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 September 28, 2019

OR

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

Commission file number 001-04298

COHU, INC.
(Exact name of registrant as specified in its charter)

Delaware	**95-1934119**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
12367 Crosthwaite Circle, Poway, California	**92064-6817**
(Address of principal executive offices)	*(Zip Code)*

Registrant's telephone number, including area code (858) 848-8100

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

Title of Each Class	Trading Symbol(s)	Name of Exchange on Which Registered
Common Stock, $1.00 par value	**COHU**	**The NASDAQ Stock Market LLC**

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

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

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

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

Large accelerated filer ☐ Accelerated filer ☑ Non-accelerated filer ☐

Smaller reporting company ☐ Emerging growth company ☐

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

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

As of October 25, 2019 the Registrant had 41,266,401 shares of its $1.00 par value common stock outstanding.

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Item 1.

COHU, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except par value)

	September 28, 2019 (Unaudited)	December 29, 2018 *
ASSETS		
Current assets:		
Cash and cash equivalents	$ 145,094	$ 164,460
Short-term investments	573	560
Accounts receivable, net	126,474	149,276
Inventories	133,923	139,314
Prepaid expenses	19,129	26,206
Other current assets	2,669	1,682
Current assets of discontinued operations (Note 10)	3,733	3,741
Total current assets	431,595	485,239
Property, plant and equipment, net	70,439	74,332
Goodwill	235,903	242,127
Intangible assets, net	282,488	318,961
Other assets	16,958	13,264
Operating lease right of use assets	34,096	-
Noncurrent assets of discontinued operations (Note 10)	130	79
	$ 1,071,609	$ 1,134,002
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings	$ 3,241	$ 3,115
Current installments of long-term debt	3,141	3,672
Accounts payable	48,126	48,117
Accrued compensation and benefits	25,432	29,402
Accrued warranty	5,716	7,769
Deferred profit	7,952	6,896
Income taxes payable	6,266	11,055
Other accrued liabilities	38,911	50,045
Current liabilities of discontinued operations (Note 10)	564	518
Total current liabilities	139,349	160,589
Accrued retirement benefits	20,041	19,740
Noncurrent deferred gain on sale of facility	-	8,776
Deferred income taxes	29,804	38,942
Noncurrent income tax liabilities	9,459	9,711
Long-term debt	344,920	346,041
Other accrued liabilities	7,209	4,259
Long-term lease liabilities	29,396	-
Noncurrent liabilities of discontinued operations (Note 10)	34	-
Stockholders' equity:		
Preferred stock, $1 par value; 1,000 shares authorized, none issued	-	-
Common stock, $1 par value; 60,000 shares authorized, 41,265 shares issued and outstanding in 2019 and 40,763 shares in 2018	41,265	40,763
Paid-in capital	428,428	419,690
Retained earnings	62,320	111,670
Accumulated other comprehensive loss	(40,260)	(25,880)
Total Cohu stockholders' equity	491,753	546,243
Noncontrolling interest	(356)	(299)
Total equity	491,397	545,944
	$ 1,071,609	$ 1,134,002

* Derived from December 29, 2018 audited financial statements

The accompanying notes are an integral part of these statements.

COHU, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)
(in thousands, except per share amounts)

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Net sales	$ 143,498	$ 86,164	$ 441,318	$ 281,131
Cost and expenses:				
Cost of sales (1)	84,565	51,142	265,564	163,742
Research and development	20,483	11,088	65,324	33,914
Selling, general and administrative	33,690	15,899	108,404	50,988
Amortization of purchased intangible assets	9,969	1,024	29,975	3,117
Restructuring charges	814	-	10,720	-
	149,521	79,153	479,987	251,761
Income (loss) from operations	(6,023)	7,011	(38,669)	29,370
Other (expense) income:				
Interest expense	(5,000)	(11)	(15,789)	(33)
Interest income	190	337	603	913
Foreign transaction gain (loss)	1,630	(232)	1,302	1,220
Income (loss) from continuing operations before taxes	(9,203)	7,105	(52,553)	31,470
Income tax provision	1,277	2,302	161	6,897
Income (loss) from continuing operations	(10,480)	4,803	(52,714)	24,573
Income from discontinued operations, net of tax	154	-	342	-
Net income (loss)	$ (10,326)	$ 4,803	$ (52,372)	$ 24,573
Net income attributable to noncontrolling interest	$ 142	$ -	$ 62	$ -
Net income (loss) attributable to Cohu	$ (10,468)	$ 4,803	$ (52,434)	$ 24,573
Income (loss) per share:				
Basic:				
Income (loss) from continuing operations before noncontrolling interest	$ (0.25)	$ 0.17	$ (1.28)	$ 0.85
Income from discontinued operations	0.00	-	0.00	-
Net income attributable to noncontrolling interest	0.00	-	0.00	-
Net income (loss) attributable to Cohu	$ (0.25)	$ 0.17	$ (1.28)	$ 0.85
Diluted:				
Income (loss) from continuing operations before noncontrolling interest	$ (0.25)	$ 0.16	$ (1.28)	$ 0.83
Income from discontinued operations	0.00	-	0.00	-
Net income attributable to noncontrolling interest	0.00	-	0.00	-
Net income (loss) attributable to Cohu	$ (0.25)	$ 0.16	$ (1.28)	$ 0.83
Weighted average shares used in computing income (loss) per share:				
Basic	41,229	28,948	41,075	28,814
Diluted	41,229	29,770	41,075	29,650
Cash dividends declared per share	$ 0.06	$ 0.06	$ 0.18	$ 0.18

(1)Excludes amortization of $7,597 and $644 for the three months ended September 28, 2019, and September 29, 2018, respectively, and $22,863 and $1,959 for the nine months ended September 28, 2019, and September 29, 2018, respectively.

The accompanying notes are an integral part of these statements.

COHU, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Unaudited)
(in thousands)

	Three Months Ended September 28, 2019	Three Months Ended September 29, 2018	Nine Months Ended September 28, 2019	Nine Months Ended September 29, 2018
Net income (loss)	$ (10,326)	$ 4,803	$ (52,372)	$ 24,573
Net income attributable to noncontrolling interest	142	-	62	-
Net income (loss) attributable to Cohu	(10,468)	4,803	(52,434)	24,573
Other comprehensive loss, net of tax:				
Foreign currency translation adjustments	(13,276)	(475)	(14,854)	(3,435)
Adjustments related to postretirement benefits	35	(24)	470	17
Change in unrealized gain/loss on investments	-	9	-	7
Other comprehensive loss, net of tax	(13,241)	(490)	(14,384)	(3,411)
Other comprehensive loss attributable to noncontrolling interest	-	-	(4)	-
Other comprehensive loss attributable to Cohu	(13,241)	(490)	(14,380)	(3,411)
Comprehensive income (loss)	(23,567)	4,313	(66,756)	21,162
Comprehensive income attributable to noncontrolling interest	142	-	58	-
Comprehensive income (loss) attributable to Cohu	$ (23,709)	$ 4,313	$ (66,814)	$ 21,162

The accompanying notes are an integral part of these statements.

COHU, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except par value and per share amounts)

Three Months Ended September 28, 2019	Common stock $1 par value	Paid-in capital	Retained earnings	Accumulated other comprehensive loss	Noncontrolling interest	Total
Balance at June 29, 2019	$ 41,100	$ 425,609	$ 75,115	$ (27,019)	$ (356)	$ 514,449
Net loss	-	-	(10,326)	-	-	(10,326)
Changes in cumulative translation adjustment	-	-	-	(13,276)	-	(13,276)
Adjustments related to postretirement benefits, net of tax	-	-	-	35	-	35
Cash dividends - $0.06 per share	-	-	(2,469)	-	-	(2,469)
Exercise of stock options	22	186	-	-	-	208
Shares issued for restricted stock units vested	203	(203)	-	-	-	-
Repurchase and retirement of stock	(60)	(670)	-	-	-	(730)
Share-based compensation expense	-	3,506	-	-	-	3,506
Balance at September 28, 2019	$ 41,265	$ 428,428	$ 62,320	$ (40,260)	$ (356)	$ 491,397
Nine Months Ended September 28, 2019						
Balance at December 29, 2018	$ 40,763	$ 419,690	$ 111,670	$ (25,880)	$ (299)	$ 545,944
Cumulative effect of accounting change[(a)]	-	-	10,352	-	-	10,352
Net loss	-	-	(52,372)	-	-	(52,372)
Changes in cumulative translation adjustment	-	-	-	(14,850)	(4)	(14,854)
Adjustments related to postretirement benefits, net of tax	-	-	-	470	-	470
Cash dividends - $0.18 per share	-	-	(7,383)	-	-	(7,383)
Exercise of stock options	37	293	-	-	-	330
Shares issued under ESPP	64	743	-	-	-	807
Shares issued for restricted stock units vested	597	(597)	-	-	-	-
Repurchase and retirement of stock	(196)	(2,562)	-	-	-	(2,758)
Noncontrolling interest	-	-	53	-	(53)	-
Share-based compensation expense	-	10,861	-	-	-	10,861
Balance at September 28, 2019	$ 41,265	$ 428,428	$ 62,320	$ (40,260)	$ (356)	$ 491,397

(a) Cumulative effect of accounting change relates to our adoption of ASU 2016-02, Leases (Topic 842).

The accompanying notes are an integral part of these statements.

COHU, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except par value and per share amounts)

Three Months Ended September 29, 2018	Common stock $1 par value	Paid-in capital	Retained earnings	Accumulated other comprehensive loss	Noncontrolling interest	Total
Balance at June 30, 2018	$ 28,883	$ 128,248	$ 168,040	$ (20,708)	$ -	$ 304,463
Net income	-	-	4,803	-	-	4,803
Changes in cumulative translation adjustment	-	-	-	(475)	-	(475)
Adjustments related to postretirement benefits, net of tax	-	-	-	(24)	-	(24)
Changes in unrealized gains and losses on investments, net of tax	-	-	-	9	-	9
Cash dividends - $0.06 per share	-	-	(1,733)	-	-	(1,733)
Exercise of stock options	15	111	-	-	-	126
Shares issued for restricted stock units vested	5	(5)	-	-	-	-
Repurchase and retirement of stock	(2)	(39)	-	-	-	(41)
Share-based compensation expense	-	1,879	-	-	-	1,879
Balance at September 29, 2018	$ 28,901	$ 130,194	$ 171,110	$ (21,198)	$ -	$ 309,007
Nine Months Ended September 29, 2018						
Balance at December 30, 2017	$ 28,489	$ 127,663	$ 150,726	$ (17,787)	$ -	$ 289,091
Cumulative effect of accounting change[(b)]	-	-	1,057	-	-	1,057
Net income	-	-	24,573	-	-	24,573
Changes in cumulative translation adjustment	-	-	-	(3,435)	-	(3,435)
Adjustments related to postretirement benefits, net of tax	-	-	-	17	-	17
Changes in unrealized gains and losses on investments, net of tax	-	-	-	7	-	7
Cash dividends - $0.18 per share	-	-	(5,246)	-	-	(5,246)
Exercise of stock options	65	575	-	-	-	640
Shares issued under ESPP	41	721	-	-	-	762
Shares issued for restricted stock units vested	473	(473)	-	-	-	-
Repurchase and retirement of stock	(167)	(3,788)	-	-	-	(3,955)
Share-based compensation expense	-	5,496	-	-	-	5,496
Balance at September 29, 2018	$ 28,901	$ 130,194	$ 171,110	$ (21,198)	$ -	$ 309,007

(b) Cumulative effect of accounting change relates to our adoption of ASU 2014-09, Revenue from Contracts with Customers (Topic 606).

The accompanying notes are an integral part of these statements.

