Form 10-Q was (i) recorded, processed, summarized and reported within the time periods specified in the SEC's rules and regulations and (ii) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal controls over financial reporting will prevent all errors and frauds. 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. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the period covered by this Quarterly Report on Form 10-Q that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Part II. Other Information

Item 1. Legal Proceedings

None. See Note 16 of the Unaudited Condensed Consolidated Financial Statements for a description of legal proceedings.

Item 1A. Risk Factors

Except as set forth below, there have been no material changes to the risk factors set forth in our 2018 Annual Report on Form 10-K for the year ended December 30, 2018, filed with the SEC on March 15, 2019, as amended, which includes a detailed discussion of our risk factors at Part I, Item 1A, Risk Factors, which discussion is hereby incorporated by reference into this Part II, Item 1A.

We have entered and will continue to enter into strategic licensing and collaborative partnerships and relationships with third parties. The anticipated benefits of these partnerships and relationships may never materialize and these partnerships and relationships may instead disrupt our business and harm our financial condition.

We have entered into strategic licensing and collaborative partnerships and relationships with third parties (such as SiFive) and will continue to enter into such partnerships and relationships with the goal of acquiring or gaining access to new and innovative semiconductor products and technologies, as well as other technologies which can be used to add to the differentiation of our emerging products, on a timely basis. Negotiating and performing under these arrangements involves significant time and expense, and we cannot assure you that the anticipated benefits of these arrangements will ever materialize or that the products or technologies involved will ever be commercialized or that, as a result, we will not have written down a portion or all of our investment. The arrangements with some third parties contain conditions and contingencies (such as a condition to raise a certain amount of capital), and we cannot assure you that we will meet all the conditions under these arrangements. We may end up with owing various obligations and commitments to third parties related to these arrangements. Such arrangements can magnify several risks for us, including loss of control over the development and development timeline of products being developed with third parties. Accordingly, we face increased risk that development activities may result in products that are not commercially successful or that are not available in a timely fashion. In addition, any third party with whom we enter into a development, product collaboration or technology licensing arrangement may fail to commit sufficient resources to the project, change its policies or priorities and abandon or fail to perform its obligations related to the collaboration. The failure to timely develop commercially successful products through our development projects or strategic investment activities as a result of any of these and other challenges could have a material adverse effect on our business, results of operations and financial condition. Other challenges and risks presented by use of strategic partnerships include the acquisition of a partner with which we have a strategic relationship by an unaffiliated third party that either delays or jeopardizes the original intent of the partnering relationship or investment.

Rising concern of international tariffs, including tariffs applied to goods traded between the United States and China, could materially and adversely affect our business and results of operations.

Since the beginning of 2018, there has been increasing rhetoric, in some cases coupled with legislative or executive action, from several U.S. and foreign leaders regarding tariffs against foreign imports of certain materials. More specifically, there have been three rounds of U.S. tariffs on Chinese goods taking effect in July, August and September 2018, and one round which took effect in May 2019 (some of which prompted retaliatory Chinese tariffs on U.S. goods). Approximately $1.8 million, or 15%, of our total revenues for the year ended December 30, 2018, and $1.1 million, or 15%, of our total revenues in the nine months ended September 29, 2019, consisted of sales of our EOS S3 and FPGA products to both OEMs and ODMs in China. The institution of trade tariffs both globally and between the U.S. and China specifically carries the risk of negatively affecting China's overall economic condition, which could have a negative impact on us as we derived and expect to continue to derive a significant amount of revenue from China. Imposition of tariffs could cause a decrease in the sales of our products to customers located in China or other customers selling to Chinese end users, which would directly impact our business and operating results.

The risks described above and in our Annual Report on Form 10-K are not the only risks facing our Company. Additional risks not currently known to us or that we currently deem to be immaterial may also adversely affect our business and results from operations.

Item 6. Exhibits

a. Exhibits

The following Exhibits are filed or incorporated by reference into this report:

Exhibit Number	Description
10.1	First Amendment to Amended and Restated Loan and Security Agreement with Heritage Bank dated November 6, 2019.
31.1	Certification of Brian C. Faith, Chief Executive Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Suping (Sue) Cheung, Chief Financial Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Brian C. Faith, Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Suping (Sue) Cheung, Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

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.

QUICKLOGIC CORPORATION

Date: November 8, 2019

/s/ Suping (Sue) Cheung

Suping (Sue) Cheung
Chief Financial Officer
(as Principal Accounting and Financial Officer and on behalf of the Registrant)

Exhibit 10.1

FIRST AMENDMENT TO
AMENDED AND RESTATED LOAN AND SECURITY AGREEMENT

THIS **FIRST AMENDMENT** to Amended and Restated Loan and Security Agreement (this "Amendment") is entered into as of November 6, 2019, by and between **HERITAGE BANK OF COMMERCE** ("Bank"), and **QUICKLOGIC CORPORATION** ("Borrower").

Recitals

A. Bank and Borrower have entered into that certain Amended and Restated Loan and Security Agreement dated as of December 21, 2018 (as the same may from time to time be amended, modified, supplemented or restated, the "Loan Agreement").

