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

FORM 10-Q

(Mark One)

☒ **Quarterly report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the quarterly period ended October 27, 2019

or

☐ **Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the transition period from to

Commission File Number 001-06395

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

Delaware	**95-2119684**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

200 Flynn Road, Camarillo, California, 93012-8790
(Address of principal executive offices, Zip Code)

Registrant’s telephone number, including area code: (805) 498-2111

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock par value $0.01 per share	**SMTC**	**The Nasdaq Global Select 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, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	x	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

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

Number of shares of Common Stock, $0.01 par value per share, outstanding at November 29, 2019: 66,246,440

SEMTECH CORPORATION
INDEX TO FORM 10-Q
FOR THE QUARTER ENDED OCTOBER 27, 2019

Unless the context otherwise requires, the use of the terms "Semtech," "the Company," "we," "us" and "our" in this Quarterly Report on Form 10-Q refers to Semtech Corporation and its consolidated subsidiaries. This Quarterly Report on Form 10-Q may contain references to the Company's trademarks and to trademarks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this Quarterly Report on Form 10-Q, including logos, artwork and other visual displays, may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other company.

Special Note Regarding Forward-Looking and Cautionary Statements

This Quarterly Report on Form 10-Q contains "forward-looking statements" within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, as amended, based on our current expectations, estimates and projections about our operations, industry, financial condition, performance, results of operations, and liquidity. Forward-looking statements are statements other than historical information or statements of current condition and relate to matters such as future financial performance, future operational performance, the anticipated impact of specific items on future earnings, and our plans, objectives and expectations. Statements containing words such as "may," "believe," "anticipate," "expect," "intend," "plan," "project," "estimate," "should," "will," "designed to," "projections," or "business outlook," or other similar expressions constitute forward-looking statements. Forward-looking statements involve known and unknown risks and uncertainties that could cause actual results and events to differ materially from those projected.

Potential factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to:

- *fluctuation in the Company's future results;*
- *downturns in the business cycle;*
- *rapid decline in the average selling prices of the Company's products;*
- *reduced demand for the Company's products due to global economic conditions;*
- *changes in the U.S. and global social, political, regulatory and economic conditions or in laws and policies governing foreign trade, manufacturing, development and investment, including potential increases on tariffs of goods imported into the U.S.;*
- *export restrictions and laws affecting the Company's trade and investments including the adoption and expansion of trade restrictions, including on Huawei Technologies Co., Ltd., or the occurrence of trade wars;*
- *business interruptions;*
- *the Company's reliance on a limited number of suppliers and subcontractors for components and materials;*
- *potentially insufficient liability insurance if the Company's products are found to be defective;*
- *obsolete inventories as a result of changes in demand and change in life cycles for the Company's products;*
- *the Company's inability to successfully develop and sell new products;*
- *lengthy and expensive product qualification processes without any assurance of product sales;*
- *the Company's products failing to meet industry standards;*
- *the Company's inability to protect intellectual property rights;*
- *the Company suffering losses if its products infringe the intellectual property rights of others;*
- *the Company's need to commit resources to product production prior to receipt of purchase commitments;*
- *increased business risk resulting from significant business with foreign customers;*
- *the Company's foreign currency exposures;*
- *the Company's inability to adequately compete against larger, more established entities;*
- *increased competition due to industry consolidation;*
- *the loss of any one of the Company's significant customers;*
- *volatility of customer demand;*
- *termination of a contract by a distributor;*
- *sales of our products on the gray market;*

- *the Company’s failure to maintain effective internal control over financial reporting and disclosure controls and procedures;*
- *government regulations and other standards, including those that impose operational and reporting requirements;*
- *any impact on the Company from changes leading up to and following the United Kingdom’s likely exit from the European Union;*
- *the Company’s failure to comply with applicable environmental regulations;*
- *increase in the Company’s cost of doing business as a result of having to comply with the codes of conduct of certain of the Company’s customers and suppliers;*
- *changes in tax law, including effective tax rates;*
- *taxation of Company sales in non-U.S. jurisdictions;*
- *potential increased tax liabilities and effective tax rate if the Company needs to repatriate funds held by foreign subsidiaries;*
- *the Company’s limited experience with government contracting;*
- *potential government investigations and inquiries;*
- *loss of the Company’s key personnel;*
- *risks associated with companies the Company has acquired in the past and may acquire in the future and the Company’s ability to successfully integrate acquired businesses and benefit from expected synergies;*
- *the Company’s reliance on certain critical information systems for the operation of its business;*
- *the Company may be required to recognize additional impairment charges;*
- *loss of value of investments in entities not under our control;*
- *the Company may not receive accurate, complete or timely financial information from entities for which the Company is required to consolidate such information;*
- *the Company’s ability to generate cash to service its debt obligations;*
- *restrictive covenants in the Company’s credit agreement which may restrict its ability to pursue its business strategies;*
- *costs associated with the Company’s indemnification of certain customers, distributors and other parties;*
- *the Company’s share price could be subject to extreme price fluctuations;*
- *the impact on the Company’s common stock price if securities or industry analysts do not publish reports about the Company’s business or adversely change their recommendations regarding the Company’s common stock;*
- *anti-takeover provisions in the Company’s organizational documents could make an acquisition of the Company more difficult; and*
- *the Company is subject to litigation risks which may be costly to defend*

Additionally, forward-looking statements should be considered in conjunction with the cautionary statements contained in this Quarterly Report on Form 10-Q, including, without limitation, information under the captions "Management’s Discussion and Analysis of Financial Condition and Results of Operations" and "Risk Factors" and additional factors that accompany the related forward-looking statements in this Quarterly Report on Form 10-Q, in our Annual Report on Form 10-K for the fiscal year ended January 27, 2019 including, without limitation, information under the caption "Risk Factors," in other filings with the U.S. Securities and Exchange Commission, and in material incorporated herein and therein by reference. In light of the significant risks and uncertainties inherent in the forward-looking information included herein that may cause actual performance and results to differ materially from those predicted, any such forward-looking information should not be regarded as representations or guarantees by the Company of future performance or results, or that its objectives or plans will be achieved, or that any of its operating expectations or financial forecasts will be realized. Reported results should not be considered an indication of future performance. Investors are cautioned not to place undue reliance on any forward-looking information contained herein, which reflect management’s analysis only as of the date hereof. Except as required by law, the Company assumes no obligation to publicly release the results of any update or revision to any forward-looking statement that may be made to reflect new information, events or circumstances after the date hereof or to reflect the occurrence of unanticipated or future events, or otherwise.

In addition to regarding forward-looking statements with caution, you should consider that the preparation of the consolidated financial statements requires us to draw conclusions and make interpretations, judgments, assumptions and estimates with respect to certain factual, legal, and accounting matters. Our financial statements might have been materially impacted if we had reached different conclusions or made different interpretations, judgments, assumptions or estimates.

PART I - FINANCIAL INFORMATION

ITEM 1. Financial Statements

SEMTECH CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF INCOME
(in thousands, except per share data)
(unaudited)

	Three Months Ended		Nine Months Ended	
	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Net sales	$ 141,011	$ 173,550	$ 409,511	$ 467,190
Cost of sales	54,763	66,988	157,104	189,035
Gross profit	86,248	106,562	252,407	278,155
Operating costs and expenses:				
Selling, general and administrative	33,795	39,587	112,047	114,522
Product development and engineering	26,670	27,147	79,322	81,425
Intangible amortization	3,770	6,480	12,821	19,921
Changes in the fair value of contingent earn-out obligations	(152)	(8,519)	(2,313)	(9,419)
Total operating costs and expenses	64,083	64,695	201,877	206,449
Operating income	22,165	41,867	50,530	71,706
Interest expense	(2,183)	(2,355)	(7,247)	(6,745)
Non-operating income, net	644	1,182	2,900	1,914
Investment impairments	—	(30,000)	—	(30,000)
Income before taxes and equity in net gains (losses) of equity method investments	20,626	10,694	46,183	36,875
Provision (benefit) for income taxes	3,379	(1,454)	10,033	(12,882)
Net income before equity in net gains (losses) of equity method investments	17,247	12,148	36,150	49,757
Equity in net gains (losses) of equity method investments	352	17	109	(41)
Net income	$ 17,599	$ 12,165	$ 36,259	$ 49,716
Earnings per share:				
Basic	$ 0.27	$ 0.18	$ 0.55	$ 0.75
Diluted	$ 0.26	$ 0.18	$ 0.54	$ 0.73
Weighted average number of shares used in computing earnings per share:				
Basic	66,387	66,014	66,337	66,134
Diluted	67,318	68,731	67,630	68,549

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

SEMTECH CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)
(unaudited)

	Three Months Ended		Nine Months Ended	
	October 27, 2019	**October 28, 2018**	**October 27, 2019**	**October 28, 2018**
Net income	$ 17,599	$ 12,165	$ 36,259	$ 49,716
Other comprehensive income (loss), net:				
Unrealized gain (loss) on foreign currency cash flow hedges, net	30	8	(249)	(109)
Realized loss on foreign currency cash flow hedges, net	133	11	142	36
Unrealized gain on available-for-sale securities	195	—	195	—
Change in employee benefit plans, net	68	(16)	204	(48)
Other comprehensive income (loss), net	426	3	292	(121)
Comprehensive income	$ 18,025	$ 12,168	$ 36,551	$ 49,595

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

SEMTECH CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)
(unaudited)

	October 27, 2019	January 27, 2019
Assets		
Current assets:		
Cash and cash equivalents	$ 283,057	$ 312,120
Accounts receivable, less allowances of $637 and $774, respectively	61,444	79,223
Inventories	70,108	63,679
Prepaid taxes	11,456	8,406
Other current assets	13,966	21,876
Total current assets	440,031	485,304
Non-current assets:		
Property, plant and equipment, net of accumulated depreciation of $209,723 and $196,033, respectively	124,111	118,488
Deferred tax assets	17,896	14,362
Goodwill	351,141	351,141
Other intangible assets, net	23,736	36,558
Other assets	82,224	57,028
TOTAL ASSETS	**$ 1,039,139**	**$ 1,062,881**
Liabilities and Equity		
Current liabilities:		
Accounts payable	$ 33,724	$ 43,183
Accrued liabilities	46,781	65,023
Deferred revenue	2,336	3,439
Current portion - long-term debt	18,306	18,269
Total current liabilities	101,147	129,914
Non-current liabilities:		
Deferred tax liabilities	3,643	3,363
Long term debt, less current portion	179,111	192,845
Other long-term liabilities	66,266	54,078
Commitments and contingencies (Note 11)		
Stockholders' equity:		
Common stock, $0.01 par value, 250,000,000 shares authorized, 78,136,144 issued and 66,201,382 outstanding and 78,136,144 issued and 65,238,255 outstanding, respectively	785	785
Treasury stock, at cost, 11,934,762 shares and 12,897,889 shares, respectively	(361,840)	(346,218)
Additional paid-in capital	441,902	456,791
Retained earnings	611,189	574,930
Accumulated other comprehensive loss	(3,315)	(3,607)
Total stockholders' equity	688,721	682,681
Noncontrolling interest	251	—
Total equity	688,972	682,681
TOTAL LIABILITIES AND EQUITY	**$ 1,039,139**	**$ 1,062,881**

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

SEMTECH CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except share data)
(unaudited)

	Three Months Ended October 27, 2019								
	Common Stock								
	Number of Shares Outstanding	Amount	Additional Paid-in Capital	Retained Earnings	Treasury Stock, at Cost	Accumulated Other Comprehensive Loss	Stockholders' Equity	Noncontrolling Interest	Total Equity
Balance at July 28, 2019	**66,314,933**	**$ 785**	**$ 444,716**	**$ 593,590**	**$ (345,810)**	**$ (3,741)**	**$ 689,540**	**$ —**	**$ 689,540**
Net income	—	—	—	17,599	—	—	17,599	—	17,599
Other comprehensive income	—	—	—	—	—	426	426	—	426
Capital contribution from outside party to a consolidated subsidiary	—	—	—	—	—	—	—	251	251
Stock-based compensation	—	—	9,303	—	—	—	9,303	—	9,303
Repurchase of common stock	(477,262)	—	—	—	(22,526)	—	(22,526)	—	(22,526)
Treasury stock reissued	363,711	—	(12,117)	—	6,496	—	(5,621)	—	(5,621)
Balance at October 27, 2019	**66,201,382**	**$ 785**	**$ 441,902**	**$ 611,189**	**$ (361,840)**	**$ (3,315)**	**$ 688,721**	**$ 251**	**$ 688,972**

	Nine Months Ended October 27, 2019								
	Common Stock								
	Number of Shares Outstanding	Amount	Additional Paid-in Capital	Retained Earnings	Treasury Stock, at Cost	Accumulated Other Comprehensive Loss	Stockholders' Equity	Noncontrolling Interest	Total Equity
Balance at January 27, 2019	**65,238,255**	**$ 785**	**$ 456,791**	**$ 574,930**	**$ (346,218)**	**$ (3,607)**	**$ 682,681**	**$ —**	**$ 682,681**
Net income	—	—	—	36,259	—	—	36,259	—	36,259
Other comprehensive income	—	—	—	—	—	292	292	—	292
Capital contribution from outside party to a consolidated subsidiary	—	—	—	—	—	—	—	251	251
Stock-based compensation	—	—	28,193	—	—	—	28,193	—	28,193
Repurchase of common stock	(925,743)	—	—	—	(42,636)	—	(42,636)	—	(42,636)
Treasury stock reissued	1,888,870	—	(43,082)	—	27,014	—	(16,068)	—	(16,068)
Balance at October 27, 2019	**66,201,382**	**$ 785**	**$ 441,902**	**$ 611,189**	**$ (361,840)**	**$ (3,315)**	**$ 688,721**	**$ 251**	**$ 688,972**

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

SEMTECH CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (CONTINUED)
(in thousands, except share data)
(unaudited)

Three Months Ended October 28, 2018

	Common Stock								
	Number of Shares Outstanding	Amount	Additional Paid-in Capital	Retained Earnings	Treasury Stock, at Cost	Accumulated Other Comprehensive Loss	Stockholders' Equity	Noncontrolling Interest	Total Equity
Balance at July 29, 2018	**65,931,409**	**$ 785**	**$ 442,964**	**$ 549,404**	**$ (288,541)**	**$ (1,324)**	**$ 703,288**	**$ —**	**$ 703,288**
Cumulative-effect adjustment to beginning balance from adoption of ASU 2014-09	—	—	—	—	—	—	—	—	—
Cumulative-effect adjustment to beginning balance from adoption of ASU 2016-16	—	—	—	20	—	—	20	—	20
Net income	—	—	—	12,165	—	—	12,165	—	12,165
Other comprehensive income	—	—	—	—	—	3	3	—	3
Stock-based compensation	—	—	12,222	—	—	—	12,222	—	12,222
Repurchase of common stock	(536,680)	—	—	—	(30,000)	—	(30,000)	—	(30,000)
Treasury stock reissued	384,793	—	(10,283)	—	5,522	—	(4,761)	—	(4,761)
Balance at October 28, 2018	**65,779,522**	**$ 785**	**$ 444,903**	**$ 561,589**	**$ (313,019)**	**$ (1,321)**	**$ 692,937**	**$ —**	**$ 692,937**

Nine Months Ended October 28, 2018

	Common Stock								
	Number of Shares Outstanding	Amount	Additional Paid-in Capital	Retained Earnings	Treasury Stock, at Cost	Accumulated Other Comprehensive Loss	Stockholders' Equity	Noncontrolling Interest	Total Equity
Balance at January 28, 2018	**66,280,129**	**$ 785**	**$ 415,056**	**$ 502,346**	**$ (251,974)**	**$ (1,200)**	**$ 665,013**	**$ —**	**$ 665,013**
Cumulative-effect adjustment to beginning balance from adoption of ASU 2014-09	—	—	—	11,104	—	—	11,104	—	11,104
Cumulative-effect adjustment to beginning balance from adoption of ASU 2016-16	—	—	—	(1,577)	—	—	(1,577)	—	(1,577)
Net income	—	—	—	49,716	—	—	49,716	—	49,716
Other comprehensive loss	—	—	—	—	—	(121)	(121)	—	(121)
Stock-based compensation	—	—	55,871	—	—	—	55,871	—	55,871
Repurchase of common stock	(1,677,433)	—	—	—	(79,739)	—	(79,739)	—	(79,739)
Treasury stock reissued	1,176,826	—	(26,024)	—	18,694	—	(7,330)	—	(7,330)
Balance at October 28, 2018	**65,779,522**	**$ 785**	**$ 444,903**	**$ 561,589**	**$ (313,019)**	**$ (1,321)**	**$ 692,937**	**$ —**	**$ 692,937**

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

SEMTECH CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Nine Months Ended	
	October 27, 2019	October 28, 2018
Cash flows from operating activities:		
Net income	$ 36,259	$ 49,716
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	30,270	37,332
Impairment of investments	—	30,000
Accretion of deferred financing costs and debt discount	365	399
Deferred income taxes	1,817	(19,001)
Share-based compensation and warrant costs	28,741	60,947
Loss (gain) on disposition of assets	292	(68)
Changes in the fair value of contingent earn-out obligations	(2,313)	(9,419)
Equity in net (gains) losses of equity method investments	(109)	41
Corporate owned life insurance, net	3,358	41
Changes in assets and liabilities:		
Accounts receivable, net	17,779	(26,096)
Inventories	(6,429)	10,754
Other assets	(2,663)	1,377
Accounts payable	(8,592)	5,329
Accrued liabilities	(20,023)	(2,538)
Deferred revenue	(1,103)	(488)
Income taxes payable	(2,105)	(1,697)
Other liabilities	(2,183)	(264)
Net cash provided by operating activities	73,361	136,365
Cash flows from investing activities:		
Proceeds from sales of property, plant and equipment	329	112
Purchase of property, plant and equipment	(20,409)	(12,928)
Purchase of investments	(9,592)	(6,701)
Acquisition, net of cash acquired	—	(7,265)
Proceeds from sale of investments	—	1,601
Net cash used in investing activities	(29,672)	(25,181)
Cash flows from financing activities:		
Payments of term loans	(14,062)	(11,250)
Payments of earn-out	(237)	(8,530)
Payment for employee share-based compensation payroll taxes	(20,514)	(17,802)
Proceeds from exercise of stock options	4,446	10,449
Repurchase of common stock	(42,636)	(79,738)
Contributions from noncontrolling interest	251	—
Net cash used in financing activities	(72,752)	(106,871)
Net (decrease) increase in cash and cash equivalents	(29,063)	4,313
Cash and cash equivalents at beginning of period	312,120	307,923
Cash and cash equivalents at end of period	$ 283,057	$ 312,236
Supplemental disclosure of cash flow information		
Interest paid	$ 6,641	$ 5,705
Income taxes paid	$ 8,531	$ 4,042
Non-cash investing and financing activities:		
Decrease in accounts payable related to capital expenditures	$ 867	$ 2,178

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

Note 1: Organization and Basis of Presentation

Nature of Business

Semtech Corporation (together with its consolidated subsidiaries, the "Company" or "Semtech") is a global supplier of analog and mixed-signal semiconductors and advanced algorithms. The end customers for the Company’s products are primarily original equipment manufacturers ("OEMs") that produce and sell electronics.

The Company designs, develops and markets a wide range of products for commercial applications, the majority of which are sold into the enterprise computing, communications, high-end consumer and industrial end markets.

Enterprise Computing: datacenters, passive optical networks, desktops, notebooks, servers, monitors, printers and other computer peripherals.

Communications: base stations, optical networks, carrier networks, switches and routers, cable modems, wireless local area network ("LAN") and other communication infrastructure equipment.

High-End Consumer: handheld products, smartphones, wireless charging, set-top boxes, digital televisions, monitors and displays, tablets, wearables, digital video recorders and other consumer equipment.

Industrial: analog and digital video broadcast equipment, video-over-IP solutions, automated meter reading, Internet of Things ("IoT"), smart grid, wireless charging, military and aerospace, medical, security systems, automotive, industrial and home automation and other industrial equipment.

Fiscal Year

The Company reports results on the basis of 52 and 53-week periods and ends its fiscal year on the last Sunday in January. The other quarters generally end on the last Sunday of April, July and October. All quarters consist of 13 weeks except for one 14-week period in the fourth quarter of 53-week years. The third quarters of fiscal years 2020 and 2019 each consisted of 13 weeks.

Principles of Consolidation

The accompanying interim unaudited condensed consolidated financial statements have been prepared by the Company, in accordance with accounting principles generally accepted in the United States ("GAAP") and on the same basis as the audited consolidated financial statements included in the Company’s Annual Report on Form 10-K for the fiscal year ended January 27, 2019 ("Annual Report"). The Company’s interim unaudited condensed consolidated statements of income are referred to herein as the "Statements of Income." The Company’s interim unaudited condensed consolidated balance sheets are referred to herein as the "Balance Sheets" and interim unaudited condensed consolidated statements of cash flows as the "Statements of Cash Flows." In the opinion of the Company, these interim unaudited condensed consolidated financial statements contain all adjustments (consisting of normal recurring adjustments) necessary to present fairly, in all material respects, the financial position of the Company for the interim periods presented. All intercompany balances have been eliminated. The Company consolidates entities that are not variable interest entities ("VIEs") when it owns, directly or indirectly, a majority interest in the entity or is otherwise able to control the entity. The Company consolidates VIEs in accordance with Accounting Standards Codification ("ASC") 810, *Consolidation*, if it is the primary beneficiary of the VIE as determined by its power to direct the VIE's activities and the obligation to absorb its losses or the right to receive its benefits, which are potentially significant to the VIE. Entities for which the Company owns an interest, but does not consolidate, are accounted for under the equity method or cost method of accounting as minority investments and are included in “Other Assets” within the Balance Sheets. The ownership interest in a consolidated subsidiary of the Company held by outside parties is included in “Noncontrolling Interest” within the Balance Sheets. Certain information and footnote disclosures normally included in annual consolidated financial statements have been condensed or omitted pursuant to the rules and regulations of the U.S. Securities and Exchange Commission. Because the interim unaudited condensed consolidated financial statements do not include all of the information and notes required by GAAP for a complete set of consolidated financial statements, they should be read in conjunction with the audited consolidated financial statements and notes included in the Company's Annual Report. The results reported in these interim unaudited condensed consolidated financial statements should not be regarded as indicative of results that may be expected for any subsequent period or for the entire year.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Acquisitions

On August 17, 2018, the Company, through its subsidiary Semtech (International) AG, a Swiss corporation, entered into a share purchase agreement to purchase all of the outstanding equity interests of Trackio International AG, a Swiss corporation, and its subsidiaries (collectively, "TrackNet"), for an aggregate purchase price of approximately $8.5 million (the "TrackNet Acquisition"). TrackNet is a provider of LoRa-based end-to-end solutions for the IoT and provides expertise and intellectual property that will be integrated into the Company's business to support its goal of enabling the growing ecosystem around the Company's LoRa® devices and wireless radio frequency technology. The Company attributed $4.3 million to goodwill (see Note 7) and $3.0 million and $0.3 million was attributed to the estimated fair values of the intangible and tangible net assets acquired, respectively. The goodwill is not deductible for tax purposes. The transaction was completed on December 11, 2018 and accounted for as a business combination. Net sales, earnings and pro forma results of operations have not been presented because they are not material to the Company’s consolidated financial statements.