COHU, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)
(in thousands)

	Nine Months Ended September 28, 2019	Nine Months Ended September 29, 2018
Cash flows from operating activities:		
Net income (loss) attributable to Cohu	$ (52,434)	$ 24,573
Net income attributable to noncontrolling interest	62	-
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
(Gain) loss on disposal of assets	(350)	29
Depreciation and amortization	45,353	7,276
Share-based compensation expense	10,861	5,497
Amortization of inventory step-up and inventory related charges	5,939	-
Deferred income taxes	(7,698)	(253)
Increase in accrued retiree medical benefits	281	-
Changes in other accrued liabilities	3,999	(409)
Changes in other assets	(2,853)	(667)
Interest capitalized associated with cloud computing implementation	(68)	-
Adjustment to contingent consideration liability	-	657
Amortization of debt discounts and issuance costs	826	-
Changes in current assets and liabilities, excluding effects from acquisitions:		
Accounts receivable	21,757	(8,092)
Other current assets	(7,304)	328
Inventories	(660)	(2,555)
Deferred profit	1,096	(3,463)
Accounts payable	(2,804)	1,037
Income taxes payable	(3,747)	3,898
Accrued compensation, warranty and other liabilities	(8,818)	1,351
Net cash provided by operating activities	3,438	29,207
Cash flows from investing activities, excluding effects from acquisitions:		
Purchases of property, plant and equipment	(13,347)	(2,472)
Purchases of short-term investments	-	(38,700)
Sales and maturities of short-term investments	-	59,480
Cash received from sale of fixed assets	1,519	25
Net cash provided by (used in) investing activities	(11,828)	18,333
Cash flows from financing activities:		
Proceeds from Rasco term loan	3,720	-
Cash dividends paid	(7,359)	(5,217)
Repurchases of common stock, net	(1,212)	(2,553)
Payment of contingent consideration for Kita	-	(823)
Repayments of long-term debt	(3,598)	(975)
Net cash used in financing activities	(8,449)	(9,568)
Effect of exchange rate changes on cash and cash equivalents	(1,812)	(1,563)
Net increase (decrease) in cash and cash equivalents	(18,651)	36,409
Cash and cash equivalents including discontinued operations at beginning of period	164,921	134,286
Cash and cash equivalents including discontinued operations at end of period	146,270	170,695
Cash held by discontinued operations at end of period (Note 10)	(1,176)	-
Cash and cash equivalents from continuing operations at end of the period	$ 145,094	$ 170,695
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 14,820	$ -
Cash paid for income taxes	$ 13,275	$ 3,549
Inventory capitalized as property, plant and equipment	$ 261	$ 514
Dividends declared but not yet paid	$ 2,468	$ 1,734
Property, plant and equipment purchases included in accounts payable	$ 853	$ 311
Capitalized cloud computing service costs included in accounts payable	$ 2,185	$ 1,044
Capitalized debt issuance costs included in current other accrued liabilities	$ -	$ 1,522

The accompanying notes are an integral part of these statements.

Cohu, Inc.
Notes to Unaudited Condensed Consolidated Financial Statements
September 28, 2019

1. Summary of Significant Accounting Policies

Basis of Presentation

Our fiscal years are based on a 52- or 53-week period ending on the last Saturday in December. The condensed consolidated balance sheet at December 29, 2018, has been derived from our audited financial statements at that date. The interim condensed consolidated financial statements as of September 28, 2019, (also referred to as "the third quarter of fiscal 2019" and "the first nine months of fiscal 2019") and September 29, 2018, (also referred to as "the third quarter of fiscal 2018" and "the first nine months of fiscal 2018") are unaudited. However, in management's opinion, these financial statements reflect all adjustments (consisting only of normal, recurring items) necessary to provide a fair presentation of our financial position, results of operations and cash flows for the periods presented. Both the three- and nine-month periods ended September 28, 2019 and September 29, 2018, were comprised of 13 and 39 weeks, respectively.

Our interim results are not necessarily indicative of the results that should be expected for the full year. For a better understanding of Cohu, Inc. and our financial statements, we recommend reading these interim condensed consolidated financial statements in conjunction with our audited financial statements for the year ended December 29, 2018, which are included in our 2018 Annual Report on Form 10-K, filed with the U. S. Securities and Exchange Commission ("SEC"). In the following notes to our interim condensed consolidated financial statements, Cohu, Inc. is referred to as "Cohu", "we", "our" and "us".

The condensed consolidated financial statements include the accounts of Cohu and a variable interest entity ("VIE") that was acquired as part of our acquisition of Xcerra Corporation ("Xcerra") and in which we have determined we are the primary beneficiary. The non-controlling interest in ALBS Solutions Sdn Bhd ("ALBS") represents the 80% equity interest that is not held by Cohu. ALBS is a privately held corporation which provides high-tech semiconductor automation systems to different industrial users. All significant consolidated transactions and balances have been eliminated in consolidation.

Principles of Consolidation for Variable Interest Entities

We follow ASC Topic 810-10-15 guidance with respect to accounting for VIEs. These entities do not have sufficient equity at risk to finance their activities without additional subordinated financial support from other parties or whose equity investors lack any of the characteristics of a controlling financial interest. A variable interest is an investment or other interest that will absorb portions of a VIE's expected losses or receive portions of its expected residual returns and are contractual, ownership, or pecuniary in nature and that change with changes in the fair value of the entity's net assets. A reporting entity is the primary beneficiary of a VIE and must consolidate it when that party has a variable interest, or combination of variable interests, that provides it with a controlling financial interest. A party is deemed to have a controlling financial interest if it meets both of the power and losses/benefits criteria. The power criterion is the ability to direct the activities of the VIE that most significantly impact its economic performance. The losses/benefits criterion is the obligation to absorb losses from, or right to receive benefits from, the VIE that could potentially be significant to the VIE. The VIE model requires an ongoing reconsideration of whether a reporting entity is the primary beneficiary of a VIE due to changes in facts and circumstances.

As of September 28, 2019 and December 29, 2018, we consolidated one VIE. Cohu is the primary beneficiary of ALBS which qualifies as a VIE that meets the definition of a business. As such, the assets, liabilities, and noncontrolling interest of ALBS were measured at fair value upon acquisition in accordance with ASC 805, *Business Combinations* ("ASC 805"). The assets and liabilities and revenues and expenses of this VIE are included in our condensed consolidated financial statements. As of September 28, 2019 and December 29, 2018, the assets and liabilities of ALBS are immaterial to Cohu and, therefore, not shown separately on our condensed consolidated balance sheets. The third-party equity interest of ALBS is referred to as noncontrolling interest. The portion of net income (loss) attributable to the noncontrolling interest of ALBS is presented as net income (loss) allocated to noncontrolling interests in the condensed consolidated statements of operations and comprehensive loss, and the portion of stockholders' equity of ALBS is presented as noncontrolling interest in the condensed consolidated statements of stockholders' equity.

Cohu, Inc.
Notes to Unaudited Condensed Consolidated Financial Statements
September 28, 2019

Reclassifications

In conjunction with the acquisition of Xcerra we assessed the need to realign our financial statement presentation and certain income statement classifications were adjusted with prior periods reclassified to conform with current period presentation. The changes made were as follows:

- Amortization of intangibles previously were presented in cost of sales and SG&A. These amounts are now presented as a separate line item "Amortization of purchased intangible assets" within operating expenses.

- Gains and losses associated with foreign currency translation and remeasurement were included within SG&A. These amounts are now presented as "Foreign transaction gain (loss)".

A summary of the reclassifications described above and the impact on our condensed consolidated statements of operations is as follows:

Three Months Ended September 29, 2018	As previously published	Amortization of purchased intangible assets	Foreign transaction gains (loss)	As adjusted
Cost of sales	$ 51,786	(644)	-	$ 51,142
SG&A expense	$ 16,511	(380)	(232)	$ 15,899

Nine Months Ended September 29, 2018	As previously published	Amortization of purchased intangible assets	Foreign transaction gains (loss)	As adjusted
Cost of sales	$ 165,701	(1,959)	-	$ 163,742
SG&A expense	$ 50,926	(1,158)	1,220	$ 50,988

Concentration of Credit Risk

Financial instruments that potentially subject us to significant credit risk consist principally of cash equivalents, short-term investments and trade accounts receivable. We invest in a variety of financial instruments and, by policy, limit the amount of credit exposure with any one issuer.

Trade accounts receivable are presented net of allowance for doubtful accounts of $0.2 million at September 28, 2019, and $0.3 million at December 29, 2018. Our customers include semiconductor manufacturers and semiconductor test subcontractors throughout many areas of the world. While we believe that our allowance for doubtful accounts is adequate and represents our best estimate at September 28, 2019, we will continue to monitor customer liquidity and other economic conditions, which may result in changes to our estimates regarding collectability.

Inventories

Inventories are stated at the lower of cost, determined on a first-in, first-out basis, or net realizable value. Cost includes labor, material and overhead costs. Determining net realizable value of inventories involves numerous estimates and judgments including projecting average selling prices and sales volumes for future periods and costs to complete and dispose of inventory. As a result of these analyses, we record a charge to cost of sales in advance of the period when the inventory is sold when estimated net realizable values are below our costs.

Inventories by category were as follows (*in thousands*):

	September 28, 2019	December 29, 2018
Raw materials and purchased parts	$ 70,677	$ 60,112
Work in process	44,997	57,953
Finished goods	18,249	21,249
Total inventories	$ 133,923	$ 139,314

Cohu, Inc.
Notes to Unaudited Condensed Consolidated Financial Statements
September 28, 2019

Property, Plant and Equipment

Depreciation and amortization of property, plant and equipment, both owned and under financing lease, is calculated principally on the straight-line method based on estimated useful lives of thirty to forty years for buildings, five to fifteen years for building improvements and three to ten years for machinery, equipment and software. Land is not depreciated.

Property, plant and equipment, at cost, consisted of the following *(in thousands)*:

	September 28, 2019	December 29, 2018
Land and land improvements	$ 11,916	$ 11,905
Buildings and building improvements	40,187	37,265
Machinery and equipment	63,451	64,791
	115,554	113,961
Less accumulated depreciation and amortization	(45,115)	(39,629)
Property, plant and equipment, net	$ 70,439	$ 74,332

Segment Information

We applied the provisions of ASC Topic 280, *Segment Reporting*, ("ASC 280"), which sets forth a management approach to segment reporting and establishes requirements to report selected segment information quarterly and to report annually entity-wide disclosures about products, major customers and the geographies in which the entity holds material assets and reports revenue. An operating segment is defined as a component that engages in business activities whose operating results are reviewed by the chief operating decision maker and for which discrete financial information is available. Subsequent to the acquisition of Xcerra on October 1, 2018, we have determined that our four identified operating segments are: Test Handler Group (THG), Semiconductor Tester Group (STG), Interface Solutions Group (ISG) and PCB Test Group (PTG). Our THG, STG and ISG operating segments qualify for aggregation under ASC 280 due to similarities in their customers, their economic characteristics, and the nature of products and services provided. As a result, we report in two segments, Semiconductor Test and Inspection Equipment ("Semiconductor Test & Inspection") and PCB Test Equipment ("PCB Test").

Goodwill, Other Intangible Assets and Long-lived Assets

We evaluate goodwill for impairment annually and when an event occurs or circumstances change that indicate that the carrying value may not be recoverable. We test goodwill for impairment by comparing the book value of net assets to the fair value of the reporting units. If the fair value is determined to be less than the book value, an impairment charge is recognized as the amount by which the carrying amount of goodwill exceeds the reporting unit's fair value, not to exceed the carrying amount of goodwill. We estimated the fair values of our reporting units primarily using the income approach valuation methodology that includes the discounted cash flow method, taking into consideration the market approach and certain market multiples as a validation of the values derived using the discounted cash flow methodology. Forecasts of future cash flows are based on our best estimate of future net sales and operating expenses, based primarily on customer forecasts, industry trade organization data and general economic conditions.

We conduct our annual impairment test as of October 1st of each year, and have determined there was no impairment as of October 1, 2018 as we determined that the estimated fair values of our reporting units exceeded their carrying values on that date. Other events and changes in circumstances may also require goodwill to be tested for impairment between annual measurement dates. As of September 28, 2019, we do not believe that circumstances have occurred that indicate impairment of our goodwill is more-likely-than-not. In the event we determine that an interim goodwill impairment review is required in a future period, the review may result in an impairment charge, which would have a negative impact on our results of operations.

We evaluate our indefinite-lived intangible assets associated with in-process research and development by comparing the fair value of each project with its carrying value. This evaluation is completed annually and whenever indicators of impairment are present.

Cohu, Inc.
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Long-lived assets, other than goodwill, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets might not be recoverable. Conditions that would necessitate an impairment assessment include a significant decline in the observable market value of an asset, a significant change in the extent or manner in which an asset is used, or any other significant adverse change that would indicate that the carrying amount of an asset or group of assets may not be recoverable. For long-lived assets, impairment losses are only recorded if the asset's carrying amount is not recoverable through its undiscounted, probability-weighted future cash flows. We measure the impairment loss based on the difference between the carrying amount and estimated fair value.

Product Warranty

Product warranty costs are accrued in the period sales are recognized. Our products are generally sold with standard warranty periods, which differ by product, ranging from 12- to 36-months. Parts and labor are typically covered under the terms of the warranty agreement. Our warranty expense accruals are based on historical and estimated costs by product and configuration. From time-to-time we offer customers extended warranties beyond the standard warranty period. In those situations the revenue relating to the extended warranty is deferred at its estimated relative standalone selling price and recognized on a straight-line basis over the contract period. Costs associated with our extended warranty contracts are expensed as incurred.