B. Bank has extended credit to Borrower for the purposes permitted in the Loan Agreement.

C. Borrower has requested that Bank amend the Loan Agreement to (i) extend the Revolving Maturity Date, and (ii) make other revisions to the Loan Agreement as more fully set forth herein.

D. Bank has agreed to so amend certain provisions of the Loan Agreement, but only to the extent, in accordance with the terms, subject to the conditions and in reliance upon the representations and warranties set forth below.

Agreement

Now, Therefore, in consideration of the foregoing recitals and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, and intending to be legally bound, the parties hereto agree as follows:

1. Definitions. Capitalized terms used but not defined in this Amendment shall have the meanings given to them in the Loan Agreement.

2. Amendments to Loan Agreement.

2.1 Section 1 (Definitions and Construction). The following term and its respective definition hereby is amended and restated in its entirety in Section 1.1 of the Loan Agreement as follows:

"**Revolving Maturity Date**" is September 28, 2021.

2.2 Section 2.3 (Interest Rates, Payments, and Calculations). Section 2.3(a) of the Loan Agreement hereby is amended and restated in its entirety to read as follows:

"**(a) Interest Rates.** Except as set forth in Section 2.3(b), the Advances shall bear interest, on the outstanding Daily Balance thereof, at a rate per annum equal to *the greater of* (i) one half of one percentage point (0.50%) above the Prime Rate, or (ii) five and one half of one percentage points (5.50%)."

3. Limitation of Amendments.

3.1 This Amendment is effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (a) be a consent to any amendment, waiver or modification of any other term or condition of any Loan Document, or (b) otherwise prejudice any right or remedy which Bank may now have or may have in the future under or in connection with any Loan Document.

3.2 This Amendment shall be construed in connection with and as part of the Loan Documents and all terms, conditions, representations, warranties, covenants and agreements set forth in the Loan Documents, except as herein amended, are hereby ratified and confirmed and shall remain in full force and effect.

4. Representations and Warranties. To induce Bank to enter into this Amendment, Borrower hereby represents and warrants to Bank as follows:

4.1 Immediately after giving effect to this Amendment (a) the representations and warranties contained in the Loan Documents are true, accurate and complete in all material respects as of the date hereof (except to the extent such representations and warranties relate to an earlier date, in which case they are true and correct as of such date), and (b) no Event of Default has occurred and is continuing;

4.2 Borrower has the power and authority to execute and deliver this Amendment and to perform its obligations under the Loan Agreement, as amended by this Amendment;

4.3 The organizational documents of Borrower delivered to Bank on the Closing Date remain true, accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect;

4.4 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, have been duly authorized;

4.5 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not and will not contravene (a) any law or regulation binding on or affecting Borrower, (b) any contractual restriction with a Person binding on Borrower, (c) any order, judgment or decree of any court or other governmental or public body or authority, or subdivision thereof, binding on Borrower, or (d) the organizational documents of Borrower;

4.6 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not require any order, consent, approval, license, authorization or validation of, or filing, recording or registration with, or exemption by any governmental or public body or authority, or subdivision thereof, binding on either Borrower, except as already has been obtained or made; and

4.7 This Amendment has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium or other similar laws of general application and equitable principles relating to or affecting creditors' rights.

5. Counterparts. This Amendment may be executed in any number of counterparts and all of such counterparts taken together shall be deemed to constitute one and the same instrument.

6. Ratification of Amended and Restated Intellectual Property Security Agreement . Borrower hereby ratifies, confirms and reaffirms, all and singular, the terms and conditions of a certain Amended and Restated Intellectual Property Security Agreement dated as of December 21, 2018 between

Borrower and Bank, and acknowledges, confirms and agrees that said Amended and Restated Intellectual Property Security Agreement (a) contains an accurate and complete listing of all Intellectual Property (as defined therein) and (b) shall remain in full force and effect.

7. **Effectiveness.** This Amendment shall be deemed effective upon (a) the due execution and delivery to Bank of this Amendment by each party hereto, and (b) Borrower's payment of all Bank Expenses due and owing as of the date hereof, which may be debited from any of Borrower's accounts at Bank.

[***Balance of Page Intentionally Left Blank***]

In Witness Whereof, the parties hereto have caused this Amendment to be duly executed and delivered as of the date first written above.

BANK		BORROWER	
HERITAGE BANK OF COMMERCE		**QUICKLOGIC CORPORATION**	
By:	/s/ Karla Schrader	By:	/s/ Sue Cheung
Name:	Karla Schrader	Name:	Sue Cheung
Title:	Vice President	Title:	VP Finance and Chief Financial Officer

[***Signature Page to First Amendment to Amended and Restated Loan and Security Agreement***]

Corporation Resolutions and Incumbency Certification

Borrower:QUICKLOGIC CORPORATION

I, the undersigned Secretary or Assistant Secretary of QUICKLOGIC CORPORATION (the "Corporation"), HEREBY CERTIFY that the Corporation is organized and existing under and by virtue of the laws of the State of Delaware.