On May 2, 2018, the Company acquired substantially all of the assets of IC Interconnect, Inc. (“ICI”) for an aggregate purchase price of approximately $7.4 million. The addition of ICI is aimed at further enhancing the Company’s U.S. research and development capabilities for its next-generation Z-Pak™ platform. $4.9 million was attributed to goodwill (see Note 7) and $2.5 million was attributed to the estimated fair values of the tangible net assets acquired. The goodwill is deductible for tax purposes. The transaction was accounted for as a business combination. Net sales, earnings, and pro forma results of operations have not been presented because they are not material to the Company’s consolidated financial statements.

Settlements

On August 1, 2018, the Company announced the settlement of a lawsuit filed against HiLight Semiconductor Limited and related individual defendants in accordance with which the Company was paid approximately $9.0 million to cover damages for claims, costs and attorneys' fees. The Company recorded gains of $6.7 million and $1.3 million in the second and fourth quarters of fiscal year 2019, respectively, and $1.0 million in the first quarter of fiscal year 2020 for recoveries related to this settlement. All recoveries were presented in "Selling, general and administrative" ("SG&A") in the Statements of Income in the respective periods in which the cash was received.

Recent Accounting Standards Adopted

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-02, Leases (Topic 842), to increase transparency and comparability among organizations by requiring the recognition of right-of-use ("ROU") assets and lease liabilities in the balance sheet. Most prominent among the changes in the standard is the recognition of ROU assets and lease liabilities by lessees for those leases classified as operating leases. Under the standard, disclosures are required to meet the objective of enabling users of financial statements to assess the amount, timing, and uncertainty of cash flows arising from leases.

In July 2018, the FASB issued additional guidance on the accounting for leases. The guidance provides companies with another transition method by allowing entities to recognize a cumulative-effect adjustment to the opening balance of retained earnings as of the date of adoption. Under this method, financial information related to periods prior to adoption will be as originally reported under Accounting Standards Codification ("ASC") 840, Leases. Upon adoption as of January 28, 2019, the Company recorded ROU assets of $13.0 million and lease liabilities of $13.8 million. There was no other impact from the adoption. The difference between the ROU assets and lease liabilities primarily represents the existing deferred rent liabilities balance, resulting from historical straight-lining of operating leases, which was reclassified upon adoption to reduce the measurement of the ROU assets. The adoption of the standard did not have an impact on the Company’s shareholder's equity and did not have a material impact on the Company’s results from operations and cash flows.

The new standard provides several optional practical expedients in transition. The Company elected a transition package of three practical expedients permitted within the standard, which eliminates the requirements to reassess prior conclusions about lease identification, lease classification, and initial direct costs. The Company elected the hindsight practical expedient, which permits the use of hindsight when determining lease term and impairment of ROU assets.

The Company also made accounting policy elections, including a short-term lease exception policy, permitting it to not apply the recognition requirements of this standard to short-term leases (i.e. leases with terms of 12 months or less), and an accounting policy to account for lease and non-lease components as a single component for equipment leases.

In February 2018, the FASB issued ASU No. 2018-02, Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income (AOCI), which gives entities the option to reclassify to retained earnings the tax effects resulting from the Tax Cuts and Jobs Act (“Tax Act”) related to items in AOCI that the FASB refers to as having been stranded in AOCI. The new guidance may be applied retrospectively to each period in which the effect of the Tax Act is recognized in the period of adoption. The Company must adopt this guidance for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years. Early adoption is permitted for periods for which financial statements have not yet been issued or made available for issuance, including the period the Tax Act was enacted. The guidance, when adopted, requires new disclosures regarding a company’s accounting policy for releasing the tax effects in AOCI and provides the Company the option to reclassify to retained earnings the tax effects resulting from the Tax Act that are stranded in AOCI. The Company adopted this guidance in the first quarter of fiscal year 2020. Adoption of this guidance did not have a material impact on the Company's consolidated financial statements.

In August 2017, the FASB issued ASU No. 2017-12, Derivatives and Hedging (Topic 815). The new standard is designed to refine and expand hedge accounting for both financial (e.g., interest rate) and commodity risks. Its provisions create more transparency around how economic results are presented, both on the face of the financial statements and in the footnotes. It also makes certain targeted improvements to simplify the application of hedge accounting guidance. The new standard is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Early adoption, including adoption in an interim period, is permitted. The Company adopted this guidance in the first quarter of fiscal year 2020. Adoption of this guidance did not have a material impact on the Company's consolidated financial statements.

Note 2: Earnings per Share

The computation of basic and diluted earnings per common share was as follows:

	Three Months Ended		Nine Months Ended	
(in thousands, except per share amounts)	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Net income	$ 17,599	$ 12,165	$ 36,259	$ 49,716
Weighted average common shares outstanding - basic	66,387	66,014	66,337	66,134
Dilutive effect of share-based compensation	931	2,717	1,293	2,415
Weighted average common shares outstanding - diluted	67,318	68,731	67,630	68,549
Basic earnings per common share	$ 0.27	$ 0.18	$ 0.55	$ 0.75
Diluted earnings per common share	$ 0.26	$ 0.18	$ 0.54	$ 0.73
Anti-dilutive shares not included in the above calculations	237	289	223	496

Diluted earnings per common share incorporates the incremental shares issuable, calculated using the treasury stock method, upon the assumed exercise of non-qualified stock options and the vesting of restricted stock units and performance unit awards if certain conditions have been met, but excludes such incremental shares that would have an anti-dilutive effect.

Note 3: Share-Based Compensation

Financial Statement Effects and Presentation

Pre-tax share-based compensation was included in the Statements of Income as follows:

	Three Months Ended		Nine Months Ended	
(in thousands)	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Net sales offset	$ —	$ —	$ —	$ 21,501
Cost of sales	552	477	1,381	1,110
Selling, general and administrative	5,341	8,478	19,767	31,318
Product development and engineering	2,874	2,511	7,593	7,018
Total share-based compensation	$ 8,767	$ 11,466	$ 28,741	$ 60,947

Warrant

On October 5, 2016, the Company issued a warrant (the "Warrant") to Comcast Cable Communications Management LLC ("Comcast") to purchase up to 1,086,957 shares (the "Warrant Shares") of the common stock of Semtech Corporation. The Warrant was issued by the Company to Comcast in connection with an agreement between the parties regarding the intended trial deployment by Comcast of a low-power wide-area network in the U.S., based on the Company's LoRa® devices and wireless radio frequency technology. The Warrant was accounted for as equity and the cost was recognized as an offset to net sales over the respective performance period. The Warrant consisted of five performance tranches. The cost associated with each tranche had been recognized based on the fair value at each reporting date until vesting, which was the measurement date. On April 27, 2018, the Company accelerated the vesting of the remaining 586,956 unvested shares from the Warrant ("Acceleration Event"), resulting in the full recognition of the remaining costs to be recognized for the Warrant. For the nine-month period ended October 28, 2018, the net sales offset reflects the cost associated with the Warrant of $21.5 million, including $15.9 million related to the Acceleration Event. As of January 27, 2019, the Warrant was fully vested and exercisable for a total of 869,565 shares, with no additional costs to be recognized in future periods. The Warrant was fully exercised and no longer outstanding as of March 15, 2019.

Performance-Based Restricted Stock Units

The Company grants performance-based restricted stock units to select employees. These awards have a performance condition in addition to a service condition. The performance-based restricted stock units are valued as of the measurement date and expense is recognized on a straight line basis for the awards expected to vest based on the probability of attainment of the performance condition for each separately vesting portion of the award.

In the first quarter of fiscal year 2020, the Company granted 106,000 performance-based restricted stock units that have a pre-defined market condition and a service condition that are accounted for as equity awards. The market condition is determined based upon the Company's total stockholder return ("TSR") benchmarked against the TSR of the S&P SPDR Semiconductor ETF (NYSE:XSD) over a one, two and three year period (one-third of the awards vesting each performance period). The fiscal year 2020 award recipients must be employed for the entire performance period and be an active employee at the time of vesting of the awards. The Company used a Monte Carlo simulation to determine the grant-date fair value for these awards, which takes into consideration the possible outcomes pertaining to the TSR market condition. The grant-date fair value per unit of the awards granted in the first quarter of fiscal year 2020 for each one, two and three year performance periods was $55.82, $59.36 and $61.45, respectively.

In the first quarter of fiscal year 2020, the Company granted to the CEO, 160,000 performance-based restricted stock units that have a pre-defined market condition and a service condition that are accounted for as equity awards. The market condition is determined based upon the Company's TSR benchmarked against the TSR of the S&P SPDR Semiconductor ETF (NYSE:XSD) over a one, two, three and four year period (one-fourth of the awards vesting each performance period). The CEO must be employed for the entire performance period and be an active employee at the time of vesting of the awards. The Company used a Monte Carlo simulation to determine the grant-date fair value for these awards, which takes into consideration the possible outcomes pertaining to the TSR market condition. The grant-date fair value per unit of the awards granted in the first quarter of fiscal year 2020 for each one, two, three and four year performance periods was $55.82, $59.36, $61.45 and $62.98, respectively.

Market Performance Restricted Stock Units

On March 5, 2019, the Company granted its CEO 320,000 restricted stock units with a market performance condition. The award is eligible to vest during the period commencing March 5, 2019, and ending March 5, 2024 (the "Performance Period") as follows: 30% of the restricted stock units covered by the award will vest if, during any consecutive 30 trading day period that commences and ends during the Performance Period, the average per-share closing price of the Company's common stock equals or exceeds $71.00 ("Tranche 1") and the remaining 70% of the restricted stock units covered by the award will vest if, during any consecutive 30 trading day period that commences and ends during the Performance Period, the average per-share closing price of the Company's common stock equals or exceeds $95.00 ("Tranche 2").

The award will also vest if a majority change in control of the Company occurs during the Performance Period and, in connection with such event, the Company's stockholders become entitled to receive per-share consideration equal to or in excess of the per-share performance targets. Specifically, if stockholders become entitled to receive per-share consideration equal to or in excess of $71.00, then 30% of the award will vest and become nonforfeitable. If the per share consideration is greater than $71.00, but less than $95.00, then 30% of the award and a pro-rata percentage of the remaining 70% of the award will vest and become nonforfeitable. If the per share consideration is equal to or greater than $95.00, the entire award will vest and become nonforfeitable. The grant-date fair value per unit of the awards was determined to be $44.32 and $33.19 for Tranche 1 and Tranche 2, respectively, by application of the Monte Carlo simulation model.

The following tables summarize the assumptions used in the Monte Carlo simulation model to determine the fair value of restricted stock units granted in fiscal year 2020 for both Tranche 1 and Tranche 2.

	Tranche 1	Tranche 2
Expected life, in years	1.0	2.1
Estimated volatility	34.3%	34.3%
Dividend yield	—%	—%
Risk-free interest rate	2.5%	2.5%
Weighted-average fair value on grant date	$ 44.32	$ 33.19

Award Modifications

In the first quarter of fiscal year 2019, the Company modified the terms of 159,000 fully vested shares held by 8 employees. As a result of the modification, additional compensation cost of $2.8 million was recognized during the first quarter of fiscal year 2019.

Note 4: Investments

The following table summarizes the values of the Company’s available-for-sale securities:

	October 27, 2019			January 27, 2019		
(in thousands)	Market Value	Adjusted Cost	Gross Unrealized Gain	Market Value	Adjusted Cost	Gross Unrealized Gain
Convertible debt	$ 7,847	$ 7,652	$ 195	$ 3,105	$ 3,105	$ —
Total available-for-sale securities	$ 7,847	$ 7,652	$ 195	$ 3,105	$ 3,105	$ —

The following table summarizes the maturities of the Company’s available-for-sale securities:

	October 27, 2019		January 27, 2019	
(in thousands)	Market Value	Adjusted Cost	Market Value	Adjusted Cost
Within 1 year	$ 2,027	$ 1,993	$ 3,105	$ 3,105
After 1 year through 5 years	5,820	5,659	—	—
Total available-for-sale securities	$ 7,847	$ 7,652	$ 3,105	$ 3,105

The Company's available-for-sale securities consist of investments in convertible debt instruments issued by privately-held companies. The available-for-sale securities with maturities within one year were included in "Other current assets" and with maturities greater than one year were included in "Other assets" in the Balance Sheets. Additions to the Company's investments in available-for-sale securities during the nine months ended October 27, 2019 included a $3.2 million convertible note that has a maturity date of December 15, 2020 and an interest rate of 12%.

During the third quarter of fiscal year 2019, the Company reduced its expectation of Multiphy Ltd.'s future operating performance due to new information that became available during the quarter. The Company concluded that the competitive landscape had evolved and that product release and broad market adoption of 400G PAM4 digital signal processing (DSP) technology was delayed. As a result of these indicators of impairment, the Company tested the investment for an other-than-temporary impairment using a discounted cash flow model. The results of its analysis indicated that the investment was other than temporarily impaired by $30.0 million, representing the entire carrying value of the investment.

Note 5: Fair Value Measurements

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

Level 1—Quoted prices in active markets for identical assets or liabilities;
Level 2—Observable inputs other than Level 1 prices, such as quoted prices for similar assets and liabilities in active markets or other inputs that are observable for the assets or liabilities, either directly or indirectly;
Level 3—Unobservable inputs based on the Company's own assumptions, requiring significant management judgment or estimation.

Instruments Measured at Fair Value on a Recurring Basis

Financial assets and liabilities measured and recorded at fair value on a recurring basis were presented in the Balance Sheets as follows:

	Fair Value as of October 27, 2019				Fair Value as of January 27, 2019			
(in thousands)	Total	(Level 1)	(Level 2)	(Level 3)	Total	(Level 1)	(Level 2)	(Level 3)
Financial assets:								
Convertible debt	$ 7,847	$ —	$ —	$ 7,847	$ 3,105	$ —	$ —	$ 3,105
Derivative financial instruments	—	—	—	—	69	—	69	—
Total financial assets	$ 7,847	$ —	$ —	$ 7,847	$ 3,174	$ —	$ 69	$ 3,105
Financial liabilities:								
AptoVision Earn-out	$ —	$ —	$ —	$ —	$ 2,161	$ —	$ —	$ 2,161
Cycleo Earn-out	310	—	—	310	462	—	—	462
Derivative financial instruments	39	—	39	—	—	—	—	—
Total financial liabilities	$ 349	$ —	$ 39	$ 310	$ 2,623	$ —	$ —	$ 2,623

During the nine months ended October 27, 2019, the Company had no transfers of financial assets or liabilities between Level 1, Level 2 or Level 3. As of October 27, 2019 and January 27, 2019, the Company had not elected the fair value option for any financial assets and liabilities for which such an election would have been permitted.

The fair values of the foreign currency forward contracts are valued using Level 2 inputs. Foreign currency forward contracts are valued using readily available foreign currency forward and interest rate curves. The fair value of each contract is determined by comparing the contract rate to the forward rate and discounting to the present value. Contracts in a gain position are recorded in "Other current assets" in the Balance Sheets and the value of contracts in a loss position are recorded in "Accrued liabilities" in the Balance Sheets. See Note 15 for further discussion of the Company's derivative instruments.

The convertible debt investments are valued utilizing a combination of estimates of the discounted cash flows associated with the debt and the fair value of the equity into which the debt may be converted (Level 3 inputs).

The AptoVision Earn-out liability (see Note 11) is valued utilizing estimates of annual sales, adjusted earnings and product development targets (Level 3 inputs) through July 2020. These estimates represent inputs for which market data is not available and are developed using the best information available about the assumptions that market participants would use when pricing the liability.

The Cycleo Earn-out liability (see Note 11) is valued utilizing estimates of annual sales and operating income (Level 3 inputs) through April 2020. These estimates represent inputs for which market data is not available and are developed using the best information available about the assumptions that market participants would use when pricing the liability.

The Company measures contingent earn-out liabilities at fair value on a recurring basis using significant unobservable inputs classified within Level 3 of the fair value hierarchy. The Company uses a Monte Carlo valuation method as a valuation technique to determine the value of the earn-out liability. The significant unobservable inputs used in the fair value measurements are sales projections over the earn-out period, and the probability outcome percentages assigned to each scenario. Significant increases or decreases to either of these inputs in isolation would result in a significantly higher or lower liability, with a higher liability capped by the contractual maximum of the contingent earn-out obligation. Ultimately, the liabilities will be equivalent to the amount paid, and the difference between the fair value estimate and amount paid will be recorded in earnings. For the Cycleo Earn-out and AptoVision Earn-out, these companies have business profiles comparable to a start-up company. Accordingly, their respective sales projections are subject to significant revisions. This characteristic can result in volatile changes to the measurement of fair value for a given earn-out.

The Company reviews and re-assesses the estimated fair value of contingent consideration on a recurring basis, and the updated fair value could differ materially from the previous estimates. Adjustments to the estimated fair value related to changes in all other unobservable inputs are reported in operating income.

A reconciliation of the change in the earn-out liability during the nine months ended October 27, 2019 is as follows:

(in thousands)	AptoVision	Cycleo	Total
Balance at January 27, 2019	$ 2,161	$ 462	$ 2,623
Changes in the fair value of contingent earn-out obligations	(2,161)	(152)	(2,313)
Balance at October 27, 2019	$ —	$ 310	$ 310

Instruments Not Recorded at Fair Value on a Recurring Basis

Some of the Company’s financial instruments are not measured at fair value on a recurring basis, but are recorded at amounts that approximate fair value due to their liquid or short-term nature. Such financial assets and financial liabilities include: cash and cash equivalents including money market deposits, net receivables, certain other assets, accounts payable, accrued expenses, accrued personnel costs, and other current liabilities.

The Company’s long-term debt is not recorded at fair value on a recurring basis, but is measured at fair value for disclosure purposes. The fair value of the Company’s Term Loans (as defined in Note 8) was $101.3 million and $115.3 million as of October 27, 2019 and January 27, 2019, respectively. The fair value of the Company's Revolving Loans (as defined in Note 8) was $97.0 million as of both October 27, 2019 and January 27, 2019. These fair values are based on Level 2 inputs as they were derived from quoted rates from banks for transactions with similar amounts, maturities, credit ratings and payment terms, which determined that the carrying amounts of the Company's Term Loans and Revolving Loans approximate fair value.

Assets and Liabilities Recorded at Fair Value on a Non-Recurring Basis

The Company reduces the carrying amounts of its goodwill, intangible assets, long-lived assets and non-marketable equity securities to fair value when held for sale or determined to be impaired.

For the Company's investments in non-marketable equity interests, the Company has not identified events or changes in circumstances that may have a significant adverse effect on the fair value of its equity investments during the first nine months of fiscal year 2020.

Note 6: Inventories

Inventories, consisting of material, material overhead, labor, and manufacturing overhead, are stated at the lower of cost (first-in, first-out) or market and consisted of the following:

(in thousands)	October 27, 2019	January 27, 2019
Raw materials	$ 2,282	$ 2,057
Work in progress	49,827	44,530
Finished goods	17,999	17,092
Inventories	$ 70,108	$ 63,679

Note 7: Goodwill and Intangible Assets

Goodwill

Changes in the carrying amount of goodwill by applicable reporting unit were as follows:

(in thousands)	Signal Integrity	Wireless and Sensing	Protection	Total
Balance at January 27, 2019	$ 274,085	$ 72,128	$ 4,928	$ 351,141
Additions	—	—	—	—
Balance at October 27, 2019	$ 274,085	$ 72,128	$ 4,928	$ 351,141

(in thousands)	Signal Integrity	Wireless and Sensing	Protection	Total
Balance at January 28, 2018	$ 274,085	$ 67,812	$ —	$ 341,897
Additions (1) (2)	—	8,500	4,778	13,278
Balance at October 28, 2018	$ 274,085	$ 76,312	$ 4,778	$ 355,175

(1) *On August 17, 2018, the Company, through its subsidiary Semtech (International) AG, a Swiss corporation, entered into the TrackNet Acquisition for approximately $8.5 million, with the entire purchase price preliminarily attributed to goodwill as of October 28, 2018. During the fourth quarter of fiscal year 2019, the Company finalized the purchase price allocation for the TrackNet Acquisition, which resulted in $4.3 million of the purchase price attributed to goodwill.*

(2) *On May 2, 2018, the Company acquired substantially all of the assets of ICI for an aggregate purchase price of approximately $7.4 million, of which $4.8 million was preliminarily attributed to goodwill as of October 28, 2018. During the fourth quarter of fiscal year 2019, the Company finalized the purchase price allocation for the acquisition of ICI, which resulted in $4.9 million of the purchase price attributed to goodwill.*

The reporting units are the same as the operating segments, which are part of a single reportable segment (see Note 13).

Goodwill is tested for impairment at the reporting unit level during the fourth quarter of each fiscal year. In addition to its annual review, the Company performs a test of impairment when indicators of impairment are present. As of October 27, 2019, there was no indication of impairment of the Company's goodwill balances.

Purchased Intangibles

The following table sets forth the Company's finite-lived intangible assets resulting from business acquisitions, which continue to be amortized:

		October 27, 2019			January 27, 2019		
(in thousands)	Estimated Useful Life	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Core technologies	5-8 years	$ 83,088	$ (62,674)	$ 20,414	$ 167,930	$ (136,544)	$ 31,386
Customer relationships	3-10 years	6,000	(4,978)	1,022	34,031	(31,159)	2,872
Total finite-lived intangible assets		$ 89,088	$ (67,652)	$ 21,436	$ 201,961	$ (167,703)	$ 34,258

Amortization expense of finite-lived intangible assets recorded in the Statements of Income for each period was as follows:

	Three Months Ended		Nine Months Ended	
(in thousands)	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Core technologies	$ 3,337	$ 5,047	$ 10,971	$ 15,622
Customer relationships	433	1,433	1,850	4,299
Total amortization expense	$ 3,770	$ 6,480	$ 12,821	$ 19,921

Future amortization expense of finite-lived intangible assets is expected as follows:

(in thousands) Fiscal Year Ending:	Core Technologies	Customer Relationships	Total
2020 (remaining three months)	$ 3,267	$ 433	$ 3,700
2021	7,389	589	7,978
2022	4,655	—	4,655
2023	3,714	—	3,714
2024	1,389	—	1,389
Thereafter	—	—	—
Total expected amortization expense	$ 20,414	$ 1,022	$ 21,436

The following table sets forth the Company's indefinite-lived intangible assets resulting from additions to in-process research and development:

(in thousands)	Net Carrying Value
Value at January 27, 2019	$ 2,300
In-process research and development through acquisitions	—
Value at October 27, 2019	$ 2,300

Indefinite-lived intangible assets are tested for impairment annually on the first day of the fourth quarter or more frequently if events or changes in circumstances (each, a "triggering event") would more likely than not reduce the carrying value of the asset below its fair value, calculated as the future discounted cash flows that asset is expected to generate. Management did not identify any triggering events during the nine months ended October 27, 2019, that would require an interim impairment analysis.