Restructuring Costs

We record restructuring activities including costs for one-time termination benefits in accordance with ASC Topic 420 ("ASC 420"), *Exit or Disposal Cost Obligations.* The timing of recognition for severance costs accounted for under ASC 420 depends on whether employees are required to render service until they are terminated in order to receive the termination benefits. If employees are required to render service until they are terminated in order to receive the termination benefits, a liability is recognized ratably over the future service period. Otherwise, a liability is recognized when management has committed to a restructuring plan and has communicated those actions to employees. Employee termination benefits covered by existing benefit arrangements are recorded in accordance with ASC Topic 712, *Nonretirement Postemployment Benefits.* These costs are recognized when management has committed to a restructuring plan and the severance costs are probable and estimable.

Debt Issuance Costs

We capitalized costs related to the issuance of debt. Debt issuance costs directly related to our Term B Loan are presented within noncurrent liabilities as a reduction of long-term debt in our condensed consolidated balance sheets. The amortization of such costs is recognized as interest expense using the effective interest method over the term of the respective debt issue. Amortization related to deferred debt issuance costs and original discount costs was $0.3 million and $0.8 million for the three and nine months ended September 28, 2019. We obtained the Term B Loan on October 1, 2018, as a result there were no debt issuance costs amortized during the three and nine months ended September 29, 2018.

Foreign Remeasurement and Currency Translation

Assets and liabilities of our wholly owned foreign subsidiaries that use the U.S. Dollar as their functional currency are re-measured using exchange rates in effect at the end of the period, except for nonmonetary assets, such as inventories and property, plant and equipment, which are re-measured using historical exchange rates. Revenues and costs are re-measured using average exchange rates for the period, except for costs related to those balance sheet items that are re-measured using historical exchange rates. Gains and losses on foreign currency transactions are recognized as incurred. During the three and nine months ended September 28, 2019, we recognized foreign exchange gains of $1.6 million and $1.3 million, respectively, in our condensed consolidated statements of operations. During the three and nine months ended September 29, 2018, we recognized a foreign exchange loss of $0.2 million and a gain of $1.2 million, respectively, in our condensed consolidated statements of operations. Certain of our foreign subsidiaries have designated the local currency as their functional currency and, as a result, their assets and liabilities are translated at the rate of exchange at the balance sheet date, while revenue and expenses are translated using the average exchange rate for the period. Cumulative foreign currency translation adjustments resulting from the translation of the financial statements are included as a separate component of stockholders' equity.

Share-Based Compensation

We measure and recognize all share-based compensation under the fair value method. Our estimate of share-based compensation expense requires a number of complex and subjective assumptions including our stock price volatility, employee exercise patterns (expected life of the options) and related tax effects. The assumptions used in calculating the fair value of share-based awards represent our best estimates, but these estimates involve inherent uncertainties and the application of management judgment. Although we believe the assumptions and estimates we have made are reasonable and appropriate, changes in assumptions could materially impact our reported financial results.

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Reported share-based compensation is classified, in our condensed consolidated financial statements, as follows *(in thousands)*:

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Cost of sales	$ 212	$ 125	$ 545	$ 408
Research and development	820	354	2,234	1,098
Selling, general and administrative	2,474	1,401	8,082	3,991
Total share-based compensation	3,506	1,880	10,861	5,497
Income tax benefit	(67)	(115)	(426)	(555)
Total share-based compensation, net	$ 3,439	$ 1,765	$ 10,435	$ 4,942

Income (Loss) Per Share

Basic income (loss) per common share is computed by dividing net income (loss) by the weighted-average number of common shares outstanding during the reporting period. Diluted income (loss) per share includes the dilutive effect of common shares potentially issuable upon the exercise of stock options, vesting of outstanding restricted stock and performance stock units and issuance of stock under our employee stock purchase plan using the treasury stock method. In loss periods, potentially dilutive securities are excluded from the per share computations due to their anti-dilutive effect. For purposes of computing diluted income (loss) per share, stock options with exercise prices that exceed the average fair market value of our common stock for the period are excluded. For the three and nine months ended September 28, 2019, stock options and awards to issue approximately 459,000 and 487,000 shares of common stock were excluded from the computation, respectively. For the three months ended September 29, 2018, no stock options or awards to issue shares of common stock were excluded from the computation. For the nine months ended September 29, 2018, stock options and awards to issue approximately 12,000 shares of common stock were excluded from the computation.

The following table reconciles the denominators used in computing basic and diluted income (loss) per share (*in thousands)*:

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Weighted average common shares	41,229	28,948	41,075	28,814
Effect of dilutive securities	-	822	-	836
	41,229	29,770	41,075	29,650

Cohu has utilized the "control number" concept in the computation of diluted earnings per share to determine whether potential common stock instruments are dilutive. The control number used is income from continuing operations. The control number concept requires that the same number of potentially dilutive securities applied in computing diluted earnings per share from continuing operations be applied to all other categories of income or loss, regardless of their anti-dilutive effect on such categories.

Leases

We adopted *ASU 2016-02*, *Leases (Topic 842)*, as of December 30, 2018. We determine if a contract contains a lease at inception. Operating leases are included in operating lease right of use ("ROU") assets, current other accrued liabilities, and long-term lease liabilities on our condensed consolidated balance sheets. Finance leases are included in property, plant and equipment, other current accrued liabilities, and long-term lease liabilities on our condensed consolidated balance sheets.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at the adoption date or the commencement date for leases entered into after the adoption date. As most of our leases do not provide an implicit rate, we use our incremental borrowing rates for the remaining lease terms based on the information available at the adoption date or commencement date in determining the present value of future payments.

The operating lease ROU asset also includes any lease payments made, lease incentives, favorable and unfavorable lease terms recognized in business acquisitions and excludes initial direct costs incurred and variable lease payments. Variable lease payments include estimated payments that are subject to reconciliations throughout the lease term, increases or decreases in the contractual rent payments as a result of changes in indices or interest rates and tax payments that are based on prevailing rates. Our lease terms may include renewal options to extend the lease when it is reasonably certain that we will exercise those options. In addition, we include purchase option amounts in our calculations when it is reasonably certain that we will exercise those options. Rent expense for minimum payments under operating leases is recognized on a straight-line basis over the term.

Leases with an initial term of 12 months or less are not recorded on the balance sheet, but recognized in our condensed consolidated statements of operations on a straight-line basis over the lease term. We account for lease and non-lease components as a single lease component and include both in our calculation of the ROU assets and lease liabilities.

We sublease certain leased assets to third parties, mainly as a result of unused space in our facilities. None of our subleases contain extension options. Variable lease payments in our subleases include tax payments that are based on prevailing rates. We account for lease and non-lease components as a single lease component.

Revenue Recognition

Our net sales are derived from the sale of products and services and are adjusted for estimated returns and allowances, which historically have been insignificant. We recognize revenue when the obligations under the terms of a contract with our customers are satisfied; generally, this occurs with the transfer of control of our systems, non-system products or services. In circumstances where control is not transferred until destination or acceptance, we defer revenue recognition until such events occur.

Revenue for established products that have previously satisfied a customer's acceptance requirements is generally recognized upon shipment. In cases where a prior history of customer acceptance cannot be demonstrated or from sales where customer payment dates are not determinable and in the case of new products, revenue and cost of sales are deferred until customer acceptance has been received. Our post-shipment obligations typically include installation and standard warranties. The relative standalone selling price of installation related revenue is recognized in the period the installation is performed. Service revenue is recognized over time as we transfer control to our customer for the related contract or upon completion of the services if they are short-term in nature. Spares, contactor and kit revenue is generally recognized upon shipment.

Certain of our equipment sales have multiple performance obligations. These arrangements involve the delivery or performance of multiple performance obligations, and transfer of control of performance obligations may occur at different points in time or over different periods of time. For arrangements containing multiple performance obligations, the revenue relating to the undelivered performance obligation is deferred using the relative standalone selling price method utilizing estimated sales prices until satisfaction of the deferred performance obligation.

Unsatisfied performance obligations primarily represent contracts for products with future delivery dates. At September 28, 2019, we have $12.2 million of revenue expected to be recognized in the future related to performance obligations that are unsatisfied (or partially unsatisfied) for contracts with original expected durations of over one year. As allowed under ASC 606, we have opted to not disclose unsatisfied performance obligations for contracts with original expected durations of less than one year.

We generally sell our equipment with a product warranty. The product warranty provides assurance to customers that delivered products are as specified in the contract (an "assurance-type warranty"). Therefore, we account for such product warranties under ASC 460, *Guarantees* (ASC 460), and not as a separate performance obligation.

The transaction price reflects our expectations about the consideration we will be entitled to receive from the customer and may include fixed or variable amounts. Fixed consideration primarily includes sales to customers that are known as of the end of the reporting period. Variable consideration includes sales in which the amount of consideration that we will receive is unknown as of the end of a reporting period. Such consideration primarily includes sales made to certain customers with cumulative tier volume discounts offered. Variable consideration arrangements are rare; however, when they occur, we estimate variable consideration as the expected value to which we expect to be entitled. Included in the transaction price estimate are amounts in which it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. Variable consideration that does not meet revenue recognition criteria is deferred.

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Our contracts are typically less than one year in duration and we have elected to use the practical expedient available in ASC 606 to expense cost to obtain contracts as they are incurred because they would be amortized over less than one year.

Accounts receivable represents our unconditional right to receive consideration from our customer. Payments terms do not exceed one year from the invoice date and therefore do not include a significant financing component. To date, there have been no material impairment losses on accounts receivable. There were no material contract assets or contract liabilities recorded on our condensed consolidated balance sheet in any of the periods presented.

On shipments where sales are not recognized, gross profit is generally recorded as deferred profit in our condensed consolidated balance sheet representing the difference between the receivable recorded and the inventory shipped. At September 28, 2019, we had deferred revenue totaling approximately $16.2 million, current deferred profit of $8.0 million and deferred profit expected to be recognized after one year included in noncurrent other accrued liabilities of $5.8 million. At December 29, 2018, we had deferred revenue totaling approximately $10.8 million, current deferred profit of $6.9 million and deferred profit expected to be recognized after one year included in noncurrent other accrued liabilities of $2.0 million.

Net sales of our reportable segments, by type, are as follows *(in thousands):*

	Three Months Ended		Nine Months Ended	
Net Sales (1)	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Systems:				
Semiconductor Test & Inspection	$ 70,654	$ 42,278	$ 226,749	$ 152,846
PCB Test	6,853	N/A	22,232	N/A
Non-systems:				
Semiconductor Test & Inspection	62,166	43,886	180,343	128,285
PCB Test	3,825	N/A	11,994	N/A
Total net sales	$ 143,498	$ 86,164	$ 441,318	$ 281,131

(1) After the acquisition of Xcerra on October 1, 2018 we report in two segments, Semiconductor Test & Inspection and PCB Test. Cohu's historical reported net sales would have been reported in our Semiconductor Test & Inspection segment and have been presented accordingly.

Revenue by geographic area based upon product shipment destination *(in thousands)*:

	Three Months Ended		Nine Months Ended	
Net Sales	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
China	$ 31,076	$ 23,628	$ 87,365	$ 63,011
United States	21,918	11,585	58,427	41,725
Taiwan	20,341	5,916	52,513	11,762
Malaysia	12,991	13,682	47,698	38,539
Philippines	12,330	11,158	38,266	31,620
Rest of the World	44,842	20,195	157,049	94,474
Total net sales	$ 143,498	$ 86,164	$ 441,318	$ 281,131

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A small number of customers historically have been responsible for a significant portion of our net sales. Significant customer concentration information, by reportable segment, is as follows:

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Semiconductor Test & Inspection (1)				
Customers individually accounting for more than 10% of net sales	*	one	one	one
Percentage of net sales	*	11.2%	11.0%	10.8%
PCB Test				
Customers individually accounting for more than 10% of net sales	*	N/A	*	N/A
Percentage of net sales	*	N/A	*	N/A

* No single customer represented more than 10% of consolidated net sales.

(1) After the acquisition of Xcerra on October 1, 2018 we report in two segments, Semiconductor Test & Inspection and PCB Test. Cohu's historical reported net sales would have been reported in our Semiconductor Test & Inspection segment and have been presented accordingly.

Accumulated Other Comprehensive Loss

Our accumulated other comprehensive loss balance totaled approximately $40.3 million and $25.9 million at September 28, 2019 and December 29, 2018, respectively, and was attributed to all non-owner changes in stockholders' equity and consists of, on an after-tax basis where applicable, foreign currency adjustments resulting from the translation of certain of our subsidiary accounts where the functional currency is not the U.S. Dollar and adjustments related to postretirement benefits. Reclassification adjustments from accumulated other comprehensive loss during the first nine months of fiscal 2019 and 2018 were not significant.