I FURTHER CERTIFY that attached hereto as Attachments 1 and 2 are true and complete copies of the Certificate of Incorporation, as amended, and the Bylaws of the Corporation, each of which is in full force and effect on the date hereof.

I FURTHER CERTIFY that at a meeting of the Directors of the Corporation, duly called and held, at which a quorum was present and voting (or by other duly authorized corporate action in lieu of a meeting), the following resolutions (the "Resolutions") were adopted.

BE IT RESOLVED, that any one (1) of the following named officers, employees, or agents of this Corporation, whose actual signatures are shown below:

NAMES	POSITION	ACTUAL SIGNATURES
Sue Cheung	VP Finance and CFO	/s/ Sue Cheung
Brian C. Faith	Chief Executive Officer	/s/ Brian C. Faith

acting for and on behalf of this Corporation and as its act and deed be, and they hereby are, authorized and empowered:

Borrow Money. To borrow from time to time from HERITAGE BANK OF COMMERCE ("Bank"), on such terms as may be agreed upon between the officers, employees, or agents of the Corporation and Bank, such sum or sums of money as in their judgment should be borrowed, without limitation.

Execute Loan Documents. To execute and deliver to Bank that certain First Amendment to Amended and Restated Loan and Security Agreement dated as of November 6, 2019 (the "Amendment") and any other agreement entered into between Corporation and Bank in connection with the Amendment.

Grant Security. To grant a security interest to Bank in the Collateral described in that certain Amended and Restated Loan and Security Agreement by and between Borrower and Bank dated as of September 28, 2018 (as amended by the Amendment and as may be further amended, restated or otherwise modified from time to time (collectively the "Loan Documents") which security interest shall secure all of the Corporation's Obligations, as described in the Loan Documents.

Negotiate Items. To draw, endorse, and discount with Bank all drafts, trade acceptances, promissory notes, or other evidences of indebtedness payable to or belonging to the Corporation or in which the Corporation may have an interest, and either to receive cash for the same or to cause such proceeds to be credited to the account of the Corporation with Bank, or to cause such other disposition of the proceeds derived therefrom as they may deem advisable.

Letters of Credit. To execute letter of credit applications and other related documents pertaining to Bank's issuance of letters of credit.

Corporate Credit Cards. To execute corporate credit card applications and agreements and other related documents pertaining to Bank's provision of corporate credit cards.

Further Acts. In the case of lines of credit, to designate additional or alternate individuals as being authorized to request advances thereunder, and in all cases, to do and perform such other acts and things, to pay any and all fees and costs, and to execute and deliver such other documents and agreements as they may in their discretion deem reasonably necessary or proper in order to carry into effect the provisions of these Resolutions.

BE IT FURTHER RESOLVED, that any and all acts authorized pursuant to these resolutions and performed prior to the passage of these resolutions are hereby ratified and approved, that these Resolutions shall remain in full force and effect and Bank may rely on these Resolutions until written notice of their revocation shall have been delivered to and received by Bank. Any such notice shall not affect any of the Corporation's agreements or commitments in effect at the time notice is given.

I FURTHER CERTIFY that the officers, employees, and agents named above are duly elected, appointed, or employed by or for the Corporation, as the case may be, and occupy the positions set forth opposite their respective names; that the foregoing Resolutions now stand of record on the books of the Corporation; and that the Resolutions are in full force and effect and have not been modified or revoked in any manner whatsoever.

IN WITNESS WHEREOF, I have hereunto set my hand on November 6, 2019 and attest that the signatures set opposite the names listed above are their genuine signatures.

CERTIFIED AND ATTESTED BY:

By: /s/ Sue Cheung
Name: Sue Cheung
Title: VP Finance and CFO

Exhibit 31.1

CERTIFICATIONS

I, Brian C. Faith, certify that:

1. I have reviewed this quarterly report on Form 10-Q of QuickLogic Corporation;

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

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

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2019

/s/ Brian C. Faith

Brain C. Faith

President and Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Suping (Sue) Cheung, certify that:

1. I have reviewed this quarterly report on Form 10-Q of QuickLogic Corporation;

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

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

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2019

/s/ Suping (Sue) Cheung

Suping (Sue) Cheung
Vice President, Finance and Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Brian C. Faith, the President and Chief Executive Officer of QuickLogic Corporation (the "Company"), do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- the Quarterly Report on Form 10-Q of the Company for the quarter ended September 29, 2019 (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

- the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company for the periods presented therein.

Date:	November 8, 2019	By:	/s/ Brian C. Faith
		Name:	Brian C. Faith
		Title:	*President and Chief Executive Officer*

Exhibit 32.2

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Suping (Sue) Cheung, Chief Financial Officer of QuickLogic Corporation (the "Company") do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- the Quarterly Report on Form 10-Q of the Company for the quarter ended September 29, 2019 (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

- the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company for the periods presented therein.

Date:	November 8, 2019	By:	/s/ Suping (Sue) Cheung
		Name:	Suping (Sue) Cheung
		Title:	*Vice President, Finance and Chief Financial Officer*