Note 8: Long-Term Debt

Long-term debt and the current period interest rates were as follows:

	Balance as of	
(in thousands)	October 27, 2019	January 27, 2019
Term loans	$ 101,250	$ 115,312
Revolving loans	97,000	97,000
Total debt	198,250	212,312
Current portion, net	(18,306)	(18,269)
Total long-term debt	179,944	194,043
Debt issuance costs	(833)	(1,198)
Total long-term debt, net of debt issuance costs	$ 179,111	$ 192,845
Weighted-average interest rate	3.46%	4.14%

On November 15, 2016, the Company, with certain of its domestic subsidiaries as guarantors, entered into an amended and restated credit agreement with the lenders party thereto and HSBC Bank USA, National Association, as administrative agent (the "Administrative Agent"), swing line lender and letter of credit issuer, consisting of senior secured term loans in an aggregate principal amount of $150.0 million (the "Term Loans") and senior secured revolving commitments in an aggregate principal amount of $250.0 million (the “Revolving Loans” and together with the Term Loans, the "Credit Facility"). The Credit Facility was scheduled to mature on November 12, 2021, but was amended on November 7, 2019, to provide a more flexible borrowing structure by expanding the borrowing capacity of the Revolving Loans to $600.0 million, eliminating the Term Loans and extending the maturity to November 7, 2024 (see Note 16).

As of October 27, 2019, the Company was in compliance with all financial covenants required under the Credit Facility.

The outstanding principal balance of the Term Loans was subject to repayment in quarterly installments. No amortization was required with respect to the Revolving Loans.

Scheduled maturities of the Term Loans were as follows as of October 27, 2019:

(in thousands)	
Fiscal Year Ending:	
2020 (remaining three months)	$ 4,687
2021	19,688
2022	76,875
Total Term Loans	$ 101,250

There were no scheduled principal payments for the Revolving Loans, which had outstanding borrowings of $97.0 million at October 27, 2019, and were due on or before November 12, 2021. As of October 27, 2019, the Company had $153.0 million of unused borrowing capacity under the Revolving Loans, prior to the amendment on November 7, 2019 (see Note 16).

Interest expense was comprised of the following components for the periods presented:

	Three Months Ended		Nine Months Ended	
(in thousands)	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Contractual interest	$ 2,064	$ 2,224	$ 6,881	$ 6,346
Amortization of debt discount	84	92	258	282
Amortization of debt issuance costs	35	39	108	117
Total interest expense	$ 2,183	$ 2,355	$ 7,247	$ 6,745

As of October 27, 2019, there were no amounts outstanding under the letters of credit, swing line loans and alternative currency sub-facilities.

Note 9: Income Taxes

The Company's effective tax rate differs from the statutory federal income tax rate of 21% primarily due to the regional mix of income and a true up related to the impact of finalized regulations on the mandatory deemed repatriation of foreign earnings ("U.S. Transition Tax").

The Company uses a two-step approach to recognize and measure uncertain tax positions ("UTP"). The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement.

A reconciliation of the beginning and ending amount of gross unrecognized tax benefits (before the federal impact of state items) is as follows:

(in thousands)		
Balance at January 27, 2019	$	18,293
Additions based on tax positions related to the current fiscal year		258
Additions based on tax positions related to prior years		6,468
Reductions for settlements with tax authorities		(1,530)
Balance at October 27, 2019	$	23,489

Included in the balance of gross unrecognized tax benefits at October 27, 2019 and January 27, 2019 are $9.6 million and $4.5 million, respectively, of net tax benefits (after the federal impact of state items), that, if recognized, would impact the effective tax rate, prior to consideration of any required valuation allowance.

The liability for UTP is reflected in the Balance Sheets as follows:

(in thousands)	October 27, 2019		January 27, 2019	
Deferred tax assets - non-current	$	12,608	$	12,492
Other long-term liabilities		9,550		4,479
Total accrued taxes	$	22,158	$	16,971

The Company's policy is to include net interest and penalties related to unrecognized tax benefits in the "Provision for taxes" in the Statements of Income.

Tax years prior to 2013 (the Company's fiscal year 2014) are generally not subject to examination by the U.S. Internal Revenue Service ("IRS") except for items involving tax attributes that have been carried forward to tax years whose statute of limitations remains open. For state returns, the Company is generally not subject to income tax examinations for calendar years prior to 2012 (the Company's fiscal year 2013). The Company has a significant tax presence in Switzerland for which Swiss tax filings have been examined through fiscal year 2018. The Company is also subject to routine examinations by various foreign tax jurisdictions in which it operates. The Company believes that adequate provisions have been made for any adjustments that may result from tax examinations. However, the outcome of tax audits cannot be predicted with certainty. If any issues addressed in the Company's tax audits are resolved in a manner not consistent with the Company's expectations, the Company could be required to adjust its provision for income taxes in the period such resolution occurs.

The Company's regional income (loss) from continuing operations before taxes and equity in net (gains) losses of equity method investments was as follows:

	Three Months Ended				Nine Months Ended			
(in thousands)	October 27, 2019		October 28, 2018		October 27, 2019		October 28, 2018	
Domestic	$	2,212	$	(1,647)	$	(12,682)	$	(12,871)
Foreign		18,414		12,341		58,865		49,746
Total	$	20,626	$	10,694	$	46,183	$	36,875

Note 10: Leases

The Company has operating leases for real estate, vehicles, and office equipment. Real estate leases are used to secure office space for the Company's administrative, engineering, production support and manufacturing activities. The Company's leases have remaining lease terms of 1 to 7 years, some of which include options to extend the leases for up to 5 years, and some of which include options to terminate the leases within 1 year.

The components of lease expense for the three and nine months ended October 27, 2019 were as follows:

(in thousands)	Three Months Ended	Nine Months Ended
Operating lease cost	$ 1,183	$ 3,610
Short-term lease cost	81	242
Sublease income	(33)	(98)
Total lease cost	$ 1,231	$ 3,754

Supplemental cash flow information for the nine months ended October 27, 2019 related to leases was as follows:

(in thousands)	
Cash paid for amounts included in the measurement of lease liabilities	$ 3,874
Right-of-use assets obtained in exchange for new operating lease liabilities	$ 149

Weighted-average remaining lease term - operating leases	4 years
Weighted-average discount rate - operating leases	6.7%

Supplemental balance sheet information as of October 27, 2019 related to leases was as follows:

(in thousands)	
Operating lease right-of-use assets [(1)] [(2)]	$ 10,049
Other current liabilities [(1)]	$ 3,833
Operating lease liabilities [(1)]	6,849
Total operating lease liabilities	$ 10,682

[(1)] Operating lease right-of-use assets are included in "Other assets", other current liabilities are included in "Accrued liabilities" and operating lease liabilities are included in "Other long-term liabilities" in the Balance Sheets.
[(2)] The difference between the ROU assets and lease liabilities primarily represents the existing deferred rent liabilities balance, resulting from historical straight-lining of operating leases, which was effectively reclassified upon adoption to reduce the measurement of the ROU assets.

Maturities of lease liabilities as of October 27, 2019 are as follows:

(in thousands)	
Fiscal Year Ending:	
2020 (remaining three months)	$ 1,271
2021	3,939
2022	2,492
2023	1,461
2024	1,191
2025	1,022
Thereafter	874
Total lease payments	12,250
Less: imputed interest	(1,568)
Total	$ 10,682

As of October 27, 2019, the Company has an additional operating lease, primarily for office space, that it has yet to occupy for a value of approximately $3.2 million. The operating lease will commence at the end of fiscal year 2020 with a lease term of 7 years.

Note 11: Commitments and Contingencies

In accordance with ASC 450-20, Loss Contingencies, the Company accrues an undiscounted liability for those contingencies where the incurrence of a loss is probable and the amount can be reasonably estimated. The Company also discloses the amount accrued and the amount of a reasonably possible loss in excess of the amount accrued, if such disclosure is necessary for its consolidated financial statements not to be misleading. The Company does not record liabilities when the likelihood that the liability has been incurred is probable but the amount cannot be reasonably estimated, or when the liability is believed to be only reasonably possible or remote. The Company evaluates, at least quarterly, developments in its legal matters that could affect the amount of liability that has been previously accrued, and makes adjustments as appropriate. Significant judgment is required to determine both probability and the estimated amount. The Company may be unable to estimate a possible loss or range of possible loss due to various reasons, including, among others: (i) if the damages sought are indeterminate; (ii) if the proceedings are in early stages, (iii) if there is uncertainty as to the outcome of pending appeals, motions or settlements, (iv) if there are significant factual issues to be determined or resolved, and (v) if there are novel or unsettled legal theories presented. In such instances, there is considerable uncertainty regarding the ultimate resolution of such matters, including a possible eventual loss, if any.

Because the outcomes of litigation and other legal matters are inherently unpredictable, the Company’s evaluation of legal matters or proceedings often involves a series of complex assessments by management about future events and can rely heavily on estimates and assumptions. While the consequences of certain unresolved matters and proceedings are not presently determinable, and an estimate of the probable and reasonably possible loss or range of loss in excess of amounts accrued for such proceedings cannot be reasonably made, an adverse outcome from such proceedings could have a material adverse effect on the Company’s earnings in any given reporting period. However, in the opinion of management, after consulting with legal counsel, any ultimate liability related to current outstanding claims and lawsuits, individually or in the aggregate, is not expected to have a material adverse effect on the Company’s consolidated financial statements, as a whole. However, legal matters are inherently unpredictable and subject to significant uncertainties, some of which are beyond the Company’s control.

As such, even though the Company intends to vigorously defend itself with respect to its legal matters, there can be no assurance that the final outcome of these matters will not materially and adversely affect the Company’s business, financial condition, operating results, or cash flows.

From time to time, the Company is involved in various claims, litigation, and other legal actions that are normal to the nature of its business, including with respect to IP, contract, product liability, employment, and environmental matters. In the opinion of management, after consulting with legal counsel, any ultimate liability related to current outstanding claims and lawsuits, individually or in the aggregate, is not expected to have a material adverse effect on the Company’s consolidated financial statements, as a whole.

The Company’s currently pending legal matters of note are discussed below:

Environmental Matters

The Company vacated a former facility in Newbury Park, California in 2002, but continues to address groundwater and soil contamination at the site. The Company’s efforts to address site conditions have been at the direction of the Los Angeles Regional Water Quality Control Board (“RWQCB”). In October 2013, an order was issued including a scope of proposed additional site work, monitoring, and proposed remediation activities. The Company has been complying with RWQCB orders and direction, and has implemented an approved remedial action plan addressing the soil, groundwater, and soil vapor at the site.

The Company has accrued liabilities where it is probable that a loss will be incurred and the cost or amount of loss can be reasonably estimated. Based on the latest determinations by the RWQCB and the most recent actions taken pursuant to the remedial action plan, the Company estimates the range of probable loss between $5.9 million and $7.5 million. To date, the Company has made $4.3 million in payments towards the remedial action plan and, as of October 27, 2019, has a remaining accrual of $1.6 million related to this matter. Given the uncertainties associated with environmental assessment and the remediation activities, the Company is unable to determine a best estimate within the range of loss. Therefore, the Company has recorded the minimum amount of probable loss. These estimates could change as a result of changes in planned remedial actions, further actions from the regulatory agency, remediation technology, and other factors.

Indemnification

The Company has entered into agreements with its current and former executives and directors indemnifying them against certain liabilities incurred in connection with the performance of their duties. The Company’s Certificate of Incorporation and Bylaws contain comparable indemnification obligations with respect to the Company’s current directors and employees.

Product Warranties

The Company’s general warranty policy provides for repair or replacement of defective parts. In some cases, a refund of the purchase price is offered. In certain instances, the Company has agreed to other or additional warranty terms, including indemnification provisions.

The product warranty accrual reflects the Company’s best estimate of probable liability under its product warranties. The Company accrues for known warranty issues if a loss is probable and can be reasonably estimated, and accrues for estimated incurred but unidentified issues based on historical experience. Historically, warranty expense and the related accrual has been immaterial to the Company’s consolidated financial statements.

Deferred Compensation

The Company maintains a deferred compensation plan for certain officers and key executives that allow participants to defer a portion of their compensation for future distribution at various times permitted by the plan. This plan provides for a discretionary Company match up to a defined portion of the employee's deferral, with any match subject to a vesting period.

The Company's liability for the deferred compensation plan is presented below:

(in thousands)	October 27, 2019	January 27, 2019
Accrued liabilities	$ 1,141	$ 2,203
Other long-term liabilities	32,027	27,251
Total deferred compensation liabilities under this plan	$ 33,168	$ 29,454

The Company has purchased whole life insurance on the lives of certain current deferred compensation plan participants. This Company-owned life insurance is held in a grantor trust and is intended to cover a majority of the Company's costs of the deferred compensation plan. The cash surrender value of the Company-owned life insurance was $22.5 million and $20.4 million as of October 27, 2019 and January 27, 2019, respectively, and is included in "Other assets" in the Balance Sheets.

Earn-out Liability

Pursuant to the terms of an amended earn-out arrangement ("Cycleo Earn-out") with the former shareholders of Cycleo SAS ("Cycleo Earn-out Beneficiaries"), which the Company acquired in March 2012, as of October 27, 2019, the Company potentially may make payments totaling up to approximately $11.3 million based on the achievement of a combination of certain sales and operating income milestones over a defined period ("Cycleo Defined Earn-out Period"). To date, the Company has made $7.7 million in payments related to the Cycleo Earn-out. The Cycleo Defined Earn-out Period covers the period April 27, 2015 to April 26, 2020. For certain of the Cycleo Earn-out Beneficiaries, payment of the earn-out liability is contingent upon continued employment and is accounted for as post-acquisition compensation expense over the service period. The portion of the earn-out liability that is not dependent on continued employment is not considered as compensation expense. Based on historic and projected performance, the Company has recorded a liability for the Cycleo Earn-out of $2.2 million and $4.5 million as of October 27, 2019 and January 27, 2019, respectively.

Pursuant to the terms of an earn-out arrangement ("AptoVision Earn-out") with the former shareholders of AptoVision, which the Company acquired in July 2017, as of October 27, 2019, the Company potentially may make payments totaling up to approximately $35.3 million based on the achievement of a combination of certain net sales, adjusted earnings and product development targets measured from the acquisition date through July 26, 2020. The Company fully released its liability for the AptoVision Earn-out during the nine months ended October 27, 2019 based on the Company's assessment of performance.

A summary of earn-out liabilities, included in "Accrued liabilities" and "Other long-term liabilities" in the Balance Sheets, by classification follows:

	Balance at October 27, 2019			Balance at January 27, 2019		
(in thousands)	Cycleo	AptoVision	Total	Cycleo	AptoVision	Total
Compensation expense	$ 1,922	$ —	$ 1,922	$ 4,052	$ —	$ 4,052
Not conditional upon continued employment	310	—	310	462	2,161	2,623
Total liability	$ 2,232	$ —	$ 2,232	$ 4,514	$ 2,161	$ 6,675
Amount expected to be settled within twelve months	$ 2,232	$ —	$ 2,232			

Restructuring

From time to time, the Company takes steps to realign the business to focus on high-growth areas, provide customer value and make the Company more efficient. As a result, the Company has re-aligned resources and infrastructure predominantly related to its wireless charging business, which resulted in restructuring expense of zero and $2.1 million in the three and nine months ended October 27, 2019, respectively, and zero and $0.4 million in the three and nine months ended October 28, 2018, respectively, which were included in "Selling, general and administrative" within the Statements of Income. The Company does not expect a material amount of expenses related to this restructuring in future periods.

Note 12: Concentration of Risk

The following significant customers accounted for at least 10% of net sales in one or more of the periods indicated:

	Three Months Ended		Nine Months Ended	
(percentage of net sales)	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Trend-tek Technology Ltd. (and affiliates)	13%	14%	13%	13%
Frontek Technology Corporation (and affiliates)	12%	13%	11%	11%
Arrow Electronics (and affiliates)	10%	11%	9%	11%
CEAC International Ltd. (and affiliates)	10%	7%	7%	7%
Samsung Electronics (and affiliates)	4%	8%	5%	8%
Premier Technical Sales Korea, Inc. (and affiliates) (1)	8%	3%	7%	4%

(1) Premier is a distributor with a concentration of sales to Samsung. The above percentages represent the Company's estimate of the sales activity related to Samsung that is passing through this distributor.

The following table shows the customers that have an outstanding receivable balance that represents at least 10% of total net receivables as of the dates indicated:

	Balance as of	
(percentage of net sales)	October 27, 2019	January 27, 2019
Frontek Technology Corporation (and affiliates)	11%	10%
Trend-tek Technology Ltd. (and affiliates)	11%	11%

Outside Subcontractors and Suppliers

The Company relies on a limited number of third-party subcontractors and suppliers for the production of silicon wafers, packaging and certain other tasks. Disruption or termination of supply sources or subcontractors, including due to natural disasters such as an earthquake or other causes, could delay shipments and could have a material adverse effect on the Company. Although there are generally alternate sources for these materials and services, qualification of the alternate sources could cause delays sufficient to have a material adverse effect on the Company. Several of the Company's third-party subcontractors and suppliers, including third-party foundries that supply silicon wafers, are located in foreign countries, including China, Israel and Taiwan. A significant amount of the Company's assembly and test operations are conducted by third-party contractors in China, Malaysia, Taiwan, Thailand, South Korea and the Philippines. During the three and nine months ended October 27, 2019, approximately 30% and 23%, respectively, of the Company's silicon in terms of cost of wafers was supplied by a third-party foundry in China, and approximately 10% and 12%, respectively, of the Company's silicon in terms of cost of wafers was supplied by a third-party foundry in Israel. During the three and nine months ended October 28, 2018, approximately 15% and 16%, respectively, of the Company's silicon in terms of cost of wafers was supplied by a third-party foundry in China, and approximately 9% and 11%, respectively, of the Company's silicon in terms of cost of wafers was supplied by a third-party foundry in Israel. These percentages could be higher in future periods.

For the three and nine months ended October 27, 2019, authorized distributors accounted for approximately 76% and 70%, respectively, of the Company's net sales, compared to approximately 69% and 68%, respectively, for the three and nine months ended October 28, 2018. Generally, the Company does not have long-term contracts with its distributors and most can terminate their agreement with little or no notice. For the third quarter of fiscal year 2020, the Company's two largest distributors were based in Asia.

Note 13: Segment Information

The Company’s CEO functions as the chief operating decision maker ("CODM"). The CODM makes operating decisions and assesses performance based on the Company's major product lines, which represent its operating segments. The Company has three operating segments—Protection, Signal Integrity, and Wireless and Sensing—that have similar economic characteristics and have been aggregated into one reportable segment identified as the "Semiconductor Products Group."

The Company’s assets are commingled among the various operating segments and the CODM does not use asset information in making operating decisions or assessing performance. Therefore, the Company has not included asset information by segment in the segment disclosures below.

Net sales by segment were as follows:

	Three Months Ended		Nine Months Ended	
(in thousands)	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Semiconductor Products Group	$ 141,011	$ 173,550	$ 409,511	$ 467,190
Total	$ 141,011	$ 173,550	$ 409,511	$ 467,190

The following table presents a reconciliation of operating income by segment to consolidated income before taxes. Historical amounts have been adjusted to conform to the current presentation:

	Three Months Ended		Nine Months Ended	
(in thousands)	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Semiconductor Products Group	$ 33,904	$ 52,738	$ 94,037	$ 140,660
Operating income by segment	33,904	52,738	94,037	140,660
Items to reconcile segment operating income to consolidated income before taxes:				
Share-based compensation	8,767	11,466	28,741	60,947
Intangible amortization	3,770	6,480	12,821	19,921
Investment impairments	—	30,000	—	30,000
Changes in the fair value of contingent earn-out obligations	(152)	(8,519)	(2,313)	(9,419)
Restructuring and other reserves	—	86	2,711	518
Litigation cost, net of recoveries	205	(264)	930	(5,562)
Transaction and integration related	(851)	1,622	617	2,549
Interest expense	2,183	2,355	7,247	6,745
Non-operating income, net	(644)	(1,182)	(2,900)	(1,914)
Income before taxes	$ 20,626	$ 10,694	$ 46,183	$ 36,875

Information by Product Line

The Company operates exclusively in the semiconductor industry and primarily within the analog and mixed-signal sector.

The table below provides net sales activity by product line on a comparative basis:

	Three Months Ended				Nine Months Ended			
(in thousands, except percentages)	October 27, 2019		October 28, 2018		October 27, 2019		October 28, 2018	
Signal Integrity	$ 58,563	42%	$ 69,981	40%	$ 163,913	40%	$ 204,381	44 %
Wireless and Sensing	42,287	30%	50,484	29%	126,190	31%	144,435	31 %
Protection	40,161	28%	53,085	31%	119,408	29%	139,875	30 %
Other: Warrant Shares [(1)]	—	—%	—	—%	—	—%	(21,501)	(5)%
Total net sales	$ 141,011	100%	$ 173,550	100%	$ 409,511	100%	$ 467,190	100 %

[(1)] *For the nine-month period ended October 28, 2018, the net sales offset reflects the cost associated with the Warrant Shares of $21.5 million, including $15.9 million related to the Acceleration Event (see Note 3 for discussion regarding Share-Based Compensation).*

Information by Sales Channel

(in thousands)	Three Months Ended October 27, 2019	Three Months Ended October 28, 2018	Nine Months Ended October 27, 2019	Nine Months Ended October 28, 2018
Distributor	$ 107,383	$ 120,009	$ 287,642	$ 332,304
Direct	33,628	53,541	121,869	156,387
Other: Warrant Shares	—	—	—	(21,501)
Total net sales	$ 141,011	$ 173,550	$ 409,511	$ 467,190

Geographic Information

The Company generates virtually all of its sales from its Semiconductor Products Group through sales of analog and mixed-signal devices.