Retiree Medical Benefits

We provide post-retirement health benefits to certain retired executives, one director (who is a former executive) and their eligible dependents under a noncontributory plan. These benefits are no longer offered to any other retired Cohu employees. The net periodic benefit cost incurred during the first nine months of fiscal 2019 and 2018 was not significant.

Discontinued Operations

Management has determined that the fixtures services business, that was acquired as part of Xcerra, does not align with Cohu's long-term strategic plan and management is in the process of divesting this portion of the business. As a result, the assets of our fixtures business are considered "held for sale" and the operations of our fixtures business are considered "discontinued operations" as of December 29, 2018. See Note 10, "Discontinued Operations" for additional information. Unless otherwise indicated, all amounts herein relate to continuing operations.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

We adopted *ASU 2016-02, Leases (Topic 842)*, as of December 30, 2018, using the optional transition method which allowed us to record existing leases at adoption and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption rather than in the earliest period presented. We elected the package of practical expedients permitted under the transition guidance within the new standard, which among other things, allows us to carryforward the historical lease classification.

We made an accounting policy election to not record ROU assets and lease liabilities for leases with an initial term of 12 months or less. We recognized those lease payments in our condensed consolidated statements of operations on a straight-line basis over the lease term. We also made an accounting policy election to use the practical expedient allowed in the standard to not separate lease and non-lease components when calculating the ROU asset and lease liability. Related to adoption of the new standard, we have implemented internal controls and a lease accounting technology system to track the ROU asset and lease liability balances and prepare the related footnote disclosures.

Adoption of the new standard resulted in the recording of additional net lease assets and lease liabilities of approximately $30.7 million and $29.9 million, respectively, as of December 30, 2018. We had previously recorded a sale and operating leaseback transaction in accordance with Topic 840 and as a result of the adoption of the new standard, recognized $10.2 million of deferred gain as an adjustment to retained earnings. In addition, we had previously recognized assets and liabilities related to a build-to-suit designation under Topic 840 and as a result of the adoption of the new standard, derecognized assets and liabilities of $0.5 million and $0.6 million, respectively, with the difference recorded as an adjustment to retained earnings. The standard did not materially impact our consolidated net earnings and had no impact on cash flows.

Recently Issued Accounting Pronouncements

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). In May 2019, ASU 2016-13 was subsequently amended by ASU 2019-04, *Codification Improvements to Topic 326, Financial Instruments-Credit Losses* ("ASU 2019-04") and ASU 2019-05, *Financial Instruments-Credit Losses (Topic 326): Targeted Transition Relief* ("ASU 2019-05"). ASU 2016-13, as amended, affects trade receivables, financial assets and certain other instruments that are not measured at fair value through net income. This ASU will replace the currently required incurred loss approach with an expected loss model for instruments measured at amortized cost and is effective for financial statements issued for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. We do not expect the adoption of this guidance to have a material impact on our condensed consolidated financial statements.

In August 2018, the FASB issued ASU 2018-14, *Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans*, which improves defined benefit disclosure requirements by removing disclosures that are not cost beneficial, clarifying disclosures' specific requirements and adding relevant disclosure requirements. This ASU is effective for fiscal years ending after December 15, 2020 and early adoption is permitted. The amendments in this ASU are required to be applied on a retrospective basis to all periods presented. We are currently assessing and have not yet determined the impact that the adoption of ASU 2018-14 will have on our condensed consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, *Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement*, which improves fair value disclosure requirements by removing disclosures that are not cost beneficial, clarifying disclosures' specific requirements and adding relevant disclosure requirements. This ASU is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements, and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. Early adoption is permitted and an entity can choose to early adopt any removed or modified disclosures upon issuance of this ASU and delay adoption of the additional disclosures until their effective date. We are currently assessing and have not yet determined the impact that the adoption of ASU 2018-13 will have on our condensed consolidated financial statements.

2. Business Acquisitions, Goodwill and Purchased Intangible Assets

Xcerra

Pursuant to the Agreement and Plan of Merger (the "Merger Agreement") dated as of May 7, 2018, among Cohu, Xcerra, and Xavier Acquisition Corporation, a Delaware corporation and a wholly owned subsidiary of Cohu ("Merger Sub"), Merger Sub merged with and into Xcerra (the "Merger"), with Xcerra surviving such merger as a wholly owned subsidiary of Cohu. The Merger was effective on October 1, 2018 ("the Effective Time"). At the Effective Time, each share of Xcerra Common Stock issued and outstanding immediately prior to the Effective Time (other than dissenting shares and shares held by Cohu, Merger Sub, Xcerra or any direct or indirect wholly owned subsidiary of Cohu or Xcerra) was converted into the right to receive, in the aggregate for all shares of Xcerra Common Stock, consideration, which totaled approximately $794.4 million as of the Effective Time.

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Cohu financed the Merger, including all related fees and expenses, with the following:

- $160.5 million cash from our combined balance sheets;
- The incurrence of $350.0 million from the Credit Facility, as described below;
- The issuance of 11,776,149 shares of Cohu common stock; and
- The issuance of 529,995 converted RSUs to Xcerra employees, of which $0.8 million of the fair value of the converted RSUs was attributed to pre-merger services.

On October 1, 2018, Cohu entered into a Credit Agreement with Cohu, as borrower, certain of its subsidiaries as guarantor subsidiaries, the financial institutions party(ies) thereto as may from time to time be lenders, and Deutsche Bank AG New York Branch, as administrative agent and collateral agent, providing for a $350.0 million Credit Facility (the "Credit Facility"), and borrowed the full amount. Loans under the Credit Facility amortize in equal quarterly installments of 0.25% of the original principal amount thereof, with the balance payable at maturity. Subject to certain exceptions and thresholds, the Credit Facility will also require mandatory prepayments in connection with (i) excess cash flow, (ii) non-ordinary course asset sales and other dispositions and (iii) the issuance of certain debt obligations, among other things. Cohu has the right to prepay loans under the Credit Agreement in whole or in part at any time, without premium or penalty. Amounts repaid in respect of loans under the Credit Facility may not be reborrowed. All outstanding principal and interest in respect of the Credit Facility must be repaid on or before October 1, 2025. The loans under the Term Loan Facility bear interest, at Cohu's option, at a floating annual rate equal to LIBOR plus a margin of 3.00%. The lender(s) may accelerate the payment terms of the Credit Agreement upon the occurrence of certain events of default as set forth therein, which include: the failure of Cohu to make timely payments of amounts due under the Credit Agreement, the failure of Cohu to adhere to the representations and covenants set forth in the Credit Agreement, the failure to provide notice of any event that causes a material adverse effect or to provide other required notices, upon the event that related collateral agreements become ineffective, upon the event that certain legal judgments are entered against Cohu, the insolvency of Cohu, or upon the change of control of Cohu. Any event that could require us to repay debt prior to its due date could have a material adverse impact on our financial condition and results of operations.

Immediately prior to the Effective Time, each Xcerra RSU that was vested was cancelled and the holder received cash and share consideration for the outstanding shares. Each unvested RSU held by employees of Xcerra were assumed by Cohu and converted into an RSU representing the number of whole shares of Cohu common stock based on a conversion formula resulting in the number of assumed RSUs described above.

The acquisition method of accounting is based on ASC 805, and uses the fair value concepts defined in ASC 820, *Fair Value Measurement* ("ASC 820"). The purchase price allocation described herein contains adjustments made during the post-acquisition measurement period, which were made as a result of obtaining new facts and circumstances related to certain assets acquired and liabilities assumed as of the date of acquisition. The net impact of the measurement period adjustments were offset against goodwill.

The acquisition was nontaxable to Cohu and certain of the assets acquired, including goodwill and intangibles, will not be deductible for tax purposes. The acquired assets and liabilities of Xcerra were recorded at their respective fair values including an amount for goodwill which represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired, and is attributable primarily to expected synergies, economies of scale and the assembled workforce of Xcerra. Goodwill has been allocated to our THG, STG, ISG and PTG operating segments.

ASC 805 requires, among other things, that most assets acquired and liabilities assumed be recognized at their fair values as of the acquisition date. In addition, ASC 805 requires that the consideration transferred be measured at the date the merger is completed at the then-current market price. The market price of the shares of Cohu Common Stock at the Effective Time was $25.10 which was based upon the closing price of shares of Cohu Common Stock on the NASDAQ Global Select Market on Friday, September 28, 2018, the last day of trading prior to the Effective Time.

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ASC 820 defines the term "fair value" and sets forth the valuation requirements for any asset or liability measured at fair value, expands related disclosure requirements and specifies a hierarchy of valuation techniques based on the nature of the inputs used to develop the fair value measurements. Fair value is defined in ASC 820 as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." This is an exit price concept for the valuation of the asset or liability. In addition, market participants are assumed to be buyers and sellers in the principal (or the most advantageous) market for the asset or liability. Fair value measurements for an asset assume the highest and best use by these market participants. As a result of these standards, Cohu may be required to record the fair value of assets which are not intended to be used or sold and/or to value assets at fair values that do not reflect Cohu's intended use of those assets. Many of these fair value measurements can be highly subjective, and it is possible that other professionals, applying reasonable judgment to the same facts and circumstances, could develop and support a range of alternative estimated amounts.

Under ASC 805, acquisition-related transaction costs (e.g., advisory, legal, investment banking and other professional fees) are not included as a component of consideration transferred but are accounted for as expenses in the periods in which such costs are incurred. Total Merger-related transaction costs, that exclude other costs related to employee termination and restructuring, incurred by Cohu were $0.4 million and $5.2 million in the first nine months ended September 28, 2019 and September 29, 2018, respectively.

The table below summarizes the assets acquired and liabilities assumed as of the acquisition date, October 1, 2018, with purchase price allocation adjustments made subsequent to the preliminary purchase price allocation (*in thousands*):

	Fair Value at Acquisition Date	Measurement Period Adjustments*	Adjusted Fair Value
Current assets, including cash received	$ 375,990		$ 375,990
Property, plant and equipment	40,729		40,729
Other assets	2,109	(1,058)	1,051
Intangible assets	321,160		321,160
Goodwill	179,263	1,134	180,397
Total assets acquired	919,251		919,327
Liabilities assumed	(124,821)	(76)	(124,897)
Net assets acquired	$ 794,430		$ 794,430

* Measurement period adjustments made as a result of obtaining new facts and circumstances related to certain assets acquired and liabilities assumed as of the date of acquisition. The net impact of the measurement period adjustments were offset against goodwill.

We recorded a $19.6 million step-up of inventory to its fair value as of the acquisition date.

The allocation of the intangible assets subject to amortization is as follows *(in thousands)*:

	Estimated Fair Value	Weighted Average Useful Life (years)
Developed technology	$ 194,600	7.8
Customer relationships	65,890	10.6
In-process research and development	36,360	indefinite
Product backlog	6,410	0.8
Trademarks and trade names	16,800	11.0
Favorable leases	1,100	5.5
Total intangible assets	$ 321,160	

Acquired intangible assets reported above are being amortized using the straight-line method over their estimated useful lives which approximates the pattern of how the economic benefit is expected to be used. This includes amounts allocated to customer relationships because of anticipated high customer retention rates that are common in the semiconductor capital equipment industry.

The value assigned to developed technology was determined by using the multi-period excess earnings method under the income approach. Developed technology, which comprises products that have reached technological feasibility, includes the products in Xcerra's product line. The revenue estimates used to value the developed technology were based on estimates of relevant market sizes and growth factors, expected trends in technology and the nature and expected timing of new product introductions by Xcerra and competitors. The estimated cash flows were based on revenues for the developed technology net of operating expenses and net of contributory asset charges. The discount rate utilized to discount the net cash flows of the developed technology to present value was based on the risk associated with the respective cash flows taking into consideration the perceived risk of the technology relative to the other acquired assets, the weighted average cost of capital, the internal rate of return, and the weighted average return on assets.

The value assigned to customer relationships was determined by using the with and without method under the income approach, which analyzes the difference in discounted cash flows generated with the customer relationships in place compared to the discounted cash flows generated without the customer relationships in place.

In-process research and development ("IPR&D") represents the estimated fair value assigned to research and development projects acquired in a business combination that have not been completed at the date of acquisition and which have no alternative future use. IPR&D is initially accounted for as an indefinite-lived intangible asset. Once a project reaches technological feasibility amounts capitalized related to the project are reclassified to developed technology and the intangible asset begins to be amortized over its estimated useful life. For the IPR&D, additional research and development will be required to assess technological feasibility.