Net sales activity by geographic region was as follows:

	Three Months Ended October 27, 2019	Three Months Ended October 28, 2018	Nine Months Ended October 27, 2019	Nine Months Ended October 28, 2018
Asia-Pacific	75%	77%	76%	74 %
North America	16%	16%	15%	26 %
Europe	9%	7%	9%	7 %
Other: Warrant Shares	—%	—%	—%	(7)%
	100%	100%	100%	100 %

The Company attributes sales to a country based on the ship-to address. The table below summarizes sales activity to countries that represented greater than 10% of total net sales for at least one of the periods presented:

(percentage of total sales)	Three Months Ended October 27, 2019	Three Months Ended October 28, 2018	Nine Months Ended October 27, 2019	Nine Months Ended October 28, 2018
China (including Hong Kong)	50%	55%	52%	54%
United States	10%	10%	10%	11%

Note 14: Stock Repurchase Program

The Company maintains a stock repurchase program that was initially approved by its Board of Directors in March 2008. The stock repurchase program does not have an expiration date and the Company's Board of Directors has authorized expansion of the program over the years. The following table summarizes activity under the program for the presented periods:

	Three Months Ended				Nine Months Ended			
	October 27, 2019		October 28, 2018		October 27, 2019		October 28, 2018	
(in thousands, except number of shares)	Shares	Price Paid	Shares	Price Paid	Shares	Price Paid	Shares	Price Paid
Shares repurchased under the stock repurchase program	477,262	$ 22,526	536,680	$ 30,000	925,743	$ 42,636	1,677,433	$ 79,738

On May 24, 2018, the Company's Board of Directors authorized the expansion of the stock repurchase program by $250.0 million. As of October 27, 2019, the Company had repurchased $310.2 million in shares of its common stock under the program since inception and the remaining authorization under the program was $138.2 million. Under the program, the Company may repurchase its common stock at any time or from time to time, without prior notice, subject to market conditions and other considerations. The Company's repurchases may be made through Rule 10b5-1 and/or Rule 10b-18 or other trading plans, open market purchases, privately negotiated transactions, block purchases or other transactions. The Company intends to fund repurchases under the program from cash on hand. The Company has no obligation to repurchase any shares under the program and may suspend or discontinue it at any time.

Note 15: Derivatives and Hedging Activities

The Company is exposed to certain risk arising from both its business operations and economic conditions and principally manages its exposures to a wide variety of business and operational risks through management of its core business activities. The Company, on a routine basis and in the normal course of business, experiences expenses denominated in Swiss Franc, Canadian Dollar ("CAD") and Great British Pound ("GBP"). Such expenses expose the Company to exchange rate fluctuations between these foreign currencies and the U.S. Dollar ("USD"). The Company occasionally uses derivative financial instruments, in the form of forward contracts, to mitigate a portion of the risk associated with adverse movements in these foreign currency exchange rates during a twelve month window. Currency forward contracts involve fixing the exchange rate for delivery of a specified amount of foreign currency on a specified date.

The Company’s accounting treatment for these instruments is based on whether or not the instruments are designated as a hedging instrument. The Company is currently applying hedge accounting to all foreign currency derivatives and has designated these hedges as cash flow hedges.

At October 27, 2019, the Company did not have a material amount of outstanding foreign exchange contracts. For the first nine months of fiscal years 2020 and 2019, the impact of the foreign exchange contracts was not material.

Note 16: Subsequent Events

The Credit Facility was amended on November 7, 2019, to provide a more flexible borrowing structure by expanding the borrowing capacity of the Revolving Loans to $600.0 million, eliminating the Term Loans and extending the maturity to November 7, 2024. Up to $40.0 million of the Revolving Loans may be used to obtain letters of credit, up to $25.0 million of the Revolving Loans may be used to obtain swing line loans, and up to $40.0 million of the Revolving Loans may be used to obtain revolving loans and letters of credit in certain currencies other than U.S. Dollars ("Alternative Currencies"). The proceeds of the Revolving Loans may be used by the Company for capital expenditures, permitted acquisitions, permitted dividends, working capital and general corporate purposes.

The Credit Agreement provides that, subject to certain customary conditions, including obtaining commitments with respect thereto, the Company may request the establishment of one or more term loan facilities and/or increases to the Revolving Loans in a principal amount not to exceed (a) $300.0 million, plus (b) an unlimited amount, so long as the Company's consolidated leverage ratio, determined on a pro forma basis, does not exceed 3.00 to 1.00. However, the lenders are not required to provide such increase upon our request.

Interest on loans made under the Credit Facility in U.S. Dollars accrues, at the Company's option, at a rate per annum equal to (1) the Base Rate (as defined below) plus a margin ranging from 0.25% to 1.25% depending upon our consolidated leverage ratio or (2) LIBOR (determined with respect to deposits in U.S. Dollars) for an interest period to be selected by the Company plus a margin ranging from 1.25% to 2.25% depending upon the Company's consolidated leverage ratio (such margin, the "Applicable Margin"). The "Base Rate" is equal to a fluctuating rate equal to the highest of (a) the prime rate of the Administrative Agent, (b) 0.50% above the federal funds effective rate published by the Federal Reserve Bank of New York and (c) one-month LIBOR (determined with respect to deposits in U.S. Dollars), plus 1.00%.

Interest on loans made under the Credit Facility in Alternative Currencies accrues at a rate per annum equal to LIBOR (determined with respect to deposits in the applicable Alternative Currency) (other than loans made in Canadian Dollars, for which a special reference rate for Canadian Dollars applies) for an interest period to be selected by the Company plus the Applicable Margin.

Commitment fees on the unused portion of the Revolving Loans accrue at a rate per annum ranging from 0.20% to 0.35% depending upon the Company’s consolidated leverage ratio. The initial commitment fee rate is 0.20% per annum.

With respect to letters of credit, the Company will pay the Administrative Agent, for the account of the Lenders, letter of credit participation fees at a rate per annum equal to the Applicable Margin then in effect with respect to LIBOR-based loans on the face amount of all outstanding letters of credit. The Company will also pay HSBC Bank USA, N.A., as the issuing bank, a fronting fee for each letter of credit issued under the Credit Agreement at a rate equal to 0.125% per annum based on the maximum amount available to be drawn under each such letter of credit, as well as its customary documentation fees.

All obligations of the Company under the Credit Agreement are unconditionally guaranteed by all of the Company’s direct and indirect domestic subsidiaries, other than certain excluded subsidiaries, including, but not limited to, any domestic subsidiary the primary assets of which consist of equity or debt of non-U.S. subsidiaries, certain immaterial non-wholly-owned domestic subsidiaries and subsidiaries that are prohibited from providing a guarantee under applicable law or that would require governmental approval to provide such guarantee. The Company and the guarantors have also pledged substantially all of their assets to secure their obligations under the Credit Agreement.

No amortization is required with respect to the Revolving Loans and the Company may voluntarily prepay borrowings at any time and from time to time, without premium or penalty, other than customary "breakage costs" and fees for LIBOR-based loans.

In connection with the amendment of the Credit Agreement in the fourth quarter of fiscal year 2020, the Company drew $201.0 million in new Revolving Loans to pay off the outstanding principal on the Term Loans of approximately $101.3 million and Revolving Loans of $97.0 million, leaving $399.0 million of capacity remaining on the new Credit Facility. Related to this extinguishment of debt, we expect to write off $0.5 million of charges related to unamortized discounts and loan costs, which will be included in "Interest Expense" within the Statements of Income in the fourth quarter of fiscal year 2020.

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

The following "Management's Discussion and Analysis of Financial Condition and Results of Operations" should be read in conjunction with our unaudited condensed consolidated financial statements and the accompanying notes included in Part I, Item 1 of this Quarterly Report on Form 10-Q (this "Quarterly Report") and the "Special Note Regarding Forward-Looking and Cautionary Statements" in this Quarterly Report.

Overview

Semtech Corporation (together with its consolidated subsidiaries, the "Company", "we", "our", or "us") designs, develops, manufactures and markets high-performance analog and mixed signal semiconductors and advanced algorithms. We operate and account for results in one reportable segment through three product lines: Signal Integrity, Protection, and Wireless and Sensing.

Signal Integrity Products. We design, develop and market a portfolio of optical data communications and video transport products used in a wide variety of enterprise computing, communications, and industrial applications. Our comprehensive portfolio of integrated circuits ("ICs") for data centers, enterprise networks, passive optical networks ("PON"), and wireless base station optical transceivers and high-speed interfaces ranges from 100Mbps to 400Gbps and supports key industry standards such as Fibre Channel, Infiniband, Ethernet, PON and synchronous optical networks. Our video products offer advanced solutions for next generation high-definition broadcast applications, as well as highly differentiated video-over-IP technology for professional audio video ("Pro AV") applications.

Protection Products. We design, develop and market high-performance protection devices, which are often referred to as transient voltage suppressors ("TVS"). TVS devices provide protection for electronic systems where voltage spikes (called transients), such as electrostatic discharge, electrical over stress or secondary lightning surge energy, can permanently damage sensitive ICs. Our portfolio of protection solutions include filter and termination devices that are integrated with the TVS device. Our products provide robust protection while preserving signal integrity in high-speed communications, networking and video interfaces. These products also operate at very low voltage. Our protection products can be found in a broad range of applications including smart phones, LCD and organic light-emitting diode TVs and displays, set-top boxes, monitors and displays, tablets, computers, notebooks, base stations, routers, automobile and industrial instruments.

Wireless and Sensing Products. We design, develop and market a portfolio of specialized radio frequency products used in a wide variety of industrial, medical and communications applications, and specialized sensing products used in industrial and consumer applications. Our wireless products, which include our LoRa® devices and wireless radio frequency technology ("LoRa Technology"), feature industry leading and longest range industrial, scientific and medical radio, enabling a lower total cost of ownership and increased reliability in all environments. This makes these products particularly suitable for machine to machine and IoT applications. Our unique sensing technology enables proximity sensing and advanced user interface solutions for our mobile and consumer products. Our wireless and sensing products can be found in a broad range of applications in the industrial, medical, and consumer markets. We also design, develop, and market power product devices that control, alter, regulate, and condition the power within electronic systems focused on the LoRa® and IoT infrastructure segment. The highest volume product types within this category are switching voltage regulators, combination switching and linear regulators, smart regulators, isolated switches, and wireless charging.

Our interim unaudited condensed consolidated balance sheets are referred to herein as the "Balance Sheets" and interim unaudited condensed consolidated statements of income are referred to herein as the "Statements of Income."

Our net sales by product line were as follows:

	Three Months Ended		Nine Months Ended	
(in thousands)	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Signal Integrity	$ 58,563	$ 69,981	$ 163,913	$ 204,381
Wireless and Sensing	42,287	50,484	126,190	144,435
Protection	40,161	53,085	119,408	139,875
Other: Warrant Shares [1]	—	—	—	(21,501)
Total	$ 141,011	$ 173,550	$ 409,511	$ 467,190

[1] On October 5, 2016, we issued a warrant (the "Warrant") to Comcast Cable Communications Management LLC ("Comcast") to purchase up to 1,086,957 shares (the "Warrant Shares") of the common stock of Semtech Corporation. The Warrant was issued in connection with an agreement between the parties regarding the intended trial deployment by Comcast of a low-power wide-area Network ("LPWAN") in the U.S., based on our LoRa® devices and wireless radio frequency technology. As of January 27, 2019, the Warrant was fully vested and exercisable for a total of 869,565 shares, with no additional costs to be recognized in future periods. The Warrant was fully exercised and no longer outstanding as of March 15, 2019.

Factors Affecting Our Performance

Most of our sales to customers are made on the basis of individual customer purchase orders. Many customers include cancellation provisions in their purchase orders. Trends within the industry toward shorter lead-times and "just-in-time" deliveries have resulted in our reduced ability to predict future shipments. As a result, we rely on orders received and shipped within the same quarter for a significant portion of our sales. Orders received and shipped in the third quarters of fiscal years 2020 and 2019 represented 42% and 37% of net sales, respectively. Sales made directly to customers during the third quarters of fiscal years 2020 and 2019 were 24% and 31% of net sales, respectively. The remaining sales were made through independent distributors. Our business relies on foreign-based entities. Most of our outside subcontractors and suppliers, including third-party foundries that supply silicon wafers, are located in foreign countries, including China, Taiwan and Israel. For the third quarters of fiscal years 2020 and 2019, approximately 30% and 15%, respectively, of the Company's silicon in terms of cost of wafers was supplied by a third-party foundry in China, and 10% and 9%, respectively, of the Company's silicon in terms of cost of wafers was supplied by a third-party foundry in Israel. These percentages could be higher in future periods. Foreign sales constituted approximately 90% of our net sales during the third quarters of fiscal years 2020 and 2019. Approximately 75% and 77% of foreign sales during the third quarters of fiscal years 2020 and 2019, respectively, were to customers located in the Asia-Pacific region. The remaining foreign sales were primarily to customers in Europe, Canada, and Mexico.

We use several metrics as indicators of future potential growth. The indicators that we believe best correlate to potential future sales growth are design wins and new product releases. There are many factors that may cause a design win or new product release not to result in sales, including a customer decision not to go to system production, a change in a customer's perspective regarding a product's value or a customer's product failing in the end market. As a result, although a design win or new product introduction is an important step towards generating future sales, it does not inevitably result in us being awarded business or receiving a purchase commitment.

Historically, our results have reflected some seasonality, with demand levels generally lower during the first and fourth quarters of our fiscal year in comparison to the second and third quarters. Inflationary factors have not had a significant effect on our performance over the past several years. A significant increase in inflation would affect our future performance if we were unable to pass these higher costs on to our customers. We are continuing to monitor the near term geopolitical uncertainty and the recent export restrictions on shipments to Huawei Technologies Co., Ltd. ("Huawei") and certain of its affiliates. The following discussion reflects our current assessment of the near term impact of this uncertainty.

Revenue and Cost of Sales

We derive our revenue primarily from the sale of semiconductor products into various end markets. Revenue is recognized when control of these products is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for these products. Control is generally transferred when products are shipped and, to a lesser extent, when the products are delivered. Recovery of costs associated with product design and engineering services are recognized during the period in which services are performed and are reported as a reduction to product development and engineering expense. Historically, these recoveries have not exceeded the cost of the related development efforts. We include revenue related to granted technology licenses as part of "Net sales" in the Statements of Income. Historically, revenue from these arrangements has not been significant though it is part of our recurring ordinary business.

We determine revenue recognition through the following five 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
- Recognition of revenue when, or as, performance obligations are satisfied

We account for a contract when it has approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable.

Our revenue contracts generally represent a single performance obligation to sell our products to trade customers. Net sales reflect the transaction prices for contracts, which include units shipped at selling prices reduced by variable consideration. Determination of variable consideration requires judgment by us. Variable consideration includes expected sales returns and other price adjustments. Variable consideration is estimated using the expected value method considering all reasonably available information, including our historical experience and our current expectations, and is reflected in the transaction price when sales are recorded. Sales returns are generally accepted at our discretion or from distributors with such rights. Our contracts with trade customers do not have significant financing components or non-cash consideration. We record net sales excluding taxes collected on our sales to our trade customers.

We provide an assurance type warranty, which is typically not sold separately and does not represent a separate performance obligation. Our payment terms are generally aligned with shipping terms.

On October 5, 2016, we issued a Warrant to Comcast to purchase up to 1,086,957 Warrant Shares. The cost of the Warrant Shares is recognized as an offset to net sales. On April 27, 2018, we accelerated the vesting of the remaining 586,956 unvested shares from the Warrant ("Acceleration Event"), resulting in the full recognition of the previously unrecognized costs. For the nine-month period ended October 28, 2018, the net sales offset reflects the cost associated with the Warrant Shares of $21.5 million, including $15.9 million related to the Acceleration Event. As of January 27, 2019, the Warrant was fully vested and exercisable for a total of 869,565 shares, with no additional costs to be recognized in future periods. The Warrant was fully exercised and no longer outstanding as of March 15, 2019.

Gross Profit

Gross profit is equal to our net sales less our cost of sales. Our cost of sales includes materials, depreciation on fixed assets used in the manufacturing process, shipping costs, direct labor and overhead. We determine the cost of inventory by the first-in, first-out method.

Operating Costs

Our operating costs and expenses generally consist of selling, general and administrative, product development and engineering costs, costs associated with acquisitions, restructuring charges, and other operating related charges.

Results of Operations

The following table sets forth, for the periods indicated, our Statements of Income expressed as a percentage of net sales.

	Three Months Ended		Nine Months Ended	
	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Net sales	100.0 %	100.0 %	100.0 %	100.0 %
Cost of sales	38.8 %	38.6 %	38.4 %	40.5 %
Gross profit	61.2 %	61.4 %	61.6 %	59.5 %
Operating costs and expenses:				
Selling, general and administrative	24.0 %	22.8 %	27.4 %	24.5 %
Product development and engineering	18.9 %	15.6 %	19.4 %	17.4 %
Intangible amortization	2.7 %	3.7 %	3.1 %	4.3 %
Changes in the fair value of contingent earn-out obligations	(0.1)%	(4.9)%	(0.6)%	(2.0)%
Total operating costs and expenses	45.4 %	37.3 %	49.3 %	44.2 %
Operating income	15.7 %	24.1 %	12.3 %	15.3 %
Interest expense	(1.5)%	(1.4)%	(1.8)%	(1.4)%
Non-operating income, net	0.5 %	0.7 %	0.7 %	0.4 %
Investment impairments	— %	(17.3)%	— %	(6.4)%
Income before taxes and equity in net gains (losses) of equity method investments	14.6 %	6.2 %	11.3 %	7.9 %
Provision (benefit) for income taxes	2.4 %	(0.8)%	2.4 %	(2.8)%
Net income before equity in net gains (losses) of equity method investments	12.2 %	7.0 %	8.8 %	10.7 %
Equity in net gains (losses) of equity method investments	0.2 %	— %	— %	— %
Net income	12.5 %	7.0 %	8.9 %	10.6 %
Percentages may not add precisely due to rounding.				

Our regional mix of income (loss) from continuing operations before taxes and equity in net gains (losses) of equity method investments was as follows:

(in thousands)	Three Months Ended		Nine Months Ended	
	October 27, 2019	October 28, 2018	October 27, 2019	October 28, 2018
Domestic	$ 2,212	$ (1,647)	$ (12,682)	$ (12,871)
Foreign	18,414	12,341	58,865	49,746
Total	$ 20,626	$ 10,694	$ 46,183	$ 36,875

Domestic performance from continuing operations includes amortization of acquired intangible assets and higher levels of share-based compensation compared to foreign operations.

Comparison of the Three Months Ended October 27, 2019 and October 28, 2018

All periods presented in the following summary of net sales by major end market reflect our current classification methodology (see Note 1 to our unaudited condensed consolidated financial statements for a description of each market category):

(in thousands, except percentages)	Three Months Ended			
	October 27, 2019		October 28, 2018	
Industrial	$ 48,013	34%	$ 52,828	30%
Enterprise Computing	43,226	31%	51,776	30%
High-End Consumer	35,644	25%	49,370	29%
Communications	14,128	10%	19,576	11%
Total	$ 141,011	100%	$ 173,550	100%

Net Sales

Net sales for the third quarter of fiscal year 2020 were $141.0 million, a decrease of 18.7% compared to $173.6 million for the third quarter of fiscal year 2019. During the third quarter of fiscal year 2020, we experienced continued weakness in China-based demand across all of our end markets, primarily due to geopolitical headwinds driven by export restrictions and tariffs imposed by the U.S. government. The high-end consumer end market declined due to lower China and Korea-based demand for smartphones and softer demand for our proximity sensing products. The enterprise computing end market declined due to lower PON demand, primarily in China, and lower data center demand by cloud and hyper scale providers, while the communications end market declined on softer demand for base stations for the wireless infrastructure market. The industrial end market declined on lower overall demand for our broad-based industrial products that address a number of diverse markets.

Based on bookings trends and our backlog entering the quarter, we estimate net sales for the fourth quarter of fiscal year 2020 to be between $130.0 million and $140.0 million. The range of guidance reflects continued uncertainty regarding macro-related events associated with the geopolitical headwinds discussed above.

Gross Profit

For the third quarter of fiscal year 2020, gross profit decreased to $86.2 million from $106.6 million for the third quarter of fiscal year 2019. Gross margins were 61.2% for the third quarter of fiscal year 2020 compared to 61.4% for the third quarter of fiscal year 2019. For the third quarter of fiscal year 2020, our gross margins remained within our target range and reflected shifts in product mix and inventory valuation allowances.

For the fourth quarter of fiscal year 2020, we expect our gross margins to be in the range of 60.6% to 61.6%.

Operating Costs and Expenses

(in thousands, except percentages)	Three Months Ended				Change
	October 27, 2019		October 28, 2018		
Selling, general and administrative	$ 33,795	53 %	$ 39,587	61 %	(15)%
Product development and engineering	26,670	41 %	27,147	42 %	(2)%
Intangible amortization	3,770	6 %	6,480	10 %	(42)%
Changes in the fair value of contingent earn-out obligations	(152)	— %	(8,519)	(13)%	(98)%
Total operating costs and expenses	$ 64,083	100 %	$ 64,695	100 %	(1)%

Selling, General and Administrative Expenses

Selling, general and administrative ("SG&A") expenses decreased for the third quarter of fiscal year 2020 compared to the same quarter of fiscal year 2019 primarily as a result of lower levels of performance-based compensation, including share-based compensation tied to total stockholder return.

Product Development and Engineering Expenses

Product development and engineering expenses decreased for the third quarter of fiscal year 2020 compared to the third quarter of fiscal year 2019 as a result of fluctuations in the timing of development activities. The levels of product development and engineering expenses reported in a fiscal period can be significantly impacted, and therefore experience period-over-period volatility, by the number of new product tape-outs and by the timing of recoveries from non-recurring engineering services, which are typically recorded as a reduction to product development and engineering expense.

Intangible Amortization

Intangible amortization was $3.8 million and $6.5 million for the third quarters of fiscal years 2020 and 2019, respectively. This decrease was primarily due to certain finite-lived intangible assets associated with the acquisition of Gennum Corporation that had become fully amortized during fiscal year 2020.

Interest Expense

Interest expense, including amortization of debt discounts and issuance costs, was $2.2 million and $2.4 million for the third quarters of fiscal years 2020 and 2019, respectively. This decrease was primarily due to lower overall debt levels.

Investment Impairments

During the third quarter of fiscal year 2019, we reduced our expectation of Multiphy Ltd.'s future operating performance due to new information that became available during the quarter. We concluded that the competitive landscape had evolved and that product release and broad market adoption of 400G PAM4 digital signal processing (DSP) technology was delayed. As a result of these indicators of impairment, we tested the investment for an other-than-temporary impairment using a discounted cash flow model. The results of its analysis indicated that the investment was other than temporarily impaired by $30.0 million, representing the entire carrying value of the investment.

Provision (Benefit) for Income Taxes

The effective tax rates for the third quarters of fiscal years 2020 and 2019 were a provision rate of 16.1% and an income tax benefit rate of 13.6%, respectively. In the third quarter of fiscal year 2020, we recorded a provision of $3.4 million, compared to an income tax benefit of $1.5 million in the third quarter of fiscal year 2019. The effective tax rate in the third quarter of fiscal year 2020 differs from the statutory federal income tax rate of 21% primarily due to a regional mix of income. The effective tax rate in the third quarter of fiscal year 2019 differs from the statutory federal income tax rate of 21% primarily due to regional mix of income and return to provision adjustments recorded for the Transition Tax.

As a global organization, we are subject to audit by taxing authorities in various jurisdictions. To the extent that an audit, or the closure of a statute of limitations, results in adjusting our reserves for uncertain tax positions, our effective tax rate could experience extreme volatility since any adjustment would be recorded as a discrete item in the period of adjustment.

Comparison of the Nine Months Ended October 27, 2019 and October 28, 2018

All periods presented in the following summary of net sales by major end market reflect our current classification methodology (see Note 1 to our unaudited condensed consolidated financial statements for a description of each market category):

	Nine Months Ended			
(in thousands, except percentages)	October 27, 2019		October 28, 2018	
Industrial	$ 135,887	33%	$ 151,419	33 %
Enterprise Computing	116,171	29%	150,315	32 %
High-End Consumer	115,930	28%	131,542	28 %
Communications	41,523	10%	55,415	12 %
Other: Warrant Shares	—	—%	(21,501)	(5)%
Total	$ 409,511	100%	$ 467,190	100 %

Net Sales

Net sales for the first nine months of fiscal year 2020 were $409.5 million, a decrease of 12.3% compared to $467.2 million in the first nine months of fiscal year 2019. During the first nine months of fiscal year 2020, China-related demand weakened and contributed to weakness across all end markets, primarily due to geopolitical headwinds driven by export restrictions and tariffs imposed by the U.S. government. The enterprise computing end market declined due to lower PON demand in China and lower data center demand at cloud computing and hyper scale providers. Industrial end market performance reflects a decline in

China-based LoRa® product demand. High-end consumer end market declines reflected weaker China and Korea-based demand for smartphones and our proximity sensing products. The communications end market declined on softer demand for base stations for the wireless infrastructure market. The cost of the Warrant Shares, which were recorded as an offset to net sales, fully vested in the first quarter of fiscal year 2019, and therefore, did not impact the first nine months of fiscal year 2020. For the first nine months of fiscal year 2019, the cost associated with the Warrant Shares was $21.5 million, which included $15.9 million related to the Acceleration Event (see Note 3).

Gross Profit

For the first nine months of fiscal year 2020, gross profit decreased to $252.4 million from $278.2 million for the first nine months of fiscal year 2019 as a result of lower sales. Gross margins were 61.6% for the first nine months of fiscal year 2020 compared to 59.5% for the first nine months of fiscal year 2019. For the first nine months of fiscal year 2019, gross margins were unfavorably impacted by the costs of the Warrant Shares.

Operating Costs and Expenses

	Nine Months Ended				
(in thousands, except percentages)	October 27, 2019		October 28, 2018		Change
Selling, general and administrative	$ 112,047	56 %	114,522	56 %	(2)%
Product development and engineering	79,322	39 %	81,425	39 %	(3)%
Intangible amortization	12,821	6 %	19,921	10 %	(36)%
Changes in the fair value of contingent earn-out obligations	(2,313)	(1)%	(9,419)	(5)%	(75)%
Total operating costs and expenses	$ 201,877	100 %	$ 206,449	100 %	(2)%

Selling, General and Administrative Expenses

SG&A expenses decreased for the first nine months of fiscal year 2020 compared to the first nine months of fiscal year 2019 primarily as a result of lower levels of performance-based compensation, driven by the absence of the impact of a share-based award modification made in fiscal year 2019, which resulted in a fair value re-measurement of the modified awards, and lower share-based compensation tied to total stockholder return. This benefit was partially offset by a reduction in legal recoveries related to the settlement of the lawsuit filed against HiLight Semiconductor Limited and related individual defendants (the "HiLight lawsuit"). The Company received $6.7 million in the first nine months of fiscal year 2019, compared to $1.0 million received in the first nine months of fiscal year 2020. Additionally, restructuring costs of $2.1 million in the first nine months of fiscal year 2020, were higher compared to $0.4 million in the first nine months of fiscal year 2019.

Product Development and Engineering Expenses

Product development and engineering expenses decreased in the first nine months of fiscal year 2020 compared to the first nine months of fiscal year 2019 as a result of fluctuations in the timing of development activities and lower performance-based compensation. The levels of product development and engineering expenses reported in a fiscal period can be significantly impacted, and therefore experience period over period volatility, by the number of new product tape-outs and by the timing of recoveries from non-recurring engineering services, which are typically recorded as a reduction to product development and engineering expense.

Intangible Amortization

Intangible amortization was $12.8 million and $19.9 million for the first nine months of fiscal years 2020 and 2019, respectively. This decrease was primarily due to certain finite-lived intangible assets associated with the acquisition of Gennum Corporation that had become fully amortized during fiscal year 2020.

Interest Expense

Interest expense, including amortization of debt discounts and issuance costs, was $7.2 million and $6.7 million for the first nine months of fiscal years 2020 and 2019, respectively. This increase was primarily due to higher interest rates, partially offset by lower overall debt levels.

Investment Impairments

During the first nine months of fiscal year 2019, we reduced our expectation of Multiphy Ltd.'s future operating performance due to new information that became available during the quarter. We concluded that the competitive landscape had evolved and that product release and broad market adoption of 400G PAM4 digital signal processing (DSP) technology was delayed. As a result of these indicators of impairment, we tested the investment for an other-than-temporary impairment using a discounted cash flow model. The results of its analysis indicated that the investment was other than temporarily impaired by $30.0 million, representing the entire carrying value of the investment.

Provision (Benefit) for Income Taxes

The effective tax rates for the first nine months of fiscal years 2020 and 2019 were a provision rate of 21.7% and an income tax benefit rate of 35.0%, respectively. In the first nine months of fiscal year 2020, we recorded a provision of $10.0 million, compared to an income tax benefit of $12.9 million in the first nine months of fiscal year 2019. The effective tax rate in the first nine months of fiscal year 2020 was higher than the effective tax rate in the first nine months of fiscal year 2019 primarily due to fiscal year 2019 having a $15.8 million benefit related to a partial release of the valuation reserve against our U.S. deferred tax assets. The effective tax rate in the first nine months of fiscal year 2020 differs from the statutory federal income tax rate of 21% primarily due to a regional mix of income and the impact of the final regulations on the U.S. transition tax. The effective tax rate in the first nine months of fiscal year 2019 differs from the statutory federal income tax rate of 21% primarily due to regional mix of income and a partial release of the valuation reserve against our U.S. deferred tax assets.

As a global organization, we are subject to audit by taxing authorities in various jurisdictions. To the extent that an audit, or the closure of a statute of limitations, results in adjusting our reserves for uncertain tax positions, our effective tax rate could experience extreme volatility since any adjustment would be recorded as a discrete item in the period of adjustment.

Liquidity and Capital Resources

Our capital requirements depend on a variety of factors including, but not limited to, the rate of increase or decrease in our existing business base; the success, timing and amount of investment required to bring new products to market; sales growth or decline; and potential acquisitions. We believe that we have the financial resources necessary to meet business requirements for the next 12 months, including funds needed for working capital requirements.

As of October 27, 2019, our total stockholders’ equity was $688.7 million. At that date, we also had approximately $283.1 million in cash and cash equivalents and $198.3 million of outstanding borrowings on our Credit Facility (defined below), which had $153.0 million of undrawn capacity on our Revolving Loans (defined below). On November 7, 2019, the Credit Agreement was amended to provide a more flexible borrowing structure by expanding the borrowing capacity of the Revolving Loans to $600.0 million, eliminating the Term Loans and extending the maturity to November 7, 2024 (see "Credit Facility" below).

We incur significant expenditures in order to fund the development, design, and manufacture of new products. We intend to continue to focus on those areas that have shown potential for viable and profitable market opportunities, which may require additional investment in equipment and the hiring of additional design and application engineers aimed at developing new products. Certain of these expenditures, particularly the addition of design engineers, do not generate significant payback in the short-term. We plan to finance these expenditures with cash generated by our operations and our existing cash balances.

A meaningful portion of our capital resources, and the liquidity they represent, are held by our foreign subsidiaries. As of October 27, 2019, our foreign subsidiaries held approximately $224.0 million of cash and cash equivalents, compared to $253.1 million at January 27, 2019. In connection with the enactment of the Tax Act, all historic and current foreign earnings are taxed in the U.S. and are subject to a 5% withholding tax, if repatriated. We have determined that we will repatriate back to the U.S. approximately $240.0 million of foreign earnings of which $156.0 million has been repatriated since fiscal year 2019. As of October 27, 2019, our foreign subsidiaries had $517.1 million of unremitted earnings for which no taxes have been provided. Those historical earnings have been and are expected to continue to be permanently reinvested.

Cash Flows

One of our primary goals is to continually improve the cash flows from our existing business activities. Additionally, we will continue to seek to maintain and improve our existing business performance with capital expenditures and, potentially, acquisitions and other investments that support achievement of our business strategies. Acquisitions may be made for either cash or stock consideration, or a combination of both.

In summary, our cash flows for each period were as follows:

	Nine Months Ended	
(in thousands)	October 27, 2019	October 28, 2018
Net cash provided by operating activities	$ 73,361	$ 136,365
Net cash used in investing activities	(29,672)	(25,181)
Net cash used in financing activities	(72,752)	(106,871)
Net (decrease) increase in cash and cash equivalents	$ (29,063)	$ 4,313

Operating Activities

Net cash provided by operating activities is primarily due to net income adjusted for non-cash items plus fluctuations in operating assets and liabilities.

Operating cash flows for the first nine months of fiscal year 2020 were unfavorably impacted by a $79.2 million reduction in net sales, compared to the first nine months of fiscal year 2019, excluding the $21.5 million net sales offset impact of the Warrant Shares in fiscal year 2019. Operating cash flows for the first nine months of fiscal year 2020 were also impacted by a $6.4 million increase in net inventory. Operating cash flows for the first nine months of fiscal year 2019 were favorably impacted by higher proceeds received from the settlement of the HiLight lawsuit of $6.7 million in the first nine months of fiscal year 2019, compared to $1.0 million received in the first nine months of fiscal year 2020.

Investing Activities

Net cash used in investing activities is primarily attributable to capital expenditures and purchases of investments, net of proceeds from sales of property, plant and equipment and proceeds from sales of investments. Investing activities are also impacted by acquisitions, net of any cash received.

Capital expenditures were $20.4 million for the first nine months of fiscal year 2020, compared to $12.9 million for the first nine months of fiscal year 2019.

In the first nine months of fiscal year 2020, we made significant investments to update and expand our production capabilities including the $4.0 million purchase of a facility in Colorado.

During the remainder of fiscal year 2020, we expect to significantly reduce our investments in property, plant and equipment, but continue to invest in companies that are enabling the LoRa®- and LoRaWAN™-based ecosystem. In the first nine months of fiscal year 2020, we made $9.6 million of strategic investments, including investments in companies that are enabling the LoRa®- and LoRaWAN™-based ecosystem.

On May 2, 2018, we acquired substantially all of the assets of IC Interconnect, Inc., a privately-held, U.S.-based company for approximately $7.4 million. We funded the purchase price using cash on hand. On August 17, 2018, we, through our subsidiary Semtech (International) AG, a Swiss corporation, entered into a share purchase agreement to purchase all of the outstanding equity interests of Trackio International AG, a Swiss corporation, and its subsidiaries (collectively, "TrackNet"), for an aggregate purchase price of approximately $8.5 million. The acquisition of TrackNet was accrued for during the third quarter of fiscal year 2019 and paid for during the fourth quarter of fiscal year 2019.

Financing Activities

Net cash used in financing activities is primarily attributable to repurchases of outstanding common stock, payments related to employee share-based compensation payroll taxes and principal payments related to our long-term debt, offset by proceeds from stock option exercises.

In the first nine months of fiscal year 2019, we settled the AptoVision earn-out for the performance period ended July 29, 2018. Of the total earn-out distribution for this performance period, $8.5 million was attributable to the original acquisition fair value and therefore presented as a financing activity.

In the first nine months of fiscal year 2020, we paid $20.5 million for employee share-based compensation payroll taxes and received $4.4 million in proceeds from the exercise of stock options, compared to payments of $17.8 million for employee share-based compensation payroll taxes and proceeds of $10.4 million from the exercise of stock options in the first nine months of fiscal year 2019. We do not directly control the timing of the exercise of stock options. Such exercises are independent decisions made by grantees and are influenced most directly by the stock price and the expiration dates of stock option awards. Such proceeds are difficult to forecast, resulting from several factors that are outside our control. We believe that such proceeds will remain a nominal source of cash in the future.

Stock Repurchase Program

We currently have in effect a stock repurchase program that was initially approved by our Board of Directors in March 2008. On May 24, 2018, our Board of Directors increased the authorization by $250.0 million. This program represents one of our principal efforts to return value to our stockholders. We repurchased 925,743 shares under this program in the first nine months of fiscal year 2020 for $42.6 million. In the first nine months of fiscal year 2019, we repurchased 1,677,433 shares under this program for $79.7 million. As of October 27, 2019, the remaining authorization under this program was $138.2 million.

Credit Facility

On November 15, 2016 (the "Closing Date"), we, with certain of our domestic subsidiaries as guarantors, entered into an amended and restated credit agreement ("Credit Agreement") with the lenders party thereto (the "Lenders") and HSBC Bank USA, National Association, as administrative agent, swing line lender and letter of credit issuer ("Administrative Agent"). Pursuant to the Credit Agreement, the Lenders provided us with senior secured first lien credit facilities in an aggregate principal amount of $400.0 million (the "Credit Facility"), consisting of term loans in an aggregate principal amount of $150.0 million (the "Term Loans") and revolving commitments in an aggregate principal amount of $250.0 million (the "Revolving Loans"). Up to $40.0 million of the Revolving Loans may be used to obtain letters of credit, up to $25.0 million of the Revolving Loans may be used to obtain swing line loans, and up to $40.0 million of the Revolving Loans may be used to obtain revolving loans and letters of credit in certain currencies other than U.S. Dollars ("Alternative Currencies"). The Credit Facility was scheduled to mature on November 12, 2021. As of October 27, 2019, we had $101.3 million of outstanding borrowings under our Term Loans and $97.0 million of outstanding borrowings under our Revolving Loans, which had $153.0 million of undrawn capacity.

On November 7, 2019, the Credit Agreement was amended to provide a more flexible borrowing structure by expanding the borrowing capacity of the Revolving Loans to $600.0 million, eliminating the Term Loans and extending the maturity to November 7, 2024. Up to $40.0 million of the Revolving Loans may be used to obtain letters of credit, up to $25.0 million of the Revolving Loans may be used to obtain swing line loans, and up to $40.0 million of the Revolving Loans may be used to obtain revolving loans and letters of credit in certain currencies other than U.S. Dollars ("Alternative Currencies"). The proceeds of the Revolving Loans may be used by us for capital expenditures, permitted acquisitions, permitted dividends, working capital and general corporate purposes.

The Credit Agreement provides that, subject to certain customary conditions, including obtaining commitments with respect thereto, we may request the establishment of one or more term loan facilities and/or increases to the Revolving Loans in a principal amount not to exceed (a) $300.0 million, plus (b) an unlimited amount, so long as our consolidated leverage ratio, determined on a pro forma basis, does not exceed 3.00 to 1.00. However, the lenders are not required to provide such increase upon our request.

Interest on loans made under the Credit Facility in U.S. Dollars accrues, at our option, at a rate per annum equal to (1) the Base Rate (as defined below) plus a margin ranging from 0.25% to 1.25% depending upon our consolidated leverage ratio or (2) LIBOR (determined with respect to deposits in U.S. Dollars) for an interest period to be selected by us plus a margin ranging from 1.25% to 2.25% depending upon our consolidated leverage ratio (such margin, the "Applicable Margin"). The "Base Rate" is equal to a fluctuating rate equal to the highest of (a) the prime rate of the Administrative Agent, (b) 0.50% above the federal funds effective rate published by the Federal Reserve Bank of New York and (c) one-month LIBOR (determined with respect to deposits in U.S. Dollars), plus 1.00%.

Interest on loans made under the Credit Facility in Alternative Currencies accrues at a rate per annum equal to LIBOR (determined with respect to deposits in the applicable Alternative Currency) (other than loans made in Canadian Dollars, for which a special reference rate for Canadian Dollars applies) for an interest period to be selected by us plus the Applicable Margin.

No amortization is required with respect to the Revolving Loans and we may voluntarily prepay borrowings at any time and from time to time, without premium or penalty, other than customary "breakage costs" and fees for LIBOR-based loans.

In connection with the amendment of the Credit Agreement in the fourth quarter of fiscal year 2020, we drew $201.0 million in new Revolving Loans to pay off the outstanding principal on the Term Loans of approximately $101.3 million and Revolving Loans of $97.0 million, leaving $399.0 million of capacity remaining on the new Credit Facility. Related to this extinguishment of debt, we expect to write off $0.5 million of charges related to unamortized discounts and loan costs, which will be included in "Interest Expense" within the Statements of Income in the fourth quarter of fiscal year 2020.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements, as those arrangements are defined by the SEC, that are reasonably likely to have a material effect on our financial condition, revenues or expenses, operating results, liquidity, capital expenditures or capital resources.

We do not have any unconsolidated subsidiaries or affiliated entities. We have no special purpose or limited purpose entities that provide off-balance sheet financing, liquidity or market or credit risk support. We do not engage in leasing, hedging, research and development services, or other relationships that expose us to liability that is not reflected on the face of the consolidated financial statements.

Contractual Obligations

There were no material changes in our contractual obligations during the first nine months of fiscal year 2020 from those disclosed in "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in Item 7 of our Annual Report on Form 10-K for the fiscal year ended January 27, 2019 filed with the U.S. Securities and Exchange Commission on March 21, 2019 (our "Annual Report"). As discussed above, subsequent to October 27, 2019, we amended the Credit Agreement to provide a more flexible borrowing structure by expanding the borrowing capacity of the Revolving Loans to $600.0 million, eliminating the Term Loans and extending the maturity to November 7, 2024. In connection with the amendment of the Credit Agreement, we drew $201.0 million in new Revolving Loans to pay off the outstanding principal on the Term Loans of approximately $101.3 million and Revolving Loans of $97.0 million, leaving $399.0 million of capacity remaining on the new Credit Facility.

Critical Accounting Policies and Estimates

Our critical accounting policies are disclosed in "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in Item 7 of our Annual Report. There have been no significant changes to our policies during the nine months ended October 27, 2019, except as discussed below related to our adoption of the new leasing standard. For a discussion of recent accounting pronouncements, see Note 1 to our unaudited condensed consolidated financial statements.

Leases

We have contracts where we are the lessee for real estate, vehicles, and office equipment. We do not have any material leases in which we are considered the lessor. Our leases have remaining lease terms of 1 year to 7 years, some of which include options to extend the leases for up to 5 years, and some of which include options to terminate the leases within 1 year.

We determine whether an arrangement is a lease at inception if we are both able to identify an asset and can conclude we have the right to control the identified asset for a period of time. Leases are recorded as right-of-use ("ROU") assets, other current liabilities, and operating lease liabilities. ROU assets are included in "Other assets", other current liabilities are included in "Accrued liabilities" and operating lease liabilities are included in "Other long-term liabilities" in the Balance Sheets. Leases with an initial term of 12 months or less are not recorded in the Balance Sheets.

ROU assets represent our right to control an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. ROU assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. Our leases typically do not include any residual value guarantees, bargain purchase options, or asset retirement obligations.

Our lease terms are only for periods in which we have enforceable rights. A lease is no longer enforceable when both the lessee and the lessor each have the right to terminate the lease without permission from the other party with no more than an insignificant penalty. Our lease terms are impacted by options to extend or terminate the lease when it is reasonably certain that we will exercise that option.

We have lease agreements with lease and non-lease components, which are generally accounted for as a single lease component. To the extent that our agreements have variable lease payments, we include variable lease payments that depend on an index or a rate and exclude those which depend on facts or circumstances occurring after the commencement date, other than the passage of time.

We concluded a lease exists when the asset is specifically identifiable, substantially all the economic benefit of the asset is obtained, and the right to direct the use of the asset exists during the term of the lease. Most of our leases do not contain an implicit interest rate; therefore, judgment was required in determining a rate that reflects what we would pay to borrow, on a collateralized basis and over a similar term, for our lease obligations. We determined our incremental borrowing rate based on discussions with lenders and other information available at commencement date. We use the portfolio approach when applying the discount rate selected based on the dollar amount and term of the obligation.

Available Information

General information about us can be found on our website at www.semtech.com. The information on our website is for informational purposes only and should not be relied on for investment purposes. The information on our website is not incorporated by reference into this Quarterly Report and should not be considered part of this or any other report filed with the SEC.

We make available free of charge, either by direct access on our website or by a link to the SEC website, our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or as soon as reasonably practicable after such reports are electronically filed with, or furnished to, the SEC. Our reports filed with, or furnished to, the SEC are also available directly at the SEC's website at www.sec.gov.

ITEM 3. Quantitative and Qualitative Disclosures About Market Risk

We are subject to a variety of market risks, including commodity risk and the risks related to foreign currency, interest rates and market performance that are discussed in Item 7A of our Annual Report. Many of the factors that can have an impact on our market risk are external to us, and so we are unable to fully predict them.

We do not engage in the trading of derivative financial instruments in the normal course of business to mitigate our risk related to interest rates. In the event interest rates were to increase 100 basis points and holding all other variables constant, annual net income and cash flows for the following year would decrease by approximately $1.9 million as a result of our variable-rate debt. The effect of the 100 basis points increase would not be expected to significantly impact the fair value of our variable-rate debt.

Our investments are primarily subject to credit risk. Our investments are managed by a limited number of outside professional managers following investment guidelines set by us. Such guidelines prescribe credit quality, permissible investments, diversification, and duration restrictions. These restrictions are intended to limit risk by restricting our investments to high quality debt instruments with relatively short-term durations. Our investment strategy limits investment of new funds and maturing securities to U.S. Treasury, Federal agency securities, high quality money market funds and time deposits with our principal commercial banks.

We considered the historical trends in foreign currency exchange rates and determined that it is reasonably possible that adverse changes in foreign exchange rates of 10% for all currencies could be experienced in the near-term. These reasonably possible adverse changes were applied to our total monetary assets and liabilities denominated in currencies other than our functional currency as of the third quarter of fiscal year 2020. The adverse impact these changes would have had (after taking into account balance sheet hedges only) on our income before taxes is $1.1 million.

ITEM 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, which are designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), as appropriate to allow timely decisions regarding required disclosure. Our management, with the participation of our CEO and CFO, evaluated the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this Quarterly Report. Based on that evaluation, our CEO and CFO concluded that, our disclosure controls and procedures were effective as of October 27, 2019.

Changes in Internal Controls

As of October 27, 2019, there were no changes to our internal control over financial reporting that occurred during the fiscal quarter then ended 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

Information about legal proceedings is set forth in Note 11 to the unaudited condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report.