The value assigned to backlog acquired was estimated based upon the contractual nature of the backlog as of October 1, 2018, using the income approach to discount back to present value the cash flows attributable to the backlog.

The value assigned to trademarks and trade names was estimated using the relief-from-royalty method of the income approach. This approach is based on the assumption that in lieu of ownership, a company would be willing to pay a royalty in order to exploit the related benefits of this intangible asset.

In our estimate of the fair value of Xcerra's net assets, Cohu identified leases that appear to be at both favorable and unfavorable rates compared to current market rates.

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Goodwill and Intangible Assets

Changes in the carrying value of goodwill during the year ended December 29, 2018, and the nine-month period ended September 28, 2019, by segment, were as follows (*in thousands*):

	Semiconductor Test & Inspection (1)	PCB Test	Total
Balance, December 30, 2017	$ 65,613	$ -	$ 65,613
Additions, net	157,661	21,602	179,263
Impact of currency exchange	(2,466)	(283)	(2,749)
Balance, December 29, 2018	220,808	21,319	242,127
Adjustments (2)	2,117	(983)	1,134
Impact of currency exchange	(6,603)	(755)	(7,358)
Balance, September 28, 2019	$ 216,322	$ 19,581	$ 235,903

(1) After the acquisition of Xcerra on October 1, 2018 we report in two segments, Semiconductor Test & Inspection and PCB Test. Prior year amounts would have been reported in our Semiconductor Test & Inspection segment and have been presented accordingly.
(2) Amounts represent adjustments made during the post-acquisition measurement period to the preliminary goodwill from the Xcerra acquisition.

Purchased intangible assets, subject to amortization are as follows (*in thousands*):

	September 28, 2019			December 29, 2018	
	Gross Carrying Amount	Accum. Amort.	Remaining Weighted Average Amort. Period (in years)	Gross Carrying Amount	Accum. Amort.
Developed technology	$ 223,454	$ 42,021	6.8	$ 214,266	$ 21,197
Customer relationships	71,720	12,815	9.5	73,104	7,378
Trade names	22,384	3,339	9.8	22,701	1,807
Backlog	6,279	6,279	0	6,372	4,696
Favorable leases*	-	-	4.6	1,100	62
Covenant not-to-compete	326	90	7.3	314	63
Total intangible assets	$ 324,163	$ 64,544		$ 317,857	$ 35,203

* Favorable leases were reclassified from intangible assets, net to operating lease right of use assets on December 30, 2018 as a result of our adoption of ASU 2016-2, Leases (Topic 842)

The table above excludes $22.9 million and $36.3 million of IPR&D, at September 28, 2019 and December 29, 2018, respectively, which has an indefinite life and is subject to impairment or future amortization as developed technology when the projects are completed. During the nine months ended September 28, 2019, we completed certain projects previously included in IPR&D and transferred $13.2 million to developed technology. Changes in the carrying values of purchased intangible assets presented above are a result of the impact of fluctuation in currency exchange rates.

Amortization expense related to intangible assets was approximately $10.0 million in the third quarter of fiscal 2019 and $30.0 million in the first nine months of fiscal 2019. Amortization expense related to intangible assets was approximately $1.0 million in the third quarter of fiscal 2018 and $3.1 million in the first nine months of fiscal 2018. The increase in amortization expense in the current year is the result of amortization of assets acquired in the Xcerra transaction.

3. Borrowings and Credit Agreements

The following table is a summary of our borrowings as of September 28, 2019 and December 29, 2018 (*in thousands)*:

	September 28, 2019	December 29, 2018 (1)
Bank Term Loan under Credit Agreement	$ 346,500	$ 349,125
Bank Term Loans-Kita	4,042	4,576
Bank Term Loan-Xcerra	1,524	1,839
Bank Term Loan-Rasco	3,720	-
Lines of Credit	3,241	3,115
Total debt	359,027	358,655
Less: financing fees and discount	(7,725)	(8,551)
Less: current portion	(6,382)	(6,676)
Total long-term debt	$ 344,920	$ 343,428

(1) Excludes capital lease obligations, which are included in long-term and short-term debt in our consolidated balance sheet, as they were not material at December 29, 2018.

Credit Agreement

On October 1, 2018, we entered into a Credit Agreement providing for a $350.0 million Credit Facility and borrowed the full amount. Loans under the Credit Facility amortize in equal quarterly installments of 0.25% of the original principal amount, with the balance payable at maturity. All outstanding principal and interest in respect of the Credit Facility must be repaid on or before October 1, 2025. The loans under the Term Loan Facility bear interest, at Cohu's option, at a floating annual rate equal to LIBOR plus a margin of 3.00%. At September 28, 2019, the outstanding loan balance, net of discount and deferred financing costs, was $338.8 million and $2.4 million of the outstanding balance is presented as current installments of long-term debt in our condensed consolidated balance sheets. As of September 28, 2019, the fair value of the debt was $332.2 million. The measurement of the fair value of debt is based on the average of the bid and ask trading quotes as of September 28, 2019 and is considered a Level 2 fair value measurement. See Note 2, "Business Acquisitions, Goodwill and Purchased Intangible Assets" for additional information on the Credit Facility.

Kita Term Loans

As a result of our acquisition of Kita, we assumed term loans from a series of Japanese financial institutions primarily related to the expansion of Kita's facility in Osaka, Japan. The loans are collateralized by the facility and land, carry interest rates ranging from 0.05% to 0.44%, and expire at various dates through 2034. At September 28, 2019, the outstanding loan balance was $4.0 million and $0.5 million of the outstanding balance is presented as current installments of long-term debt in our consolidated balance sheets. The fair value of the debt approximates the carrying value at September 28, 2019.

The term loans are denominated in Japanese Yen and, as a result, amounts disclosed herein will fluctuate because of changes in currency exchange rates.

Xcerra Term Loan

As a result of our acquisition of Xcerra, we assumed a term loan related to the purchase of Xcerra's facility in Rosenheim, Germany. The loan is payable over 10 years at an annual interest rate of 2.35%. Principal plus accrued interest is due quarterly over the duration of the term loan ending in March 2024. At September 28, 2019, the outstanding loan balance was $1.5 million and $0.3 million of the outstanding balance is presented as current installments of long-term debt in our consolidated balance sheets. The fair value of the debt approximates the carrying value at September 28, 2019.

The term loan is denominated in Euros and, as a result, amounts disclosed herein will fluctuate because of changes in currency exchange rates.

Cohu, Inc.
Notes to Unaudited Condensed Consolidated Financial Statements
September 28, 2019

Rasco Term Loan

On July 26, 2019, our wholly owned subsidiary Rasco GmbH entered into a term loan agreement with a financial institution in Germany that provided €3.4 million (Euro) that is being used to finance the expansion of our facility in Kolbermoor, Germany. The facility expansion project will allow us to combine the operations of multiple subsidiaries in one location as part of our strategic restructuring program. The loan is secured by the land and the existing building on the site. The loan is payable over 10 years at an annual interest rate of 0.8%. Principal repayments will be made over 8 years starting at the end of 2021. Only interest will be due each quarter starting in September 2019 and principal plus accrued interest will be due each quarter starting at the end of December, 2021. At September 28, 2019, the outstanding loan balance was $3.7 million with none of the outstanding balance being presented as current installments of long-term debt in our consolidated balance sheets based on contractual due dates. The term loan is denominated in Euros and, as a result, amounts disclosed herein will fluctuate because of changes in currency exchange rates. The fair value of the debt approximates the carrying value at September 28, 2019.

Lines of Credit

As a result of our acquisition of Kita, we assumed a series of revolving credit facilities with various financial institutions in Japan. The credit facilities renew monthly and provide Kita with access to working capital totaling up to $8.9 million. At September 28, 2019, total borrowings outstanding under the revolving lines of credit were $3.3 million. As these credit facility agreements renew monthly, they have been included in short-term borrowings in our condensed consolidated balance sheet.

The revolving lines of credit are denominated in Japanese Yen and, as a result, amounts disclosed herein will fluctuate because of changes in currency exchange rates.

Our wholly owned Ismeca subsidiary has one available line of credit which provides it with borrowings of up to a total of 2.0 million Swiss Francs. At September 28, 2019 and December 29, 2018 no amounts were outstanding under this line of credit.

4. Restructuring Charges

Subsequent to the acquisition of Xcerra on October 1st, during the fourth quarter of 2018, we began a strategic restructuring program designed to reposition our organization and improve our cost structure as part of our targeted integration plan regarding the recently acquired Xcerra ("Integration Program"). See Note 2, "Business Acquisitions, Goodwill and Purchased Intangible Assets" for additional information regarding the acquisition of Xcerra. As part of the Integration Program we will consolidate our global handler and contactor manufacturing operations and expect to close our manufacturing operations in Penang, Malaysia and Fontana, California by the end of calendar year 2019. Relating to the facility consolidation actions, we notified certain impacted employees of a reduction in force program. In the second quarter of 2019, we entered into a social plan ("Plan") with the German labor organization representing certain of the employees of our wholly owned subsidiary, Multitest elektronische Systeme GmbH, as part of our Integration Program. The Plan will reduce headcount, enable us to consolidate the facilities of our multiple operations located near Rosenheim, Germany, as well as transition certain manufacturing to other lower cost regions. The facility consolidation and reduction in force programs are being implemented as part of a comprehensive review of our operations and are intended to streamline and reduce our operating cost structure and capitalize on acquisition synergies.

As a result of the activities described above, we recognized total pretax charges of $10.7 million for the first nine months ended September 28, 2019, that are within the scope of ASC 420, *Exit or Disposal Cost Obligations* ("ASC 420"). All costs of the Integration Program were, and are expected to be, incurred by our Semiconductor Test & Inspection segment.

Costs associated with restructuring activities are presented in our condensed consolidated statements of operations as restructuring charges, except for certain costs associated with inventory charges related to the decision to end manufacturing of certain of Xcerra's semiconductor test handler products, which are classified within cost of sales. Other restructuring costs include expenses for professional fees associated with employee severance and impairments of fixed assets.

The following table summarizes the activity within the restructuring related accounts for the Integration Program during the three months ended September 28, 2019 *(in thousands)*:

	Severance and Other Payroll	Other Exit Costs	Total
Balance, December 29, 2018	$ 4,026	$ -	$ 4,026
Costs accrued	10,167	553	10,720
Amounts paid or charged	(9,251)	(553)	(9,804)
Impact of currency exchange	(137)	-	(137)
Balance, September 28, 2019	$ 4,805	$ -	$ 4,805

At September 28, 2019, our total accrual for restructuring related items is reflected within current liabilities of our condensed consolidated balance sheets as these amounts are expected to be paid out within a year. The estimated costs associated with the employee severance and facility consolidation actions will be paid predominantly in cash, with the exception of the amortization of leasehold improvements which is non-cash.

5. Financial Instruments Measured at Fair Value

Our cash, cash equivalents, and short-term investments consisted primarily of cash and other investment grade securities. We do not hold investment securities for trading purposes. All short-term investments are classified as available-for-sale and recorded at fair value. Investment securities are exposed to market risk due to changes in interest rates and credit risk and we monitor credit risk and attempt to mitigate exposure by making high-quality investments and through investment diversification.

Gains and losses on investments are calculated using the specific-identification method and are recognized during the period in which the investment is sold or when an investment experiences an other-than-temporary decline in value. Factors that could indicate an impairment exists include, but are not limited to: earnings performance, changes in credit rating or adverse changes in the regulatory or economic environment of the asset. Gross realized gains and losses on sales of short-term investments are included in interest income. Realized gains and losses for the periods presented were not significant.

Investments that we have classified as short-term, by security type, are as follows *(in thousands)*:

	September 28, 2019			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses (1)	Estimated Fair Value
Foreign government security	$ 573	$ -	$ -	$ 573

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses (1)	Estimated Fair Value
Foreign government security	$ 560	$ -	$ -	$ 560

(1) As of September 28, 2019 and December 29, 2018, there were no investments in our portfolio in a loss position.

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September 28, 2019

Effective maturities of short-term investments are as follows *(in thousands)*:

	September 28, 2019		December 29, 2018	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Due after one year through three years	$ 573	$ 573	$ 560	$ 560

Accounting standards pertaining to fair value measurements establish a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value. These tiers include: Level 1, defined as observable inputs such as quoted prices in active markets; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions. When available, we use quoted market prices to determine the fair value of our investments, and they are included in Level 1. When quoted market prices are unobservable, we use quotes from independent pricing vendors based on recent trading activity and other relevant information, and they are included in Level 2.