ITEM 1A. Risk Factors

Please carefully consider and evaluate all of the information in this Quarterly Report and the risk factors set forth in our Annual Report. The risks set forth in our Annual Report on Form 10-K are not the only ones we face. Additional risks not now known to us or that we currently deem immaterial may also impair our business operations. If any of these risks actually occur, our business could be materially harmed. If our business is harmed, the trading price of our common stock could decline.

The risk factors associated with our business have not materially changed, as compared to the risk factors disclosed in our Annual Report except for the following updated risk factors below.

We are subject to export restrictions and laws affecting trade and investments.

As a global company headquartered in the U.S., we are subject to U.S. laws and regulations that limit and restrict the export of some of our products and services and may restrict our transactions with certain customers, business partners and other persons, including, in certain cases, dealings with or between our employees and subsidiaries. In certain circumstances, export control and economic sanctions regulations may prohibit the export of certain products, services and technologies, and in other circumstances we may be required to obtain an export license before exporting the controlled item. Compliance with these laws has not significantly limited our operations or our sales in the recent past, but could significantly limit them in the future. We maintain an export compliance program but there are risks that the compliance controls could be circumvented, exposing us to legal liabilities. We must also comply with export restrictions and laws imposed by other countries affecting trade and investments. Although these restrictions and laws have not significantly restricted our operations in the recent past, there is a risk that they could do so in the future.

For example, on March 8, 2016, the U.S. Department of Commerce published a final rule in the Federal Register that amended the Export Administration Regulations by adding ZTE Corporation ("ZTE") and three of its affiliates to the “Entity List” for actions contrary to the national security and foreign policy interests of the U.S. This rule imposed new export licensing requirements on exports, re-exports, and in-country transfers of all U.S.-regulated products, software and technology to the designated ZTE entities, which prevented sales of our U.S. regulated products to ZTE since license requests were subject to a general policy of denial. On March 24, 2016, the U.S. Department of Commerce issued a temporary general license authorizing most exports to ZTE and one of its designated affiliates through June 30, 2016, thereby enabling us to resume sales to ZTE. The temporary license was repeatedly extended until the Bureau of Industry and Security removed ZTE from the Entity List on March 29, 2017, after ZTE entered a guilty plea and agreed to pay a combined penalty of up to $1.19 billion to settle civil and criminal allegations against it. However, part of this plea deal included the imposition of a Denial Order against ZTE and one of its affiliates, which was initially suspended, but later imposed on April 15, 2018, leading to restrictions on export, re-export or transfer of any items subject to U.S. regulations to ZTE and the listed affiliate. This again impacted our ability to sell certain items to ZTE until the Denial Order was terminated on July 13, 2018. ZTE is still subject to the terms of its settlement agreement that includes the potential for re-imposition of the Denial Order.

In addition, on May 16, 2019, the U.S. Department of Commerce amended the Export Administration Regulations by adding Huawei Technologies Co., Ltd. ("Huawei"), which was recently indicted by the U.S. government for violating U.S. sanctions and bank and wire fraud, among other charges, and 68 of its affiliates to the "Entity List" for actions contrary to the national security and foreign policy interests of the U.S. On August 19, 2019, another 46 of Huawei’s non-U.S. affiliates were added to the “Entity List.” As with ZTE, this rule imposes new export licensing requirements on exports, re-exports, and in-country transfers of all U.S.- regulated products, software and technology to the designated Huawei entities. As noted above, license requests are subject to a general policy of denial and, therefore, we will not be able to sell our U.S. regulated products to Huawei. Sales of our products to Huawei accounted for less than 10% of our net sales during the third quarter of fiscal year 2020. Although the U.S. Department of Commerce granted certain temporary exemptions to Huawei on May 20, 2019 in the form of a temporary 90 day general license for specific activities, which was further extended for another 90 days on August 19, 2019 and again on November 18, 2019, these exemptions are limited in scope and generally do not apply to the sale of our U.S. regulated products to Huawei. As of the date of this report, we are unable to predict the duration of the export restrictions imposed on Huawei and the corresponding future effects on our business.

These actions by the U.S. Department of Commerce or future regulatory activity may materially interfere with our ability to make sales to ZTE, Huawei or other foreign customers. ZTE, Huawei or other foreign customers affected by future U.S. government sanctions or threats of sanctions may respond by developing their own solutions to replace our products or by adopting our foreign competitors’ solutions. In addition, our association with customers that are or become subject to U.S.

regulatory scrutiny or export restrictions could subject us to actual or perceived reputational harm among current or prospective investors, suppliers or customers, customers of our customers, other parties doing business with us, or the general public. Any such reputational harm could result in the loss of investors, suppliers or customers, which could harm our business, financial condition, operating results or prospects.

Changes in government trade policies could have an adverse impact on our business or the business of our customers, which may materially adversely affect our business operations, sales or gross margins.

The U.S. government has recently made statements and taken certain actions that have led to, and may lead to, further changes to U.S. and international trade policies, including recently imposed tariffs affecting certain products exported by a number of U.S. trading partners, including China. In response, many U.S. trading partners, including China, have imposed or proposed new or higher tariffs on U.S. products. The tariffs imposed by the U.S. on products imported from China include parts and materials used in semiconductor manufacturing and could have the effect of increasing the cost of materials we use to manufacture certain products, which could result in lower margins. In addition, the geopolitical headwinds driven by export restrictions and tariffs imposed by the U.S. government may weaken demand for our products. For example, during the first nine months of fiscal year 2020, we experienced a decrease of 12.3% in our net sales compared to the same period last year primarily due to a decline in China-based demand for our products.

We cannot predict what further actions may ultimately be taken with respect to tariffs or trade relations between the U.S. and other countries, what products may be subject to such actions, or what actions may be taken by the other countries in retaliation. Accordingly, it is difficult to predict exactly how, and to what extent, such actions may impact our business, or the business of our customers, partners or vendors. Any unfavorable government policies on international trade, such as capital controls or tariffs, may further affect the demand for our products, increase the cost of components, delay production, impact the competitive position of our products or prevent us from being able to sell products in certain countries, and may have a material adverse effect on our business, operating results and financial condition. Any resulting trade wars could have a significant adverse effect on world trade and global economic conditions and could adversely impact our revenues, gross margins and business operations.

Moreover, U.S. government actions targeting exports of certain technologies to China are becoming more pervasive. For example, in 2018, the U.S. adopted new laws designed to address concerns about the export of emerging and foundational technologies to China. In addition, on May 15, 2019, President Trump issued an executive order that invoked national emergency economic powers to implement a framework to regulate the acquisition or transfer of information communications technology in transactions that imposed undue national security risks. The order would restrict the acquisition or use in the U.S. of information and communications technology or services designed, developed, manufactured, or supplied by persons owned by, controlled by, or subject to the jurisdiction of foreign adversaries. These actions could lead to additional restrictions on the export of products that include or enable certain technologies, including products we provide to China-based customers, thereby further impacting our business, operating results and financial condition.

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

Recent Sales of Unregistered Securities

None.

Issuer Purchase of Equity Securities

This table provides information with respect to purchases by us of shares of our common stock during the third quarter of fiscal year 2020.

Fiscal Month/Year	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Approximate Dollar Value of Shares That May Yet Be Purchased Under The Program (1)
August 2019 (07/29/19-08/25/19)	—	$ —	—	$ 160.7 million
September 2019 (08/26/19-09/22/19)	242,495	46.24	242,495	$ 149.5 million
October 2019 (09/23/19-10/27/19)	234,767	48.18	234,767	$ 138.2 million
Total activity	477,262	$ 47.20	477,262	

(1) *The Company maintains an active stock repurchase program that was initially approved by our Board of Directors in March 2008. The stock repurchase program does not have an expiration date and our Board of Directors has authorized expansion of the program over the years. As of October 27, 2019, we have repurchased $310.2 million in shares of our common stock under the program since inception and the current remaining authorization under our stock repurchase program is $138.2 million. Under our stock repurchase program, we may repurchase our common stock at any time or from time to time, without prior notice, subject to*

market conditions and other considerations. Our repurchases may be made through Rule 10b5-1 and/or Rule10b-18 or other trading plans, open market purchases, privately negotiated transactions, block purchases or other transactions. We intend to fund repurchases under the program from cash on hand. We have no obligation to repurchase any shares under the stock repurchase program and may suspend or discontinue it at any time.

ITEM 3. Defaults Upon Senior Securities

None.

ITEM 4. Mine Safety Disclosures

Not applicable.

ITEM 5. Other Information

None.

ITEM 6. Exhibits

Documents that are not physically filed with this report are incorporated herein by reference to the location indicated.

Exhibit No.	Description	Location
3.1	Restated Certificate of Incorporation of Semtech Corporation	Exhibit 3.1 to our Quarterly Report on Form 10-Q for the quarterly period ended October 26, 2003
3.2	Bylaws of Semtech Corporation	Exhibit 3.2 to our Annual Report on Form 10-K for the year ended January 27, 2008
10.1	Amended and Restated Credit Agreement dated November 7, 2019 entered into among Semtech Corporation, the guarantors party thereto, the lenders party thereto and HSBC Bank USA, National Association, as administrative agent and as swing line lender and L/C issuer.	Exhibit 10.1 to our Current Report on Form 8-K filed on November 12, 2019
10.2	Semtech Corporation Executive Change in Control Retention Plan	Filed herewith
10.3	Form of Participation Agreement under the Semtech Corporation Executive Change in Control Retention Plan	Filed herewith
10.4	Amended and Restated Employment Offer Letter, dated as of November 20, 2019, by and between the Company and Mohan Maheswaran	Exhibit 10.1 to our Current Report on Form 8-K filed on November 22, 2019
31.1	Certification of the Chief Executive Officer Pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended	Filed herewith
31.2	Certification of the Chief Financial Officer Pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended	Filed herewith
32.1	Certification of the Chief Executive Officer Pursuant to 18 U.S.C. §1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Exhibit 32.1 is being furnished and shall not be deemed "filed")	Furnished herewith
32.2	Certification of the Chief Financial Officer Pursuant 18 U.S.C. §1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Exhibit 32.2 is being furnished and shall not be deemed "filed")	Furnished herewith

Exhibit No.	Description	Location
101	The following financial statements from the Company’s Quarterly Report on Form 10-Q for the quarter ended October 27, 2019, formatted in Inline XBRL: (i) Consolidated Statements of Income, (ii) Consolidated Statements of Comprehensive Income, (iii) Consolidated Balance Sheets (iv) Consolidated Statements of Stockholders’ Equity, (v) Consolidated Statements of Cash Flow and (v) Notes to Consolidated Financial Statements, tagged as blocks of text and including detailed tags.	
104	The cover page from the Company’s Quarterly Report on Form 10-Q for the quarter ended October 27, 2019, formatted in Inline XBRL (included as Exhibit 101).	

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.

	SEMTECH CORPORATION
	Registrant
Date: December 4, 2019	/s/ Mohan R. Maheswaran
	Mohan R. Maheswaran
	President and Chief Executive Officer
Date: December 4, 2019	/s/ Emeka N. Chukwu
	Emeka N. Chukwu
	Executive Vice President and
	Chief Financial Officer

Exhibit 10.2

SEMTECH CORPORATION
EXECUTIVE CHANGE IN CONTROL RETENTION PLAN

Semtech Corporation ("**Semtech**") has established this Semtech Corporation Executive Change in Control Retention Plan (the "**Plan**") for certain of its executive officers and key employees (collectively, the "**Executives**") to provide incentives for Plan Participants to exert maximum efforts for Semtech's success, and to retain those Plan Participants, even in the face of a potential Change in Control (as defined in Section 1). The Plan provides for cash payments, certain accelerated vesting of equity rights, and other benefits. The Plan took effect on August 21, 2019 (the "**Effective Date**") and will remain in effect until terminated in accordance with Section 11. Effective as of the Effective Date, the Plan supersedes and replaces in its entirety the prior version of the Semtech Corporation Executive Change in Control Retention Plan, which originally took effect on December 19, 2014. This document constitutes both the formal plan document and the summary plan description of the Plan. This Plan will control in case of conflict with any other document, unless the Plan states otherwise. The Plan is an employee welfare benefit plan within the meaning of Section 3(1) of the Employee Retirement Income Security Act of 1974, as amended ("**ERISA**"). Participants' ERISA rights are described at the end of the document. Except as defined elsewhere in this Plan, capitalized terms used herein shall have the meanings set forth in Section 1.

1. **<u>DEFINITIONS</u>.** For purposes of this Plan only, capitalized terms used herein shall have the following meanings (if not otherwise defined herein):

(a) "**Administrative Committee**" means the Compensation Committee of the Board ("**Compensation Committee**") as constituted from time to time or, in the absence of such a committee, the Board.

(b) "**Affiliate**" means any parent corporation of Semtech or any subsidiary corporation of Semtech or any such parent, whether now or hereafter existing, as those terms are defined in Section 424(e) and (f) respectively, of the Code.

(c) "**Base Salary**" means the highest annual rate of base salary paid to a Participant by Semtech or an Affiliate during the six months prior to a Change in Control (calculated before any deductions or deferrals).

(d) "**Board**" means Semtech's Board of Directors or any subcommittee thereof.

(e) "**Cause**" means that a Participant (i) has engaged in an act of personal dishonesty in connection with the Participant's responsibilities as a Semtech or Affiliate employee which is intended to result in a substantial personal benefit to the Participant, the Participant's family, or any entity in which any of them have a substantial beneficial interest; (ii) was convicted of or entered a plea of guilty or *nolo contendere* to a crime that constitutes a felony (other than traffic related offenses not involving serious bodily injury); (iii) has committed an act or engaged in an omission which constitutes willful misconduct or gross negligence and is materially injurious, or reasonably expected to result in material injury, to Semtech or an Affiliate; (iv) willfully failed to follow the lawful directives of the Board, the Chief Executive Officer of Semtech, or the Participant's immediate direct supervisor that are consistent with such Participant's position or duties; or (v) materially breached any Central Agreement or similar written policy of Semtech or any of its Affiliates, which, for any breach that can be cured going forward, is not cured by the Participant within 15 calendar days after the Participant's receipt of written notice from Semtech specifying the nature of the Participant's purported material breach. For purposes of this definition of "Cause," no act or failure to act, on a Participant's part shall be considered "willful" unless done, or omitted to be done, by the Participant not in good faith and without reasonable belief that his action or omission was in the best interest of Semtech.

(f) "**Central Agreements**" means the Semtech Core Values and Code of Conduct, the Semtech Policy Regarding Confidential Information and Insider Trading for All Employees, the Semtech Invention Agreement & Secrecy Agreement, the Semtech Employee Confidentiality Agreement and Proprietary Rights Assignment, and any other written agreement between a Participant and Semtech (regardless of when such agreements become effective).

(g) "**Change in Control**" means any of the following:

(i) The acquisition by any individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended from time to time (the "**Exchange Act**") (a "**Person**")), of beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of 30% or more of either (1) the then-outstanding shares of common stock of Semtech (the "**Outstanding Company Common Stock**") or (2) the combined voting power of the then-outstanding voting securities of Semtech entitled to vote generally in the election of directors (the "**Outstanding Company Voting Securities**"); provided, however, that, for purposes of this clause (i), the following acquisitions shall not constitute a Change in Control; (A) any acquisition directly from Semtech or an Affiliate, (B) any acquisition by Semtech or an Affiliate, (C) any acquisition by any employee benefit plan (or related trust) sponsored or maintained by Semtech or any Affiliate of Semtech or a successor, and (D) any acquisition by any entity pursuant to a transaction that complies with clauses (iii)(1), (2) and (3) below; further provided that if such an acquisition of 30% or more of the Outstanding Company Common Stock and/or Outstanding Company Voting Securities was specifically approved in advance by the Board, the reference to "30%" in this clause (i) shall instead be "50%";

(ii) A change in the Board or its members such that individuals who, as of the later of the Effective Date or the date that is two years prior to such change (the later of such two dates is referred to as the "**Measurement Date**"), constitute the Board (the "**Incumbent Board**") cease for any reason to constitute at least a majority of the Board; provided, however, that any individual becoming a director subsequent to the Measurement Date whose election, or nomination for election by Semtech's stockholders, was approved by a vote of at least two-thirds of the directors then comprising the Incumbent Board (including for these purposes, the new members whose election or nomination was so approved, without counting the member and his or her predecessor twice) shall be considered as though such individual were a member of the Incumbent Board, but excluding, for this purpose, any such individual whose initial assumption of office occurs as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board;

(iii) Consummation of a reorganization, merger, statutory share exchange or consolidation or similar corporate transaction involving Semtech or any of its Subsidiaries, a sale or other disposition of all or substantially all of the assets of Semtech, or the acquisition of assets or stock of another entity by Semtech or any of its Subsidiaries (each, a "**Business Combination**"), in each case unless, following such Business Combination, (1) all or substantially all of the individuals and entities that were the beneficial owners of the Outstanding Company Common Stock and the Outstanding Company Voting Securities immediately prior to such Business Combination beneficially own, directly or indirectly, more than 50% of the then-outstanding shares of common stock and the combined voting power of the then-outstanding voting securities entitled to vote generally in the election of directors, as the case may be, of the entity resulting from such Business Combination (including, without limitation, an entity that, as a result of such transaction, owns Semtech or all or substantially all of Semtech's assets directly or through one or more subsidiaries (a "**Parent**")) in substantially the same proportions as their ownership immediately prior to such Business Combination of the Outstanding Company Common Stock and the Outstanding Company Voting Securities, as the case may be, (2) no Person (excluding any entity resulting from such Business Combination or a Parent or any employee benefit plan (or related trust) of Semtech or such entity resulting from such Business Combination or Parent) beneficially owns, directly or indirectly, 30% or more of, respectively, the then-outstanding shares of common stock of the entity resulting from such Business Combination or the combined voting power of the then-outstanding voting securities of such entity, except to the extent that the ownership in excess of 30% existed prior to the Business Combination, and (3) at least a majority of the members of the board of directors or trustees of the entity resulting from such Business Combination or a Parent were members of the Incumbent Board (determined pursuant to clause (ii) above using the date that is the later of the Effective Date or the date that is two years prior to the Business Combination as the Measurement Date) at the time of the execution of the initial agreement or of the action of the Board providing for such Business Combination; or

(iv) Approval by Semtech's stockholders of a complete liquidation or dissolution of Semtech other than in the context of a transaction that does not constitute a Change in Control under clause (iii) above;

provided, however, that a transaction shall not constitute a Change in Control unless it is a "change in the ownership or effective control" of Semtech, or a change "in the ownership of a substantial portion of the assets" of Semtech within the meaning of Code Section 409A. Notwithstanding the foregoing, in no event shall a transaction or other event that occurred prior to the Effective Date constitute a Change in Control.

(h) "**Change in Control Window**" means the period (i) beginning on the earlier of (a) 90 days prior to a Change in Control transaction or (b) the execution of a definitive agreement to effect a transaction that, if consummated in accordance with the proposed terms, would constitute a Change in Control transaction, provided that the transaction with the party to the definitive agreement is actually consummated within one year following the execution of such definitive agreement and such transaction actually constitutes a Change in Control, and (ii) ending on the second anniversary of such Change in Control.

(i) "**COBRA**" means the Consolidated Omnibus Budget Reconciliation Act.

(j) "**Code**" means the United States Internal Revenue Code of 1986, as amended.

(k) "**Code Section 409A**" means Section 409A of the Code (including the Treasury regulations and other published guidance relating thereto).

(l) "**Common Stock**" means the common stock of Semtech.

(m) "**Competitor**" means Inphi Corporation, Integrated Device Technology, Inc., MACOM Technology Solutions Holdings, Inc., MaxLinear, Inc., Monolithic Power Systems, Inc., ON Semiconductor Corporation, Silicon Laboratories Inc. and Texas Instruments, Inc.; provided, in each case, that if such company ceases to have a class of its common equity securities traded on a national securities exchange it shall no longer constitute a Competitor for purposes of the Plan.

(n) "**Disability**" means a termination of the Participant's employment due to the Participant's disability and the Participant is entitled to long-term disability benefits under a long-term disability plan sponsored or maintained by Semtech or one of its Affiliates.

(o) "**Good Reason**" means the occurrence without the express, written consent of a Participant of any one of the following acts by Semtech or an Affiliate:

(i) a material reduction in the Participant's base salary or target bonus as in effect immediately prior to such reduction;

(ii) a significant reduction of the Participant's duties, title, position or responsibilities relative to the Participant's duties, title, position or responsibilities in effect immediately prior to such reduction; or

(iii) the Participant's relocation to a facility or a location more than thirty-five (35) miles from Semtech's current headquarters location (or, as to a Participant not employed at Semtech's headquarters location, to a facility or location that is more than thirty-five (35) miles from the Participant's principal workplace for Semtech or an Affiliate immediately prior to such relocation) and that results in a longer commute for the Participant;

<u>provided</u>, <u>however</u>, that any such condition or conditions, as applicable, shall not constitute Good Reason unless both (x) the Participant provides written notice to Semtech of the condition claimed to constitute Good Reason within 60 days of the initial existence of such condition(s), and (y) Semtech or an Affiliate (as applicable) fails to remedy such condition(s) within 30 days of receiving such written notice thereof; and provided, further, that in all events the termination of the Participant's employment with Semtech or an Affiliate (as applicable) shall not constitute a termination for Good Reason unless such termination occurs not more than 120 days following the initial existence of the condition claimed to constitute Good Reason.

(p) "**Letter Agreement**" means a letter signed by a duly authorized Semtech officer in the form approved by the Administrative Committee confirming an Executive's eligibility for the Plan.

(q) "**Participant**" means an eligible Executive participating in the Plan.

(r) "**Qualifying Termination**" has the meaning ascribed to such term in Section 4(a).

(s) "**Required Accounting Restatement**" shall mean an accounting restatement that is required due to Semtech's material noncompliance with any financial reporting requirement under applicable securities laws.

(t) "**Separation from Service**" occurs when the Participant dies, retires, or otherwise has a termination of employment with Semtech that constitutes a "separation from service" within the meaning of Treasury Regulation Section 1.409A-1(h)(1), without regard to the optional alternative definitions available thereunder.

(u) "**Severance Date**" means the date on which the Participant's employment with Semtech and its Affiliates terminates for any reason.

(v) "**Stock Awards**" means any stock option, restricted stock unit, restricted stock, or other equity-based compensation with respect to the Common Stock (whether settled in Common Stock or cash) granted to a Participant prior to a Change in Control.

(w) "**Subsidiary**" means any corporation or other entity a majority of whose outstanding voting stock or voting power is beneficially owned directly or indirectly by Semtech.

2. **PLAN ELIGIBILITY.** An Executive is eligible for participation in this Plan only if (a) the Administrative Committee has approved in writing such Executive's participation in the Plan and (b) Semtech has provided such Executive with a Letter Agreement. If such Executive executes the Letter Agreement and returns it to Semtech within 30 days (or such shorter period as determined by the Administrative Committee) after receiving it, such Executive will become a Participant on (i) the date Semtech receives the properly executed Letter Agreement or (ii) if later, the date the Letter Agreement states such Executive will become a Participant.

3. **LIMITATION ON BENEFITS.** Notwithstanding anything contained in this Plan to the contrary, to the extent that any payments and benefits provided under this Plan to or for the benefit of a Participant, together with any payments and benefits provided to or for the benefit of the Participant under any other plan or agreement of Semtech or any of its Affiliates (such payments or benefits are collectively referred to as the "**Benefits**"), would be subject to the excise tax (the "**Excise Tax**") imposed under Section 4999 of the Code, the Participant's Benefits shall be reduced (but not below zero) if and to the extent that a reduction in the Benefits would result in the Participant retaining a larger amount, on an after-tax basis (taking into account federal, state and local income taxes and the Excise Tax), than if the Participant received all of the Benefits (such reduced amount is referred to hereinafter as the "**Limited Benefit Amount**"). If a reduction in a Participant's Benefits is required pursuant to the preceding sentence, in order to effectuate the Limited Benefit Amount Semtech shall reduce or eliminate (if and to the extent necessary) the Participant's Benefits by first reducing or eliminating amounts which are payable from any cash severance, then from any payment or benefit in respect of any equity award that is treated as contingent on the change in ownership or control but is not covered by Treas. Reg. Section 1.280G-1 Q/A 24(b) or (c), then from any payment or benefit in respect of an equity award that is covered by Treas. Reg. Section 1.280G-1 Q/A 24(c), in each case in reverse order beginning with payments or benefits which are to be paid the farthest in time from the Determination (as hereinafter defined). A determination as to whether a reduction in a Participant's Benefits to the Limited Benefit Amount pursuant to this Section 3, and the amount of such Limited Benefit Amount, shall be made by Semtech's independent public accountants or another certified public accounting firm or executive compensation consulting firm of national reputation designated by Semtech (the "**Firm**") at Semtech's expense. The Firm shall provide its determination (the "**Determination**"), together with detailed supporting calculations and documentation to Semtech and the Participant not later than ten (10) business days after the date of termination of the Participant's employment, if applicable, or such other time as reasonably requested by Semtech or by a Participant.

4. **SEVERANCE.**

(a) Unless a Participant's Letter Agreement provides otherwise, if Semtech or an Affiliate terminates a Participant's employment without Cause during a Change in Control Window or if the Participant terminates his or her employment with Semtech or an Affiliate for Good Reason during a Change in Control Window, and in each case other than due to the Participant's death or Disability, (such a termination of the Participant's employment is referred to herein as a "**Qualifying Termination**") then, subject to the terms and conditions of this Section 4, the Participant will be entitled to the following benefits:

(i) Payment in cash of a bonus for the Semtech fiscal year in which the Severance Date occurs equal to the Participant's target bonus for the fiscal year (as determined by the Compensation Committee), pro-rated from the beginning of the fiscal year to the Severance Date;

(ii) Payment in cash of an amount equal to one times the greater of the Participant's target bonus (as determined by the Compensation Committee for the relevant fiscal years) for (A) the Semtech fiscal year in which the Severance Date occurred or (B) the fiscal year prior to the fiscal year in which the Severance Date occurred;

(iii) Payment in cash of an amount equal to one times the Participant's Base Salary, such amount to be paid, subject to Section 12(b), in a single lump sum together with the amounts referred to in clauses (a)(i) and (a)(ii) above, within 10 days following the 60-day anniversary of the later of (1) the Participant's Separation from Service and (2) in the case of a Qualifying Termination that occurs as a result of the Participant's Separation from Service prior to a Change in Control, the date of the corresponding Change in Control;

(iv) The Participant's unvested account balance (if any) under the Semtech Executive Compensation Plan will become fully vested;

(v) Unless otherwise expressly provided for in an applicable award agreement or the Participant's Letter Agreement, to the extent any Stock Award granted to the Participant by Semtech is outstanding and unvested as of the Severance Date and is subject only to time-based vesting requirements as of the Severance Date (including any such award that was originally subject to performance-vesting conditions and as to which the applicable performance period has ended as of the Severance Date, and any such award that was originally subject to performance-vesting conditions but as to which the award is subject only to time-based vesting conditions following a Change in Control), such award shall automatically become fully vested and, in the case of stock options and similar awards, exercisable as of the Severance Date. For purposes of clarity, if the Participant's employment is terminated by Semtech or an Affiliate without Cause or by the Participant for Good Reason, and any Stock Award granted to the Participant by Semtech, to the extent such award is outstanding and unvested on the Severance Date, otherwise purports to terminate on the Severance Date, such termination shall not be effective (subject, in all events, to the original maximum term of the award) until the later of (a) the end of the 90-day period following the Severance Date and (b) if a definitive agreement with respect to a Change in Control transaction was entered into prior to the Severance Date, one year following the execution of such agreement and, if such a termination of the Participant's employment becomes a Qualifying Termination because a Change in Control occurs within such period of time, such termination shall (subject to the original maximum term of the award) not be effective and such award shall be subject to the accelerated vesting rules set forth above in this Section 4(a)(v), and, in the case of stock options or similar awards, the Participant shall be given a reasonable opportunity to exercise such accelerated portion of the option or other award before it terminates; and

(vi) Subject to Section 12(c), Semtech will pay or reimburse the Participant for his or her premiums charged to continue benefit coverage pursuant to COBRA, at the same or reasonably equivalent level of coverage for the Participant (and, if applicable, the Participant's eligible dependents) as in effect immediately prior to the Severance Date, to the extent that the Participant is entitled to and actually elects such continued coverage pursuant to COBRA; provided that Semtech's obligation to make any payment or reimbursement pursuant to this clause (vi) shall cease upon the first to occur of (a) the first anniversary of the Severance Date; (b) the date the Participant becomes eligible for coverage under the health plan of a future employer; or (c) the date Semtech is under no obligation to offer COBRA continuation coverage to the Participant.

(b) In order to receive any benefits or payments under Section 4(a), the Participant acknowledges and agrees that such benefits and payments will be contingent on the Participant's execution and delivery to Semtech of a release agreement, substantially in the form attached hereto as Appendix 1 (and revised, as determined to be appropriate by Semtech, to reflect changes in the law to ensure the enforceability of such agreement), not later than 21 days (or such longer period of up to 45 days as may be required under applicable law) following the Severance Date (or, if later, the date of the relevant Change in Control), and such release agreement shall not have been revoked by the Participant pursuant to any revocation rights afforded by applicable law.

(c) In connection with a termination of a Participant's employment with Semtech and its Affiliates, Semtech (or the Affiliate that last employed the Participant, as the case may be), will also pay the Participant the Participant's Accrued Obligations. As used herein, "**Accrued Obligations**" means: (i) any base salary that had accrued but had not been paid (including accrued and unpaid vacation time, sick time and paid time off, in each case to the extent applicable) on or before the Participant's Severance Date, and (ii) any reimbursement due to the Participant for business expenses incurred by the Participant on or before the Participant's Severance Date in accordance with the expense reimbursement policies of Semtech (or the applicable Affiliate) in effect at the applicable time. In addition, nothing in this Plan shall affect: (i) a Participant's receipt of benefits otherwise due terminated employees under group insurance coverage consistent with the terms of the applicable Semtech (or Affiliate) welfare benefit plan; (ii) a Participant's rights under COBRA to continue health coverage; or (iii) a Participant's right to received vested and accrued benefits otherwise due in accordance with the terms of an applicable 401(k), deferred compensation or other retirement plan of Semtech or an Affiliate.

(d) There is no duty of any Participant to mitigate damages under this Plan. All amounts paid or payable to a Participant pursuant to this Section 4 shall be paid without regard to whether the Participant has taken or takes actions to mitigate damages.

5. **ADJUSTMENTS UPON CHANGES IN COMMON STOCK; CHANGE IN CONTROL.**

(a) Adjustments. All references to the Stock Awards referenced in this Plan shall include and shall be appropriately adjusted by Semtech to reflect any stock split, stock dividend, stock combination or other change in the Common Stock which may be made by Semtech after the date this Plan is adopted and pursuant to the applicable plan document and award agreements evidencing such Stock Awards.

(b) Change in Control. Unless otherwise expressly provided for in an applicable award agreement or the Participant's Letter Agreement, to the extent any Stock Award that is subject to performance-vesting conditions is outstanding and unvested as of the date of a Change in Control and such Change in Control occurs during one or more performance periods of any such award, the number of shares or units subject to the award will be adjusted to equal the target number of shares or units subject to the award that relate to the applicable open (or not yet then commenced, as the case may be) performance period. Such adjusted number of shares or units subject to the award shall remain subject to any time-based vesting requirements pursuant to the original terms and conditions of the award (subject to any accelerated vesting pursuant to Section 4(a)).

6. **FORFEITURE OF PLAN BENEFITS.**

(a) Competition. In the event that a Participant directly or indirectly, whether as an employee, independent contractor, or consultant, or otherwise (whether for pay or otherwise) provides any services to a Competitor (without first obtaining written approval from the Administrative Committee) prior to the one-year anniversary of such Participant's termination of employment, the Participant shall, to the extent consistent with applicable law, irrevocably forfeit all unpaid Plan benefits as of the date that such Participant first provided services to a Competitor. To the extent that any Participant received any Plan benefits prior to engaging in such activity (without first obtaining written approval from the Administrative Committee), the Participant shall return to Semtech all such Plan benefits within 15 days of receiving written demand therefor. Notwithstanding the foregoing, this Section 6 shall not apply to a Participant to the extent that his or her Letter Agreement expressly provides that this Section 6 does not apply to such Participant.

(b) Accounting Restatement. In the event that Semtech prepares a Required Accounting Restatement, each Participant or former Participant shall pay to Semtech on demand any amounts required to be returned to Semtech by Section 954 of the Dodd Frank Wall Street Reform and Consumer Protection Act of 2010 or the rules and/or the applicable listing standards promulgated thereunder or in connection therewith.

7. **NOTICES.** Any notices provided for in this Plan shall be given in writing and shall be deemed effectively given upon receipt or, in the case of notices delivered by Semtech to a Participant, five days after deposit in the United States mail, postage prepaid, addressed to such Participant at the address specified in Semtech's corporate records or at such other address as such Participant designates by written notice to Semtech.

8. **CLAIMS PROCEDURES.**

(a) Claims Normally Not Required.

Normally, a Participant does not need to present a formal claim to receive benefits payable under this Plan.

(b) Disputes.

If any person (claimant) believes that benefits are being denied improperly, that the Plan is not being operated properly, that fiduciaries of the Plan have breached their duties, or that the claimant's legal rights are being violated with respect to the Plan, the claimant must file a formal claim with the Administrative Committee. This requirement applies to all claims that any claimant has with respect to the Plan, including claims against fiduciaries and former fiduciaries, except to the extent the Administrative Committee determines, in its sole discretion, that it does not have the power to grant all relief reasonably being sought by the claimant.

(c) Time for Filing Claims.

A formal claim must be filed no later than 90 days after any payment pursuant to Section 4(a) should have been made, unless the Administrative Committee in writing consents otherwise. The Administrative Committee will provide a claimant, on request, with a copy of the claims procedures established under Section 8(d).

(d) Procedures.

The Administrative Committee will adopt procedures for considering claims, which it may amend from time to time, as it sees fit. A claimant must file a claim for benefits on a form prescribed by the Administrative Committee. If the claimant's claim for a benefit is wholly or partially denied, the Administrative Committee will furnish the claimant with a written notice of the denial. This written notice must be provided to the claimant within a reasonable period of time (generally within 90 days, unless special circumstances require an extension of time for processing the claim, in which case a period not to exceed 180 days) after the receipt of the claimant's claim by the Administrative Committee. (If such an extension of time is required, written notice of the extension will be furnished to the claimant prior to the termination of the initial 90-day period, and will indicate the special circumstances requiring the extension.) Written notice of denial of the claimant's claim must contain the following information:

(i) the specific reason or reasons for the denial;

(ii) a specific reference to those provisions of the Plan on which such denial is based;

(iii) a description of any additional information or material necessary to perfect the claimant's claim, and an explanation of why such material or information is necessary; and

(iv) a copy of the appeals procedures under the Plan and the time limits applicable to such procedures, including a statement of the claimant's right to bring a civil action under Section 502(a) of ERISA following an adverse determination of the claimant's claim.

If the claimant's claim has been denied, and the claimant wishes to submit his or her request for a review of his or her claim, the claimant must follow the following Claims Review Procedure:

(i) Upon the denial of his or her claim for benefits, the claimant may file his or her request for review of his or her claim, in writing, with the Administrative Committee;

(ii) The claimant must file the claim for review not later than 60 days after he or she has received written notification of the denial of his or her claim for benefits;

(iii) The claimant has the right to review and obtain copies of all relevant documents relating to the denial of his or her claim and to submit any issues and comments, in writing, to the Administrative Committee;

(iv) If the claimant's claim is denied, the Administrative Committee must provide the claimant with written notice of this denial within 60 days after the Administrative Committee's receipt of the claimant's written claim for review. There may be times when this 60-day period may be extended. This extension may only be made, however, where there are special circumstances which are communicated to the claimant in writing within the 60-day period. If there is an extension, a decision will be made as soon as possible, but not later than 120 days after receipt by the Administrative Committee of the claimant's claim for review; and

(v) The Administrative Committee's decision on the claimant's claim for review will be communicated to the claimant in writing, and if the claimant's claim for review is denied in whole or part, the decision will include:

(A) the specific reason or reasons for the denial;

(B) specific references to the pertinent provisions of the Plan on which the decision was based;

(C) a statement that the claimant may receive, upon request and free of charge, reasonable access to and copies of, all documents, records and other information relevant to the claimant's claim for benefits; and

(D) a statement of the claimant's right to bring a civil action under Section 502(a) of ERISA.

(e) Following a Change in Control.

Notwithstanding the preceding provisions of this Section 8, upon and after the occurrence of a Change in Control, if any person (claimant) believes that benefits are being denied improperly, that the Plan is not being operated properly, that fiduciaries of the Plan have breached their duties, or that the claimant's legal rights are being violated with respect to the Plan, the claimant may make a claim to an arbitrator or court of competent jurisdiction without filing a claim pursuant to the claims procedures set forth above in this Section 8.

9. **PLAN ADMINISTRATION.**

(a) Discretion.

The Administrative Committee is responsible for the general administration and management of the Plan and shall have all powers and duties necessary to fulfill its responsibilities, including, but not limited to, the discretion to interpret and apply the Plan and to determine all questions relating to eligibility for benefits. The Administrative Committee and all Plan fiduciaries shall have the discretion to interpret or construe ambiguous, unclear, or implied (but omitted) terms in any fashion they deem to be appropriate in their sole and absolute discretion, and to make any findings of fact needed in the administration of the Plan. Prior to a Change in Control, the validity of any such interpretation, construction, decision, or finding of fact shall not be given de novo review if challenged in court, by arbitration, or in any other forum, and shall be upheld unless clearly arbitrary or capricious.

Following a Change in Control, however, any claim by a claimant that benefits are being denied improperly, that the Plan is not being operated properly, that fiduciaries of the Plan have breached their duties, or that the claimant's legal rights are being violated with respect to the Plan shall be given de novo review by the arbitrator or court of competent jurisdiction, as the case may be.

(b) Finality of Determinations.

Unless arbitrary and capricious, and subject to the second paragraph of Section 9(a), all actions taken and all determinations by the Administrative Committee or by Plan fiduciaries will be final and binding on all persons claiming any interest in or under the Plan. To the extent the Administrative Committee or any Plan fiduciary has been granted discretionary authority under the Plan, the Administrative Committee's or Plan fiduciary's prior exercise of such authority shall not obligate it to exercise its authority in a like fashion thereafter.

(c) Drafting Errors.

If, due to errors in drafting, any Plan provision does not accurately reflect its intended meaning, as demonstrated by consistent interpretations or other evidence of intent (by Semtech or the Administrative Committee, as the case may be), or as determined by the Administrative Committee in its sole and absolute discretion, the provision shall be considered ambiguous and shall be interpreted by the Administrative Committee and all Plan fiduciaries in a fashion consistent with its intent, as determined in the sole and absolute discretion of the Administrative Committee (but with regard to the intent of Semtech as settlor).

(d) Scope.

This Section may not be invoked by any person to require the Plan to be interpreted in a manner inconsistent with its interpretation by the Administrative Committee or other Plan fiduciaries.

(e) Payment by Subsidiary.

In the case of a Participant employed by a Subsidiary (or whose last employment with Semtech or any of its Affiliates was with a Subsidiary, as the case may be) and who is entitled to the benefits set forth in Section 44(a), Semtech and such Subsidiary may arrange for such Subsidiary to pay such benefits (or any portion thereof). In such case, any payment of such benefits by a Subsidiary shall be in full satisfaction of Semtech's obligation to pay the corresponding benefits.

10. **COSTS, INDEMNIFICATION, AND REIMBURSEMENT FOR LITIGATION EXPENSES.**

(a) All costs of administering the Plan and providing Plan benefits will be paid by Semtech.

(b) To the extent permitted by applicable law and in addition to any other indemnities or insurance provided by Semtech, Semtech shall indemnify and hold harmless its (and its Affiliates') current and former officers, directors, and employees against all expenses, liabilities, and claims (including legal fees incurred to defend against such liabilities and claims) arising out of their discharge in good faith of their administrative and fiduciary responsibilities with respect to the Plan. Expenses and liabilities arising out of willful misconduct will not be covered under this indemnity.

11. **PLAN AMENDMENT AND TERMINATION; LIMITATION ON EMPLOYEE RIGHTS.**

(a) Subject to Section 11(b), Semtech, acting through the Board or Compensation Committee, has the right in its sole and absolute discretion (and without requiring the consent of any

Participant or other person) to amend or terminate the Plan prospectively. The Plan shall automatically terminate on the fifth anniversary of the Effective Date, unless extended by the Board or Compensation Committee; provided, however, that (i) if a definitive agreement to effect a transaction that, if consummated in accordance with the proposed terms, would constitute a Change in Control transaction is entered into before the fifth anniversary of the Effective Date, the Plan shall automatically be extended (if and to the extent necessary) such that it shall not terminate earlier than the first anniversary of the date that such definitive agreement is entered into, and (ii) if a Change in Control occurs during the term of the Plan (as it may be extended pursuant to the foregoing clause (i)), the Plan shall automatically be extended (if and to the extent necessary) such that it shall not terminate earlier than the second anniversary of such Change in Control. In addition, no amendment or termination of the Plan shall affect a Participant's right to benefits under the Plan as to a termination of the Participant's employment that occurred on or prior to the effective date of such Plan amendment or termination.

(b) Notwithstanding the first sentence of Section 11(a), any amendment or termination of the Plan that occurs within a Change in Control Window (including on account of the fifth anniversary of the Effective Date), shall not apply to any Participant until the later of (i) the expiration of such Change in Control Window or (ii) three months after the Administrative Committee provides the Participant with written notice of such amendment or termination; provided, however, an amendment or termination of the Plan that occurs within a Change in Control Window may take immediate effect with respect to each Participant who (a) consents individually and in writing to the amendment or termination or (b) is not adversely affected by such amendment or termination.

(c) This Plan shall not give any employee the right to be retained in the service of Semtech or an Affiliate, and shall not interfere with or restrict the right of Semtech or an Affiliate to discharge or retire an employee for any lawful reason.

12. **COMPLIANCE WITH CODE SECTION 409A.**

(a) To the extent applicable, it is intended that any amounts payable under this Plan shall either be exempt from or comply with the provisions of Code Section 409A so as not to subject the Participant to payment of any additional tax, penalty or interest imposed under Code Section 409A. The Plan will be administered and interpreted in a manner consistent with this intent.

(b) Notwithstanding any provision of the Plan to the contrary, if the Participant is a "specified employee" within the meaning of Treasury Regulation Section 1.409A-1(i) as of the date of the Participant's Separation from Service, the Participant will not be entitled to any payment or benefit pursuant to the Plan until the earlier of (i) the date which is six months after the Participant's Separation from Service for any reason other than death, or (ii) the date of the Participant's death. Any amounts otherwise payable to the Participant upon or in the six-month period following the Participant's Separation from Service that are not so paid by reason of this Section 12(b) shall be paid (without interest) as soon as practicable (and in all events within 30 days) after the date that is six months after the Participant's Separation from Service (or, if earlier, as soon as practicable, and in all events within 30 days, after the date of the Participant's death). The provisions of this Section 12(b) shall only apply if, and to the extent, required to avoid the imputation of any tax, penalty or interest pursuant to Code Section 409A.

(c) To the extent that any benefits pursuant to Section 4(a)(vi) are taxable to the Participant, any reimbursement payment due to the Participant pursuant to any such provision shall be paid to the Participant on or before the last day of the Participant's taxable year following the taxable year in which the related expense was incurred. The benefits and reimbursements pursuant to such provisions are not subject to liquidation or exchange for another benefit and the amount of such benefits and reimbursements that the Participant receives in one taxable year shall not affect the amount of such benefits or reimbursements that the Participant receives in any other taxable year.

(d) In addition, each amount to be paid or benefit to be provided to a Participant pursuant to the Plan shall be construed as a separate identified payment for purposes of Code Section 409A.

(e) If and to the extent required to avoid the imputation of any tax, penalty or interest pursuant to Code Section 409A, any benefits or cash payments pursuant to Section 4(a)(vi) shall not be contingent on the Participant's execution of the release contemplated by Section 4(b), but the Participant's rights to receive such benefits or cash payments shall cease if the Participant does not timely execute and deliver such release or if the Participant revokes such release.

13. **GOVERNING LAW; Compliance with law.**

(a) This Plan is a welfare plan subject to ERISA, and it shall be interpreted, administered, and enforced in accordance with that law. To the extent that state law is applicable, this Plan shall be governed by, and construed in accordance with, the laws of the State of California, regardless of the law that might be applied under applicable principles of conflicts of law.

(b) Although this Plan is a welfare plan, if it is ever determined to be a pension plan within the meaning of ERISA, it shall be an unfunded arrangement maintained primarily for the purpose of providing deferred compensation to a select group of management or highly compensated executive officers, which is exempt from Parts 2, 3, and 4 of Title I of ERISA (i.e., a "top hat plan").

(c) This Plan, Letter Agreements under this Plan, the participation by any individual in this Plan, and the payment of money and the provision of any benefit under this Plan are subject to compliance with all applicable laws, rules and regulations.

14. **MISCELLANEOUS.**

(a) Any failure by Semtech or a Participant to enforce any provision or provisions of this Plan shall not in any way be construed as a waiver of any such provision or provisions, nor prevent either Semtech or a Participant from thereafter enforcing each and every other provision of this Plan. The rights granted Semtech or a Participant herein are cumulative and shall not constitute a waiver of either Semtech's or a Participant's right to assert all other legal remedies available to it under the circumstances.

(b) Each Participant agrees upon request to execute any further documents or instruments necessary or desirable to carry out the purposes or intent of this Plan.