The following table summarizes, by major security type, our financial instruments that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy *(in thousands)*:

	Fair value measurements at September 28, 2019 using:			
	Level 1	Level 2	Level 3	Total estimated fair value
Cash	$ 132,065	$ -	$ -	$ 132,065
Money market funds	-	13,029	-	13,029
Foreign government security	-	573	-	573
	$ 132,065	$ 13,602	$ -	$ 145,667

	Fair value measurements at December 29, 2018 using:			
	Level 1	Level 2	Level 3	Total estimated fair value
Cash	$ 144,696	$ -	$ -	$ 144,696
Money market funds	-	19,764	-	19,764
Foreign government security	-	560	-	560
	$ 144,696	$ 20,324	$ -	$ 165,020

6. Employee Stock Benefit Plans

Our 2005 Equity Incentive Plan (the "2005 Plan") is a broad-based, long-term retention program intended to attract, motivate, and retain talented employees as well as align stockholder and employee interests. Awards that may be granted under the program include, but are not limited to, non-qualified and incentive stock options, restricted stock units, and performance stock units. We settle employee stock option exercises, employee stock purchase plan purchases, and the vesting of restricted stock units, and performance stock units with newly issued common shares. At September 28, 2019, there were 2,507,028 shares available for future equity grants under the 2005 Plan.

Stock Options

Stock options may be granted to employees, consultants and non-employee directors to purchase a fixed number of shares of our common stock. The exercise prices of options granted are at least equal to the fair market value of our common stock on the dates of grant and options vest and become exercisable in annual increments that range from one to four years from the date of grant. Stock options granted under the 2005 Plan have a maximum contractual term of ten years. In the first nine months of fiscal 2019 we did not grant any stock options and we issued 36,650 shares of our common stock on the exercise of options that were granted previously.

At September 28, 2019, we had 368,276 stock options exercisable and outstanding. These options had a weighted-average exercise price of $10.34 per share, an aggregate intrinsic value of approximately $1.2 million and the weighted average remaining contractual term was approximately 3.0 years.

Restricted Stock Units

We grant restricted stock units ("RSUs") to certain employees, consultants and directors. RSUs vest in annual increments that range from one to four years from the date of grant. Prior to vesting, RSUs do not have dividend equivalent rights, do not have voting rights and the shares underlying the RSUs are not considered issued and outstanding. New shares of our common stock will be issued on the date the RSUs vest net of the minimum statutory tax withholding requirements to be paid by us on behalf of our employees. As a result, the actual number of shares issued will be fewer than the actual number of RSUs outstanding at September 28, 2019.

In the first nine months of fiscal 2019 we awarded 670,737 RSUs and we issued 560,795 shares of our common stock on vesting of previously granted awards. At September 28, 2019, we had 1,331,427 RSUs outstanding with an aggregate intrinsic value of approximately $17.8 million and the weighted average remaining vesting period was approximately 1.4 years.

Performance Stock Units

We also grant performance stock units ("PSUs") to senior executives as a part of our long-term equity compensation program. The number of shares of common stock that will ultimately be issued to settle PSUs granted in 2019, 2018 and 2017 ranges from 25% to 200% of the number granted and is determined based on certain performance criteria over a three-year measurement period. The performance criteria for the PSUs are based on a combination of our annualized Total Shareholder Return ("TSR") for the performance period and the relative performance of our TSR compared with the annualized TSR of certain peer companies for the performance period. PSUs granted in 2019, 2018 and 2017 vest 100% on the third anniversary of their grant, assuming achievement of the applicable performance criteria.

We estimated the fair value of the PSUs using a Monte Carlo simulation model on the date of grant. Compensation expense is recognized ratably over the derived service period. New shares of our common stock will be issued on the date the PSUs vest net of the minimum statutory tax withholding requirements to be paid by us on behalf of our employees. As a result, the actual number of shares issued will be fewer than the actual number outstanding at September 28, 2019.

In the first nine months of fiscal 2019, we awarded 167,226 PSUs and we issued 35,696 shares of our common stock on vesting of previously granted awards. At September 28, 2019, we had 364,194 PSUs outstanding with an aggregate intrinsic value of approximately $4.9 million and the weighted average remaining vesting period was approximately 1.6 years.

Employee Stock Purchase Plan

The Cohu, Inc. 1997 Employee Stock Purchase Plan ("the ESPP") provides for the issuance of shares of our common stock. Under the ESPP, eligible employees may purchase shares of Cohu common stock through payroll deductions at a price equal to 85 percent of the lower of the fair market value of Cohu common stock at the beginning or end of each 6-month purchase period, subject to certain limits. During the first nine months of fiscal 2019, 63,998 shares of our common stock were sold to our employees under the ESPP leaving 1,034,612 shares available for future issuance.

7. Income Taxes

Ordinarily, interim tax provisions are calculated using the estimated effective tax rate ("ETR") expected to be applicable for the full fiscal year. However, when a reliable estimate of the annual ETR cannot be made, the actual ETR for the year-to-date period may be the best estimate of the annual ETR. For the three and nine months ended September 28, 2019, we used the actual year-to-date ETR in computing our tax provision, as a reliable estimate of the 2019 annual ETR cannot be made, since relatively small changes in our projected income produce a significant variation in our ETR. In computing the tax provision for the three and nine months ended September 29, 2018, we used the ETR expected to be applicable for the full fiscal year. The ETR on income or loss from continuing operations for the three months ended September 28, 2019 and September 29, 2018 was (13.9)% and 32.4%, respectively, and (0.3)% and 21.9% for the nine months ended September 28, 2019 and September 29, 2018, respectively. The tax provision on income or loss from continuing operations in 2019 and 2018 differs from the U.S. federal statutory rate primarily due to the lack of a tax benefit on our domestic losses as a result of our valuation allowance on deferred tax assets, foreign income taxed at different rates, changes in our deferred tax asset valuation allowance, withholding tax, state taxes and interest related to unrecognized tax benefits.

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Our German subsidiary's income tax returns for 2012 to 2016 are currently under routine examination by tax authorities in Germany. We believe our financial statement accruals for income taxes are appropriate.

There was no material change to our unrecognized tax benefits and related accrued interest and penalties during the three and nine-month periods ended September 28, 2019 and September 29, 2018.

8. Segment and Geographic Information

The summary below presents our current segments, Semiconductor Test & Inspection and PCB Test, for the three- and nine-month periods ended September 28, 2019 and September 29, 2018.

Prior to the acquisition of Xcerra on October 1, 2018, historical amounts of Cohu's semiconductor equipment segment would have been reported in our Semiconductor Test & Inspection segment and have been presented accordingly.

Financial information by reportable segment is as follows *(in thousands)*:

	Three Months Ended		Nine Months Ended	
Net sales by segment:	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Semiconductor Test & Inspection	$ 132,820	$ 86,164	$ 407,092	$ 281,131
PCB Test	10,678	-	34,226	-
Total consolidated net sales for reportable segments	$ 143,498	$ 86,164	$ 441,318	$ 281,131
Segment profit (loss) before tax:				
Semiconductor Test & Inspection	$ (2,929)	$ 9,941	$ (32,373)	$ 41,073
PCB Test	612	-	2,371	-
Profit (loss) for reportable segments	(2,317)	9,941	(30,002)	41,073
Other unallocated amounts:				
Corporate expenses	(2,076)	(3,162)	(7,365)	(10,483)
Interest expense	(5,000)	(11)	(15,789)	(33)
Interest income	190	337	603	913
Income (loss) from continuing operations before taxes	$ (9,203)	$ 7,105	$ (52,553)	$ 31,470

The following table summarizes our total assets by reportable business segment *(in thousands)*:

	September 28, 2019	December 29, 2018
Semiconductor Test & Inspection	$ 994,248	$ 1,038,053
PCB Test	57,739	57,762
Total assets for reportable segments	1,051,987	1,095,815
Corporate, principally cash and investments	15,759	34,367
Discontinued operations	3,863	3,820
Total consolidated assets	$ 1,071,609	$ 1,134,002

For revenues by geography and information on customer concentration, see Note 1, "Summary of Significant Accounting Policies".

9. Leases

We lease certain of our facilities, equipment and vehicles under non-cancelable operating and finance leases. Leases with initial terms with 12 months or less are not recorded on the condensed consolidated balance sheet, but we recognized those lease payments in the condensed consolidated statements of operations on a straight-line basis over the lease term. Lease and non-lease components are included in the calculation of the ROU asset and lease liabilities.

Our leases have remaining lease terms of 1 year to 38 years, some of which include one or more options to extend the leases for up to 25 years. Our lease term includes renewal terms when we are reasonably certain we will exercise the renewal options.

We sublease certain leased assets to third parties, mainly as a result of unused space in our facilities. Supplemental balance sheet information related to leases was as follows:

(in thousands)	Classification	September 28, 2019
Assets		
Operating lease assets	Operating lease right-of-use assets	$ 34,096
Finance lease assets	Property, plant and equipment, net [(1)]	2,482
Total lease assets		$ 36,578
Liabilities		
Current		
Operating	Other accrued liabilities	$ 5,358
Finance	Other accrued liabilities	2,528
Noncurrent		
Operating	Long-term lease liabilities	29,397
Total lease liabilities		$ 37,283
Weighted-average remaining lease term (years)		
Operating leases		7.9
Finance leases		0.8
Weighted-average discount rate		
Operating leases		6.3%
Finance leases		4.5%

(1) Finance lease assets are recorded net of accumulated amortization of $0.1 million.

The components of lease expense were as follows:

(in thousands)	Three Months Ended September 28, 2019	Nine Months Ended September 28, 2019
Operating leases [(1)]	$ 2,142	$ 6,381
Variable lease expense	570	1,765
Short-term operating leases	80	224
Finance leases		
Amortization of leased assets	20	82
Interest on lease liabilities	29	117
Sublease income	(31)	(101)
Net lease cost	$ 2,810	$ 8,468

(1) Operating lease cost excludes impairment expense of $0.2 million related to the write-down of the Fontana facility right-of-use asset.

Cohu, Inc.
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September 28, 2019

Future minimum lease payments at September 28, 2019, are as follows:

(in thousands)	Operating leases (1)	Finance leases	Total
2019	$ 1,709	$ 37	$ 1,746
2020	7,133	2,576	9,709
2021	5,816	-	5,816
2022	5,369	-	5,369
2023	4,940	-	4,940
Thereafter	21,007	-	21,007
Total lease payments	45,974	2,613	48,587
Less: Interest	(11,219)	(85)	(11,304)
Present value of lease liabilities	$ 34,755	$ 2,528	$ 37,283

(1) Excludes sublease income of $0.1 million in both 2020 and 2021.

Supplemental cash flow information related to leases was as follows:

(in thousands)	Nine Months Ended September 28, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 5,153
Operating cash flows from finance leases	$ 109
Financing cash flows from finance leases	$ 25
Leased assets obtained in exchange for new operating lease liabilities	$ 39,815

10. Discontinued Operations

On October 1, 2018, we acquired a fixtures services business as part of Xcerra. In the fourth quarter of 2018, our management determined that this business did not align with our core business and was not a strategic fit within our organization. As a result, the fixtures services business has been marketed for sale since we acquired Xcerra on October 1, 2018. We expect to complete the sale of this business within 12 months and it qualifies to be reported as discontinued operations. For financial statement purposes, the results of operations for this business have been segregated from those of continuing operations and are presented in our condensed consolidated financial statements as discontinued operations.

Cohu, Inc.
Notes to Unaudited Condensed Consolidated Financial Statements
September 28, 2019

Balance sheet information for our fixtures services business presented as discontinued operations is summarized as follows *(in thousands)*:

	September 28, 2019	December 29, 2018
Assets:		
Cash and cash equivalents	$ 1,176	$ 461
Accounts receivable, net	1,466	1,718
Inventories	1,074	1,388
Other current assets	17	174
Total current assets	3,733	3,741
Property, plant and equipment, net	40	66
Other noncurrent assets	90	13
Total assets	$ 3,863	$ 3,820
Liabilities:		
Other accrued current liabilities	$ 564	$ 518
Total current liabilities	564	518
Noncurrent liabilities	34	-
Total liabilities	$ 598	$ 518

Operating results of our discontinued segment are summarized as follows *(in thousands)*:

	Three Months Ended September 28, 2019	Nine Months Ended September 28, 2019
Net sales	$ 1,720	$ 5,020
Operating income before income taxes	$ 173	$ 400
Income tax provision	19	58
Income, net of tax	$ 154	$ 342

11. Contingencies

From time-to-time we are involved in various legal proceedings, examinations by various tax authorities and claims that have arisen in the ordinary course of our business. The outcome of any litigation is inherently uncertain. While there can be no assurance, we do not believe at the present time that the resolution of these matters will have a material adverse effect on our assets, financial position or results of operations.