(c) If any provision of this Plan shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired.

(d) Notwithstanding anything else herein to the contrary, Semtech may withhold (or cause there to be withheld, as the case may be) from any amounts otherwise due or payable under or pursuant to the Plan such federal, state and local income, employment, or other taxes as may be required to be withheld pursuant to any applicable law or regulation. Except for such withholding rights, the Participant is solely responsible for any and all tax liability that may arise with respect to the compensation provided under or pursuant to the Plan.

(e) Where the context so indicates, the singular will include the plural and vice versa. Titles are provided herein for convenience only and are not to serve as a basis for interpretation or construction of the Plan. Unless the context clearly indicates to the contrary, a reference to a statute or document shall be construed as referring to any subsequently enacted, adopted, or executed counterpart.

15. **OTHER INFORMATION.**

(a) Type of Plan.

This is a welfare plan.

(b) Plan Number.

The Plan Number assigned by Semtech is 502.

(c) Addresses, etc.

Semtech's address, telephone number, and employer identification number are as follows:

Semtech Corporation
Attention: General Counsel
200 Flynn Road
Camarillo, CA 93012

Telephone: (805) 498-2111

EIN: 95-2119684

(d) Plan Year.

The Plan's Plan Year is the Calendar year.

(e) Agent for Service of Legal Process.

Semtech's General Counsel is the Plan's agent for service of legal process.

(f) Funding.

The Plan is funded out of Semtech's general assets.

(g) Plan Amendment or Termination.

Semtech has reserved the right to amend and terminate the Plan as set forth herein.

16. **STATEMENT OF ERISA RIGHTS.**

As a participant in this Semtech Corporation Executive Change in Control Retention Plan you are entitled to certain rights and protections under the Employee Retirement Income Security Act of 1974 (as noted above, ERISA). ERISA provides that all Plan participants shall be entitled to:

(a) Receive Information About Your Plan and Benefits

Examine, without charge, all documents governing the Plan, and a copy of insurance contracts and the latest annual report (Form 5500 Series), if any, filed by the Plan with the U.S. Department of Labor and available at the Public Disclosure Room of the Employee Benefits Security Administration and at Semtech's corporate office and other specified locations without charge.

Obtain, upon written request to the Administrative Committee, copies of documents governing the operation of the plan, including insurance contracts and copies of the latest annual report (Form 5500 Series), if any, and an updated summary plan description. The Administrative Committee may make a reasonable charge for the copies.

Receive a summary of the Plan's annual financial report, if any. The Plan administrator is required by law to furnish each participant with a copy of this summary annual report, if any.

(b) Prudent Actions by Plan Fiduciaries

In addition to creating rights for Plan participants ERISA imposes duties upon the people who are responsible for the operation of the Plan. The people who operate your Plan, called "fiduciaries" of the Plan, have a duty to do so prudently and in the interest of you and other Plan participants and beneficiaries. No one, including your employer or any other person, may fire you or otherwise discriminate against you in any way to prevent you from obtaining a welfare benefit or exercising your rights under ERISA.

(c) Enforce Your Rights

If your claim for a welfare benefit is denied or ignored, in whole or in part, you have a right to know why this was done, to obtain copies of documents relating to the decision without charge, and to appeal any denial, all within certain time schedules.

Under ERISA, there are steps you can take to enforce the above rights. For instance, if you request a copy of Plan documents or the latest annual report, if any, from the Plan and do not receive them within 30 days, you may file suit in a Federal court. In such a case, the court may require the Plan administrator to provide the materials and pay you up to $110 a day until you receive the materials, unless the materials were not sent because of reasons beyond the control of the administrator. If you have a claim for benefits which is denied or ignored, in whole or in part, you may file suit in a state or Federal court. In addition, if you disagree with the Plan's decision or lack thereof concerning the qualified status of a domestic relations order or a medical child support order, you may file suit in Federal court. If it should happen that Plan fiduciaries misuse the Plan's money, or if you are discriminated against for asserting your rights, you may seek assistance from the U.S. Department of Labor, or you may file suit in a Federal court. The court will decide who should pay court costs and legal fees. If you are successful the court may order the person you have sued to pay these costs and fees. If you lose, the court may order you to pay these costs and fees, for example, if it finds your claim is frivolous.

(d) Assistance with Your Questions

If you have any questions about your Plan, you should contact the Plan administrator. If you have any questions about this statement or about your rights under ERISA, or if you need assistance in obtaining documents from the Plan administrator, you should contact the nearest office of the Employee Benefits Security Administration, U.S. Department of Labor, listed in your telephone directory or the

Division of Technical Assistance and Inquiries, Employee Benefits Security Administration, U.S. Department of Labor, 200 Constitution Avenue N.W., Washington, D.C. 20210. You may also obtain certain publications about your rights and responsibilities under ERISA by calling the publications hotline of the Employee Benefits Security Administration or by visiting its website (http://www.dol.gov/ebsa/).

17. **WHOM TO CALL FOR ADDITIONAL INFORMATION.**

If you have any questions, please contact the Administrative Committee.

Appendix 1

Form of General Release Agreement

GENERAL RELEASE AGREEMENT

In order to settle as fully as possible all known and unknown claims [Name of Executive] ("**Former Executive**"), might have against Semtech Corporation (the "**Company**") and all related parties, the Company and Former Executive agree as follows:

1. **Consideration.** The Company agrees to provide Former Executive the severance benefits provided for under the Semtech Corporation Executive Change in Control Retention Plan (the "**Plan**") if Former Executive executes, and does not revoke, this General Release Agreement (this "**Agreement**"). Former Executive agrees to the Plan's terms. Plan benefits will not be taken into account in determining Former Executive's rights or benefits under any other program. The Company will report any such benefits to tax authorities and withhold taxes from them as it determines it is required to do.

2. **Release by Former Executive.** Former Executive, on his or her own behalf and on behalf of his or her descendants, dependents, heirs, executors, administrators, personal representatives, assigns and successors, and each of them, hereby acknowledges full and complete satisfaction of and releases and discharges and covenants not to sue the Company, its divisions, subsidiaries, parents, or affiliated corporations, past and present, and each of them, as well as its and their assignees, successors, directors, officers, stockholders, partners, representatives, attorneys, agents or employees, past or present, or any of them (individually and collectively, "**Released Parties**"), from and with respect to any and all claims, agreements, obligations, demands and causes of action, known or unknown, suspected or unsuspected, arising out of or in any way connected with Former Executive's employment or any other relationship with or interest in the Company or the termination thereof, including without limiting the generality of the foregoing, any claim for severance pay, profit sharing, bonus or similar benefit, pension, retirement, life insurance, health or medical insurance or any other fringe benefit, or disability, or any other claims, agreements, obligations, demands and causes of action, known or unknown, suspected or unsuspected resulting from any act or omission by or on the part of Released Parties committed or omitted prior to the date of this Agreement set forth below, including, without limiting the generality of the foregoing, any claim under Title VII of the Civil Rights Act of 1964, the Civil Rights Act of 1991, the Americans with Disabilities Act, the Fair Labor Standards Act, the Employee Retirement Income Security Act of 1974, the federal Family and Medical Leave Act, the California Business and Professions Code, the California Fair Employment and Housing Act, the California Labor Code, the California Family Rights Act, under any amendment to any such law, or any other federal, state or local law, regulation, ordinance, constitution or common law (collectively, the "**Claims**"); provided, however, that the foregoing release does not apply to any obligation of the Company to Former Executive as set forth in Section 3 below. Notwithstanding anything to the contrary herein, nothing in this Agreement prohibits Former Executive from filing a charge with or participating in an investigation conducted by any state or federal government agencies. However, Former Executive does waive, to the maximum extent permitted by law the right to receive any monetary or other recovery, should any agency or any other person pursue any claims on Former Executive's behalf arising out of any claim released pursuant to this Agreement. For clarity, and as required by law, such waiver does not prevent Former Executive from accepting a whistleblower award from the Securities and Exchange Commission pursuant to Section 21F of the Securities Exchange Act of 1934, as amended. Former Executive acknowledges and agrees that he or she has received any and all leave and other benefits that he or she has been and is entitled to pursuant to the Family and Medical Leave Act of 1993.

3. **Claims Not Released.** Notwithstanding anything to the contrary contained herein, the foregoing release does not apply to any obligation of any Released Party to Former Executive pursuant to any of the following: (1) Section 4 of the Plan; (2) any equity-based awards previously granted by the Company to Former Executive, to the extent that such awards continue after the termination of Former Executive's employment with the Company in accordance with the applicable terms of such awards and the Plan; (3) any right to indemnification that Former Executive may have pursuant to the Company's bylaws, its corporate charter or under any written indemnification agreement with the Company (or any corresponding provision of any subsidiary or affiliate of the Company) with respect to any loss, damages or expenses (including but not limited to attorneys' fees to the extent otherwise provided) that Former Executive may in the future incur with respect to his or her service as an employee, officer or director of the Company or any of its subsidiaries or affiliates; (4) with respect to any rights that Former Executive may have to insurance coverage for such losses, damages or expenses under any Company (or subsidiary or affiliate) directors and officers liability insurance policy; (5) any rights to continued benefit coverage that Former Executive may have under COBRA; (6) any rights to payment of benefits that Former Executive may have under a retirement plan sponsored or maintained by the Company that is intended to qualify under Section 401(a) of the Internal Revenue Code of 1986, as amended; or (7) any deferred compensation or supplemental retirement benefits that Former Executive may be entitled to under a nonqualified deferred compensation or supplemental retirement plan of the Company. In addition, the foregoing release does not cover any Claim that cannot be so released as a matter of applicable law.

4. **Waiver of Civil Code Section 1542.** This Agreement is intended to be effective as a general release of and bar to each and every Claim hereinabove specified. Accordingly, Former Executive hereby expressly waives any rights and benefits conferred by Section 1542 of the California Civil Code and any similar provision of any other applicable state law as to the Claims. Section 1542 of the California Civil Code provides:

> "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT, IF KNOWN BY HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY."

Former Executive acknowledges that he or she later may discover claims, demands, causes of action or facts in addition to or different from those which Former Executive now knows or believes to exist with respect to the subject matter of this Agreement and which, if known or suspected at the time of executing this Agreement, may have materially affected its terms. Nevertheless, Former Executive hereby waives, as to the Claims, any claims, demands, and causes of action that might arise as a result of such different or additional claims, demands, causes of action or facts.

5. **ADEA Waiver.** Former Executive expressly acknowledges and agrees that by entering into this Agreement, he or she is waiving any and all rights or claims that he or she may have arising under the Age Discrimination in Employment Act of 1967, as amended ("**ADEA**"), which have arisen on or before the date of execution of this Agreement. Former Executive further expressly acknowledges and agrees that:

(a) In return for this Agreement, he or she will receive consideration beyond that which he or she was already entitled to receive before entering into this Agreement;

(b) He or she is hereby advised in writing by this Agreement to consult with an attorney before signing this Agreement;

(c) He or she was given a copy of this Agreement on [_________, 20__], and informed that he or she had twenty-one (21) days within which to consider this Agreement and that if he or she wished to execute this Agreement prior to the expiration of such 21-day period he or she will have done so voluntarily and with full knowledge that he or she is waiving his or her right to have twenty-one (21) days to consider this Agreement; and that such twenty-one (21) day period to consider this Agreement would not and will not be re-started or extended based on any changes, whether material or immaterial, that are or were made to this Agreement in such twenty-one (21) day period after he or she received it;

(d) Nothing in this Agreement prevents or precludes Former Executive from challenging or seeking a determination in good faith of the validity of this waiver under the ADEA, nor does it impose any condition precedent, penalties or costs from doing so, unless specifically authorized by federal law; and

(e) He or she was informed that he or she has seven (7) days following the date of execution of this Agreement in which to revoke this Agreement, and this Agreement will become null and void if Former Executive elects revocation during that time. Any revocation must be in writing and must be received by the Company during the seven-day revocation period. In the event that Former Executive exercises his right of revocation, neither the Company nor Former Executive will have any obligations under this Agreement. Any notice of revocation should be sent by Former Executive in writing to the Company (attention [_____________]), [Address], so that it is received within the seven-day period following execution of this Agreement by Former Executive.

6. **Applicable Law.** This Agreement, and all questions relating to its validity, interpretation, performance and enforcement, as well as the legal relations hereby created between the parties hereto, shall be governed by and construed under, and interpreted and enforced in accordance with, the laws of the State of California, notwithstanding any California or other conflict of law provision to the contrary.

7. **Representations and Promises.** The Company and Former Executive hereby acknowledge and agree that:

(a) **Complete Agreement.** Except as specifically provided in Section 3 of this Agreement, this Agreement is the entire agreement relating to any claims or future rights that Former Executive might have with respect to the Company and the Released Parties. Once in effect, this Agreement is a legally admissible and binding agreement. It shall not be construed strictly for or against Former Executive, the Company, or any Released Party.

(b) **Amendments.** This Agreement only may be amended, modified or changed (in whole or in part) by a definitive written agreement expressly referring to this Agreement, which agreement is executed by both the Company and Former Executive.

(c) **Representations.** When Former Executive decided to sign this Agreement, Former Executive was not relying on any representations that are not in this Agreement. The Company would not have agreed to pay the consideration Former Executive is receiving in exchange for this Agreement but for the representations and promises Former Executive is making by signing this Agreement. Former Executive acknowledges that he or she has not suffered any job-related wrongs or injuries, such as any type of discrimination, for which Former Executive might still be entitled to compensation or relief now or in the future.

(d) **No Wrongdoing.** This Agreement is not an admission of wrongdoing by the Company or any other Released Party; neither it nor any drafts shall be admissible evidence of wrongdoing.

(e) **No Transferred Claims.** Former Executive represents and warrants to the Company that he or she has not heretofore assigned or transferred to any person not a party to this Agreement any released matter or any part or portion thereof.

(f) **Severability.** If any provision of this Agreement or the application thereof is held invalid, the invalidity shall not affect other provisions or applications of this Agreement which can be given effect without the invalid provisions or applications and to this end the provisions of this Agreement are declared to be severable.

(g) **Consideration of Agreement.** If Former Executive initially did not think any representation Former Executive is making in this Agreement was true or if Former Executive initially was uncomfortable making it, Former Executive resolved all of Former Executive's doubts and concerns before signing this Agreement. Former Executive represents that Former Executive has carefully read this Agreement, Former Executive fully understands what it means, Former Executive is entering into it knowingly and voluntarily, and all Former Executive's representations in it are true. The consideration period described in the box above Former Executive's signature started when Former Executive first was given this Agreement ; Former Executive acknowledges that Former Executive also was given employment termination program census data at that time (to the extent the Company was required to provide such data under applicable law). Former Executive waives any right to have this consideration period restarted or extended by any subsequent changes to this Agreement.

(h) **Return of Company Property.** Former Executive represents that Former Executive has returned to the Company all files, memoranda, documents, records, copies of the foregoing, Company-provided credit cards, keys, building passes, security passes, access or identification cards, and any other property of the Company or any Released Party in Former Executive's possession or control.

(i) **Nondisparagement.** Former Executive agrees not to criticize, denigrate, or otherwise disparage the Company, any other Released Party, or any of their products, processes, experiments, policies, practices, standards of business conduct, or areas or techniques of research. However, nothing in this subsection shall prohibit Former Executive from complying with any lawful subpoena or court order or taking any other actions affirmatively authorized by law.

(j) **Waiver.** No waiver of any breach of any term or provision of this Agreement shall be construed to be, nor shall be, a waiver of any other breach of this Agreement. No waiver shall be binding unless in writing and signed by the party waiving the breach.

(k) **Counterparts.** This Agreement may be executed in counterparts, and each counterpart, when executed, shall have the efficacy of a signed original. Photographic or PDF copies of such signed counterparts may be used in lieu of the originals for any purpose.

8. **Employment Termination.** Former Executive's employment with the **[**Company**]** ended effective as of [__________].

[Remainder of page intentionally left blank]

YOU MAY NOT MAKE ANY CHANGES TO THE TERMS OF THIS AGREEMENT. BEFORE SIGNING THIS AGREEMENT, READ IT CAREFULLY, AND THE COMPANY SUGGESTS THAT YOU DISCUSS IT WITH YOUR ATTORNEY AT YOUR OWN EXPENSE. TAKE AS MUCH TIME AS YOU NEED TO CONSIDER THIS AGREEMENT BEFORE DECIDING WHETHER TO SIGN IT, UP TO [21/45] DAYS. BY SIGNING IT YOU WILL BE WAIVING YOUR KNOWN AND UNKNOWN CLAIMS.

_________ IS THE DEADLINE FOR YOU TO DELIVER A SIGNED COPY OF THIS AGREEMENT TO _________ AT _________. IF YOU FAIL TO DO SO, YOU WILL NOT RECEIVE THE SPECIAL PAYMENTS OR BENEFITS DESCRIBED IN IT.

YOU MAY REVOKE THIS AGREEMENT IF YOU REGRET HAVING SIGNED IT. TO DO SO, YOU MUST DELIVER A WRITTEN NOTICE OF REVOCATION TO _________ AT _________ BEFORE SEVEN 24-HOUR PERIODS EXPIRE FROM THE TIME YOU SIGNED IT. IF YOU REVOKE THIS AGREEMENT, IT WILL NOT GO INTO EFFECT AND YOU WILL NOT RECEIVE THE SPECIAL PAYMENTS OR BENEFITS DESCRIBED IN IT.

The undersigned have read and understand the consequences of this Agreement and voluntarily sign it. The undersigned declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

EXECUTED this ________ day of ________ 20___, at ______________________

County, __________.

"FORMER EXECUTIVE"

____

[Name]

EXECUTED this ________ day of ________ 20___, at ______________________

County, __________.

"COMPANY"

[___________________]

By: ___________________________________

[Name]
[Title]

Exhibit 10.3

[Company Letterhead]

[Date]

[Employee Name]
[Employee Address]

Re: Executive Change in Control Retention Plan Participation Letter Agreement

Dear [Employee Name]:

Semtech Corporation ("**Semtech**") has adopted the new Semtech Corporation Executive Change in Control Retention Plan (the "**New Plan**") effective August 21, 2019 (the "**Effective Date**"). The New Plan replaces the Semtech Corporation Amended and Restated Executive Change in Control Retention Plan, which originally took effect on December 19, 2014 (the "**Prior Plan**"). The Prior Plan has been terminated effective as of the Effective Date.

You have been selected as a participant in the New Plan effective as of the Effective Date. As a condition to your participation in the New Plan, you are required to sign this letter and return a copy to Semtech as instructed below. This letter supersedes and replaces in its entirety your participation agreement under and with respect to the Prior Plan.

Through this letter, you are being offered the opportunity to become a participant in the New Plan, and thereby to be eligible to receive the benefits described in the New Plan, which are contingent on your employment terminating under certain circumstances in connection with a Change in Control (as defined in the New Plan). A copy of the New Plan is attached to this letter. You should read it carefully and become comfortable with its terms and conditions, and those set forth below.

By signing below, you acknowledge and agree to the following:

(a) You have received a copy of the New Plan, which also serves as its summary plan description;

(b) Terms not defined in this letter but beginning with initial capital letters shall have the meaning assigned to them in the New Plan;

(c) Participation in the New Plan requires that you agree irrevocably and voluntarily to the terms of the New Plan and the terms set forth in this letter agreement; and

(d) You have had the opportunity to carefully evaluate this opportunity, and desire to participate in the New Plan according to the terms and conditions set forth herein.

Subject to the foregoing, we invite you to become a "Participant" in the New Plan. Your participation in the New Plan will be effective upon your signing and returning this letter agreement to Semtech within 30 days of your receipt of this letter agreement.

NOW, THEREFORE, you and Semtech (hereinafter referred to as "**the parties**") hereby AGREE as follows:

1. This letter agreement shall terminate, and your status as a "Participant" in the New Plan shall end, on the first to occur of:

(a) your termination of employment, for any reason, provided that such termination does not occur during a Change in Control Window;

(b) your termination of employment during a Change in Control Window to the extent that (i) Semtech or an Affiliate terminates your employment for "Cause" or (ii) you terminate employment for a reason other than "Good Reason" (as such terms are defined in the New Plan) or (iii) your employment terminates as a result of your death or Disability;

(c) the second anniversary of a Change in Control (provided that if your employment has previously terminated in a Qualifying Termination, this letter agreement and your status as a Participant shall not terminate until all New Plan benefits have been paid to you);

(d) the date all New Plan benefits have been paid to you; or

(e) the effective time of a termination of the Plan in accordance with Section 11 of the Plan.

2. You recognize and agree that your execution of this letter agreement results in your enrollment and participation in the New Plan, that you agree to be bound by the terms and conditions of the New Plan and this letter agreement, and that you understand that this letter agreement may not be amended or modified except pursuant to Section 11 of the New Plan or as expressly provided above.

3. This letter agreement embodies the entire agreement of the parties hereto respecting the matters within its scope. This letter agreement supersedes all prior and contemporaneous agreements of the parties hereto that directly or indirectly bears upon the subject matter hereof (including, without limitation, the Prior Plan and any participation letter or agreement you may have had under the Prior Plan).

EXECUTIVE	**SEMTECH CORPORATION**
____________________	____________________
Name:	Name:
Date:	Title:
	Date:

Exhibit 31.1

CERTIFICATION

I, Mohan R. Maheswaran, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Semtech 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(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: December 4, 2019

/s/ Mohan R. Maheswaran

Mohan R. Maheswaran
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, Emeka N. Chukwu, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Semtech 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(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: December 4, 2019

/s/ Emeka N. Chukwu

Emeka N. Chukwu

Executive Vice President and Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 USC 1350 AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Semtech Corporation (the “Company”) for the period ended October 27, 2019 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Mohan R. Maheswaran, Chief Executive Officer of the Company, hereby certify pursuant to 18 USC §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: December 4, 2019

/s/ Mohan R. Maheswaran

Mohan R. Maheswaran
President and Chief Executive Officer

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002, has been provided to Semtech Corporation and will be retained by Semtech Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

The information contained in this Exhibit 32.1 is being furnished and shall not be deemed “filed” for the purposes of section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section. The information in this Exhibit 32.1 shall not be incorporated by reference into any registration statement or other document pursuant to the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference to this Exhibit 32.1 in such filing.

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 USC 1350 AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Semtech Corporation (the “Company”) for the period ended October 27, 2019 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Emeka N. Chukwu, Chief Financial Officer of the Company, hereby certify pursuant to 18 USC §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: December 4, 2019

/s/ Emeka N. Chukwu

Emeka N. Chukwu
Executive Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002, has been provided to Semtech Corporation and will be retained by Semtech Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

The information contained in this Exhibit 32.2 is being furnished and shall not be deemed “filed” for the purposes of section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section. The information in this Exhibit 32.2 shall not be incorporated by reference into any registration statement or other document pursuant to the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference to this Exhibit 32.2 in such filing.