12. Guarantees

Product Warranty

Our products are generally sold with warranty periods that range from 12 to 36 months following sale or acceptance. The product warranty promises customers that delivered products are as specified in the contract (an “assurance-type warranty”). Therefore, we account for such product warranties under ASC 460, and not as a separate performance obligation. Parts and labor are covered under the terms of the warranty agreement. The warranty provision is based on historical and projected experience by product and configuration.

Changes in accrued warranty were as follows (*in thousands*):

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Balance at beginning of period	$ 6,852	$ 4,948	$ 8,014	$ 4,848
Warranty expense accruals	1,137	1,600	4,695	4,988
Warranty payments	(2,071)	(1,946)	(6,791)	(5,234)
Balance at end of period	$ 5,918	$ 4,602	$ 5,918	$ 4,602

Accrued warranty amounts expected to be incurred after one year are included in noncurrent other accrued liabilities in the condensed consolidated balance sheet. These amounts total $0.2 million at both September 28, 2019 and December 29, 2018.

Cohu, Inc.
Management's Discussion and Analysis of Financial Condition and Results of Operations
September 28, 2019

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

This Form 10-Q contains certain forward-looking statements including expectations of market conditions, challenges and plans, within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and is subject to the Safe Harbor provisions created by that statute. Such forward-looking statements are based on management's current expectations and beliefs, including estimates and projections about our business and include, but are not limited to, statements concerning financial position, business strategy, and plans or objectives for future operations. Forward-looking statements are not guarantees of future performance, and are subject to certain risks, uncertainties, and assumptions that are difficult to predict and may cause actual results to differ materially from management's current expectations. Such risks and uncertainties include those set forth in this Quarterly Report on Form 10-Q and our 2018 Annual Report on Form 10-K under the heading "Item 1A. Risk Factors". The forward-looking statements in this report speak only as of the time they are made, and do not necessarily reflect management's outlook at any other point in time. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events, or for any other reason, however, readers should carefully review the risk factors set forth in other reports or documents we file from time to time with the SEC after the date of this Quarterly Report.

OVERVIEW

Cohu is a leading supplier of semiconductor test and inspection handlers, micro-electromechanical system (MEMS) test modules, test contactors and thermal subsystems, semiconductor automated test equipment and bare-board printed circuit board test systems used by global semiconductor and electronics manufacturers and test subcontractors. We offer a wide range of products and services and our revenue from capital equipment products is driven by the capital expenditure budgets and spending patterns of our customers, who often delay or accelerate purchases in reaction to variations in their business. The level of capital expenditures by these companies depends on the current and anticipated market demand for semiconductor devices and PCBs and the products that incorporate them. Our consumable products are driven by the number of semiconductor devices and printed circuit boards that are tested and by the continuous introduction of new products and new technologies by our customers. As a result, our consumable products provide a more stable recurring source of revenue and generally do not have the same degree of cyclicality as our capital equipment products.

For the nine months ended September 28, 2019, our net sales increased 57% year-over-year to $441.3 million. The increase in our net sales was driven by the acquisition of Xcerra Corporation, completed on October 1, 2018, and our results in the first nine months of 2019 included sales of $238.9 million contributed by this acquired business. Current market weakness is being driven by lower smartphone unit shipments, weaker automotive semiconductor demand and ongoing softness in the China market that is in part related to trade tensions between the U.S. and China and the impact of export restrictions to Huawei on our customers.

The global semiconductor market grew in 2018 reaching a peak in the second quarter with business conditions softening during the second half of 2018. This weakness has continued through the first nine months of 2019 and customer test cell utilization remains below levels that have historically triggered the need for additional capacity. The current near-term outlook for the semiconductor industry for the remainder of 2019 assumes slower electronic equipment demand and slower growth for the global economy. Despite the near-term weakness, we remain optimistic about the long-term prospects for our business due to increasing ubiquity of semiconductors, the future rollout of 5G networks, diminishing impact of parallel test, increasing semiconductor complexity, increasing quality demands from semiconductor customers, and continued proliferation of electronics in a variety of products across the automotive, mobility and industrial markets. We are focused on growing our market share with semiconductor and electronics manufacturers and test subcontractors.

Application of Critical Accounting Estimates and Policies

Our discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. We base our estimates on historical experience, forecasts and on various other assumptions that are believed to be reasonable under the circumstances, however actual results may differ from those estimates under different assumptions or conditions. The methods, estimates and judgments we use in applying our accounting policies have a significant impact on the results we report in our financial statements. Some of our accounting policies require us to make difficult and subjective judgments, often as a result of the need to make estimates of matters that are inherently uncertain.

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Our critical accounting estimates that we believe are the most important to an investor's understanding of our financial results and condition and that require complex management judgment include:

- revenue recognition, including the deferral of revenue on sales to customers, which impacts our results of operations;
- estimation of valuation allowances and accrued liabilities, specifically product warranty, inventory reserves and allowance for bad debts, which impact gross margin or operating expenses;
- the recognition and measurement of current and deferred income tax assets and liabilities, unrecognized tax benefits and the valuation allowance on deferred tax assets, which impact our tax provision;
- the assessment of recoverability of long-lived assets including goodwill and other intangible assets, which primarily impacts gross margin or operating expenses if we are required to record impairments of assets or accelerate their depreciation or amortization; and
- the valuation and recognition of share-based compensation, which impacts gross margin, research and development expense, and selling, general and administrative expense.

Below, we discuss these policies further, as well as the estimates and judgments involved. We also have other policies that we consider key accounting policies; however, these policies typically do not require us to make estimates or judgments that are difficult or subjective.

Revenue Recognition: Our net sales are derived from the sale of products and services and are adjusted for estimated returns and allowances, which historically have been insignificant. We recognize revenue when the obligations under the terms of a contract with our customers are satisfied; generally, this occurs with the transfer of control of our systems, non-system products or services. In circumstances where control is not transferred until destination or acceptance, we defer revenue recognition until such events occur. Revenue for established products that have previously satisfied a customer's acceptance requirements is generally recognized upon shipment. In cases where a prior history of customer acceptance cannot be demonstrated or from sales where customer payment dates are not determinable and in the case of new products, revenue and cost of sales are deferred until customer acceptance has been received. Our post-shipment obligations typically include installation and standard warranties. The estimated fair value of installation related revenue is recognized in the period the installation is performed. Service revenue is recognized over time as the transfer of control is completed for the related contract or upon completion of the services if they are short-term in nature. Spares, contactor and kit revenue is generally recognized upon shipment. Certain of our equipment sales have multiple performance obligations. These arrangements involve the delivery or performance of multiple performance obligations, and transfer of control of performance obligations may occur at different points in time or over different periods of time. For arrangements containing multiple performance obligations, the revenue relating to the undelivered performance obligation is deferred using the relative standalone selling price method utilizing estimated sales prices until satisfaction of the deferred performance obligation. Unsatisfied performance obligations primarily represent contracts for products with future delivery dates. At September 28, 2019, we have $12.2 million of revenue expected to be recognized in the future related to performance obligations that are unsatisfied (or partially unsatisfied) for contracts with original expected durations of over one year. As allowed under ASC 606, we have opted to not disclose unsatisfied performance obligations as these contracts have original expected durations of less than one year. We generally sell our equipment with a product warranty. The product warranty provides assurance to customers that delivered products are as specified in the contract (an "assurance-type warranty"). Therefore, we account for such product warranties under ASC 460, Guarantees (ASC 460), and not as a separate performance obligation. The transaction price reflects our expectations about the consideration we will be entitled to receive from the customer and may include fixed or variable amounts. Fixed consideration primarily includes sales to customers that are known as of the end of the reporting period. Variable consideration includes sales in which the amount of consideration that we will receive is unknown as of the end of a reporting period. Such consideration primarily includes sales made to certain customers with cumulative tier volume discounts offered. Variable consideration arrangements are rare; however, when they occur, we estimate variable consideration as the expected value to which we expect to be entitled. Included in the transaction price estimate are amounts in which it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. The estimate is based on information available for projected future sales. Variable consideration that does not meet revenue recognition criteria is deferred. Accounts receivable represents our unconditional right to receive consideration from our customer. Payments terms do not exceed one year from the invoice date and therefore do not include a significant financing component. To date, there have been no material impairment losses on accounts receivable. There were no material contract assets or contract liabilities recorded on the condensed consolidated balance sheet in any of the periods presented. On shipments where sales are not recognized, gross profit is generally recorded as deferred profit in our consolidated balance sheet representing the difference between the receivable recorded and the inventory shipped.

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Accounts Receivable: We maintain an allowance for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. If the financial condition of our customers deteriorates, resulting in an impairment of their ability to make payments, additional allowances may be required.

Inventory: The valuation of inventory requires us to estimate obsolete or excess inventory as well as inventory that is not of saleable quality. The determination of obsolete or excess inventory requires us to estimate the future demand for our products. The demand forecast is a direct input in the development of our short-term manufacturing plans. We record valuation reserves on our inventory for estimated excess and obsolete inventory and lower of cost or net realizable value concerns equal to the difference between the cost of inventory and the estimated realizable value based upon assumptions about future product demand, market conditions and product selling prices. If future product demand, market conditions or product selling prices are less than those projected by management or if continued modifications to products are required to meet specifications or other customer requirements, increases to inventory reserves may be required which would have a negative impact on our gross margin.

Income Taxes: We estimate our liability for income taxes based on the various jurisdictions where we conduct business. This requires us to estimate our (i) current taxes; (ii) temporary differences that result from differing treatment of certain items for tax and accounting purposes and (iii) unrecognized tax benefits. Temporary differences result in deferred tax assets and liabilities that are reflected in the consolidated balance sheet. The deferred tax assets are reduced by a valuation allowance if, based upon all available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. Establishing, reducing or increasing a valuation allowance in an accounting period generally results in an increase or decrease in tax expense in the statement of operations. We must make significant judgments to determine the provision for income taxes, deferred tax assets and liabilities, unrecognized tax benefits and any valuation allowance to be recorded against deferred tax assets. Our gross deferred tax asset balance as of September 28, 2019, was approximately $132.8 million, with a valuation allowance of approximately $93.5 million. Our deferred tax assets consist primarily of reserves and accruals that are not yet deductible for tax and tax credit and net operating loss carryforwards.

Segment Information: We applied the provisions of ASC Topic 280, *Segment Reporting*, ("ASC 280"), which sets forth a management approach to segment reporting and establishes requirements to report selected segment information quarterly and to report annually entity-wide disclosures about products, major customers and the geographies in which the entity holds material assets and reports revenue. An operating segment is defined as a component that engages in business activities whose operating results are reviewed by the chief operating decision maker and for which discrete financial information is available. After the acquisition of Xcerra on October 1, 2018, we have determined that our four identified operating segments are: Test Handler Group ("THG"), Semiconductor Test Group ("STG"), Interface Solutions Group ("ISG") and PCB Test Group ("PTG"). Our THG, STG and ISG operating segments qualify for aggregation under ASC 280 due to similarities in their customers, their economic characteristics, and the nature of products and services provided. As a result, we report in two segments, Semiconductor Test & Inspection and PCB Test.

Goodwill, Other Intangible Assets and Long-lived Assets: We evaluate goodwill for impairment annually and when an event occurs or circumstances change that indicate that the carrying value may not be recoverable. We test goodwill for impairment by comparing the book value of net assets to the fair value of the reporting units. If the fair value is determined to be less than the book value, an impairment charge is recognized as the amount by which the carrying amount of goodwill exceeds the reporting unit's fair value, not to exceed the carrying amount of goodwill. We estimated the fair values of our reporting units primarily using the income approach valuation methodology that includes the discounted cash flow method, taking into consideration the market approach and certain market multiples as a validation of the values derived using the discounted cash flow methodology. Forecasts of future cash flows are based on our best estimate of future net sales and operating expenses, based primarily on customer forecasts, industry trade organization data and general economic conditions.

We conduct our annual impairment test as of October 1st of each year, and have determined there was no impairment as of October 1, 2018, as we determined that the estimated fair values of our reporting units exceeded their carrying values on that date. Other events and changes in circumstances may also require goodwill to be tested for impairment between annual measurement dates. As of September 28, 2019, we do not believe that circumstances have occurred that indicate impairment of our goodwill is more-likely-than-not. In the event we determine that an interim goodwill impairment review is required, in a future period, the review may result in an impairment charge, which would have a negative impact on our results of operations.

Long-lived assets, other than goodwill, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets might not be recoverable. Conditions that would necessitate an impairment assessment include a significant decline in the observable market value of an asset, a significant change in the extent or manner in which an asset is used, or any other significant adverse change that would indicate that the carrying amount of an asset or group of assets may not be recoverable. For long-lived assets, impairment losses are only recorded if the asset's carrying amount is not recoverable through its undiscounted, probability-weighted future cash flows. We measure the impairment loss based on the difference between the carrying amount and estimated fair value.

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Warranty: We provide for the estimated costs of product warranties in the period sales are recognized. Our warranty obligation estimates are affected by historical product shipment levels, product performance and material and labor costs incurred in correcting product performance problems. Should product performance, material usage or labor repair costs differ from our estimates, revisions to the estimated warranty liability would be required.

Contingencies: We are subject to certain contingencies that arise in the ordinary course of our businesses which require us to assess the likelihood that future events will confirm the existence of a loss or an impairment of an asset. If a loss or asset impairment is probable and the amount of the loss or impairment is reasonably estimable, we accrue a charge to operations in the period such conditions become known.

Share-based Compensation: Share-based compensation expense related to restricted stock unit awards is calculated based on the market price of our common stock on the grant date, reduced by the present value of dividends expected to be paid on our common stock prior to vesting of the restricted stock unit. Share-based compensation on performance stock units with market-based goals is calculated using a Monte Carlo simulation model on the date of the grant. Share-based compensation expense related to stock options is recorded based on the fair value of the award on its grant date, which we estimate using the Black-Scholes valuation model.

Recent Accounting Pronouncements

For a description of accounting changes and recent accounting pronouncements, including the expected dates of adoption and estimated effects, if any, on our consolidated financial statements, see "Recent Accounting Pronouncements", in Note 1 located in Part I, Item 1 of this Form 10-Q.

RESULTS OF OPERATIONS

Recent Transactions Impacting Results of Operations

On October 1, 2018 we completed the acquisition of Xcerra Corporation and the results of its operations have been included in our consolidated financial statements only since that date. Management has determined that the fixtures services business, that was acquired as part of Xcerra, does not align with Cohu's long-term strategic plan and management is in the process of divesting this portion of the business. As a result, the assets of our fixtures business are considered "held for sale" and the operations of our fixtures business are considered "discontinued operations" as of September 28, 2019 and December 29, 2018. Unless otherwise indicated, the discussion below covers the comparative results from continuing operations.

The following table summarizes certain operating data as a percentage of net sales:

	Three Months Ended		Nine Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Net sales	100.0%	100.0%	100.0%	100.0%
Cost of sales	(58.9)%	(59.4)%	(60.2)%	(58.2)%
Gross margin	41.1%	40.6%	39.8%	41.8%
Research and development	(14.3)%	(12.9)%	(14.8)%	(12.1)%
Selling, general and administrative	(23.5)%	(18.5)%	(24.6)%	(18.1)%
Amortization of purchased intangible assets	(6.9)%	(1.2)%	(6.8)%	(1.1)%
Restructuring charges	(0.6)%	-%	(2.4)%	-%
Income (loss) from operations	(4.2)%	8.0%	(8.8)%	10.5%

Third Quarter of Fiscal 2019 Compared to Third Quarter of Fiscal 2018

Net Sales

Our consolidated net sales increased 66.5% to $143.5 million in 2019, compared to $86.2 million in 2018. On October 1, 2018, we completed the acquisition of Xcerra and our net sales for the third fiscal quarter of 2019 include $81.3 million of net sales recognized by this business and is the driver of the increase in our net sales. Excluding the impact of the additional sales from Xcerra, net sales decreased year over year as a result of softer demand for smartphones, weaker automotive semiconductor demand, ongoing softness in the China market that is in part related to trade tensions between the U.S. and China and export restrictions.

Gross Margin (exclusive of amortization of acquisition-related intangible assets described below)

Gross margin consists of net sales less cost of sales. Cost of sales consists primarily of the materials, assembly and test labor and overhead from operations. Our gross margin can fluctuate due to a number of factors, including, but not limited to, the mix and volume of products sold, product support costs, increases to inventory reserves or the sale of previously reserved inventory and utilization of manufacturing capacity. Our gross margin, as a percentage of net sales, was 41.1% in 2019 and 40.6% in 2018. As discussed above certain items which have historically affected gross margin are now being reflected in operating expenses. Previously reported amounts were also adjusted to reflect current period presentation. This resulted in expenses totaling $7.6 million and $0.6 million being reported in amortization of intangibles rather than cost of sales in 2019 and 2018, respectively. Independent of the impact of the financial statement reclassifications gross margin in 2019 was impacted by the acquisition of Xcerra as discussed below.

Our gross margin can be impacted by charges to cost of sales related to excess, obsolete and lower of cost or net realizable value inventory issues. We compute the majority of our excess and obsolete inventory reserve requirements using a one-year inventory usage forecast. During the third quarter of 2019 and 2018, we recorded charges to cost of sales of $1.5 million and $0.7 million for excess and obsolete inventory, respectively. Additionally, as part of the integration and restructuring activities related to Xcerra we recorded $19.1 million of inventory related charges related to the decision to end manufacturing of certain of Xcerra's semiconductor test handler products in the fourth quarter of 2018 which included amounts associated with non-cancelable supplier commitments.

While we believe our reserves for excess and obsolete inventory and lower of cost or net realizable value concerns are adequate to cover known exposures at September 28, 2019, reductions in customer forecasts or continued modifications to products, as a result of our failure to meet specifications or other customer requirements, may result in additional charges to operations that could negatively impact our gross margin in future periods.

Research and Development Expense ("R&D Expense")

R&D expense consists primarily of salaries and related costs of employees engaged in ongoing research, product design and development activities, costs of engineering materials and supplies and professional consulting expenses. R&D expense was $20.5 million in 2019 and $11.1 million in 2018 representing 14.3% and 12.9% of net sales, respectively. The increase in R&D expense in 2019 was primarily associated with the acquisition of Xcerra, which added research and development expenses totaling $10.5 million. R&D expenses unrelated to Xcerra decreased due to cost control initiatives implemented as a result of current business conditions.

Selling, General and Administrative Expense ("SG&A Expense")

SG&A expense consists primarily of salaries and benefit costs of employees, commission expense for independent sales representatives, product promotion and costs of professional services. SG&A expense was $33.7 million or 23.5% of net sales in 2019, compared to $15.9 million or 18.5% in 2018. The increase in SG&A expense in 2019 was primarily associated with the acquisition of Xcerra, which added expenses totaling $20.0 million from its operations. The increase in SG&A as a percentage of sales is primarily a result of application engineering costs associated with Xcerra's semiconductor automated test equipment. As discussed above, certain items which have historically affected SG&A have been reclassified to amortization of purchased intangibles and foreign transaction gain (loss) and other. Previously reported amounts were also adjusted to reflect current year presentation. This resulted in expenses totaling $2.4 million and $0.4 million being reported in amortization of intangibles rather than SG&A in the third quarter of 2019 and 2018, respectively. Additionally, foreign currency transaction gains totaling $1.6 million and losses totaling $0.2 million recognized in the third quarter of 2019 and 2018, respectively, are now reported in foreign transaction gain (loss) and other. SG&A expenses unrelated to Xcerra's operations were lower due to the decrease in business volume.

Amortization of Purchased Intangible Assets

Amortization of purchased intangibles is the process of expensing the cost of an intangible asset acquired through a business combination over the projected life of the asset. As discussed above these amounts were previously recorded in cost of sales and SG&A. Amortization of acquisition-related intangible assets was $10.0 million and $1.0 million in the third quarter of 2019 and 2018, respectively. The increase in expense recorded during the current year was primarily due to additional amortization associated with purchased intangible assets recorded as a result of the acquisition of Xcerra.

See Note 2, “Business Acquisitions, Goodwill and Purchased Intangible Assets” in Part I, Item 1 of this Form 10-Q for additional information with respect to intangible assets.

Restructuring Charges

Subsequent to the acquisition of Xcerra on October 1, 2018, during fourth quarter 2018, we began a strategic restructuring program designed to reposition our organization and improve our cost structure as part of our targeted integration plan regarding Xcerra and recorded restructuring charges, exclusive of the inventory related amounts described above, totaling $0.8 million in the third fiscal quarter of 2019.

See Note 4, “Restructuring Charges” in Part I, Item 1 of this Form 10-Q for additional information with respect to restructuring charges.

Interest Expense and Income

Interest expense was $5.0 million in the third fiscal quarter of 2019 as compared to $11,000 in the corresponding period of 2018. The increase was driven primarily by interest associated with the Term B Loan obtained to finance part of the purchase price of Xcerra.

Interest income was $0.2 million and $0.3 million in the third fiscal quarter of 2019 and 2018, respectively.

Income Taxes

Ordinarily, interim tax provisions are calculated using the estimated effective tax rate (“ETR”) expected to be applicable for the full fiscal year. However, when a reliable estimate of the annual ETR cannot be made, the actual ETR for the year-to-date period may be the best estimate of the annual ETR. For the three months ended September 28, 2019, we used the actual year-to-date ETR in computing our tax provision, as a reliable estimate of the 2019 annual ETR cannot be made, since relatively small changes in our projected income produce a significant variation in our ETR. In computing the tax provision for the three months ended September 29, 2018 we used the ETR expected to be applicable for the full fiscal year. The ETR on income or loss from continuing operations for the three months ended September 28, 2019 and September 29, 2018, was (13.9)% and 32.4%, respectively. The tax provision on income or loss from continuing operations in 2019 and 2018 differs from the U.S. federal statutory rate primarily due to the lack of a tax benefit on our domestic losses as a result of our valuation allowance on deferred tax assets, foreign income taxed at different rates, changes in our deferred tax asset valuation allowance, withholding tax, state taxes and interest related to unrecognized tax benefits.

Our German subsidiary’s income tax returns for 2012 to 2016 are currently under routine examination by tax authorities in Germany. We believe our financial statement accruals for income taxes are appropriate.

Income from Continuing Operations and Net Income

As a result of the factors set forth above, both loss from continuing operations and net loss was $10.5 million in 2019. Both income from continuing operations and net income was $4.8 million in 2018.

First Nine Months of Fiscal 2019 Compared to First Nine Months of Fiscal 2018

Net Sales

Our consolidated net sales increased 57.0% to $441.3 million in 2019, compared to $281.1 million in 2018. On October 1, 2018, we completed the acquisition of Xcerra and our net sales for the first nine months of 2019 include $238.9 million of net sales recognized by this business and is the driver of the increase in our net sales. Excluding the impact of the additional sales from Xcerra, net sales decreased year over year as a result of softer demand for smartphones, weaker automotive semiconductor demand, ongoing softness in the China market that is in part related to trade tensions between the U.S. and China and export restrictions.

Gross Margin (exclusive of amortization of acquisition-related intangible assets described below)

Our gross margin, as a percentage of net sales, decreased to 39.8% in 2019 from 41.8% in 2018. Our gross margin can fluctuate due to a number of factors, including, but not limited to, the mix of products sold, product support costs, inventory reserve adjustments, and utilization of manufacturing capacity. As discussed above certain items which have historically affected gross margin are now being reflected in operating expenses. Previously reported amounts were also adjusted to reflect current period presentation. This resulted in expenses totaling $22.9 million and $2.0 million being reported in amortization of intangibles rather than cost of sales in 2019 and 2018, respectively. Independent of the impact of the financial statement reclassifications gross margin in 2019 was impacted by the acquisition of Xcerra as discussed below.

Our cost of sales was impacted by the amortization of inventory step-up related to fair value adjustments to inventory acquired in business combinations. During the first nine months of 2019, we amortized $6.0 million of inventory step-up related to our acquisition of Xcerra. There was no inventory step-up amortized in the corresponding period of 2018.

In the first nine months of fiscal 2019 and 2018 we recorded charges to cost of sales of approximately $3.2 million and $1.3 million for excess and obsolete inventory, respectively. Additionally, as part of the integration and restructuring activities related to Xcerra we recorded $19.1 million of inventory related charges related to the decision to end manufacturing of certain of Xcerra's semiconductor test handler products in the fourth quarter of 2018 which included amounts associated with non-cancelable supplier commitments. While we believe our reserves for excess and obsolete inventory and lower of cost or market concerns are adequate to cover known exposures at September 28, 2019, reductions in customer forecasts or continued modifications to products, as a result of our failure to meet specifications or other customer requirements, may result in additional charges to operations that could negatively impact our results of operations and gross margin in future periods.

R&D Expense

R&D expense was $65.3 million or 14.8% of net sales in 2019, compared to $33.9 million or 12.1% in 2018. The increase in R&D expense in 2019 was primarily associated with the acquisition of Xcerra, which added research and development expenses totaling $34.1 million. R&D expenses unrelated to Xcerra decreased due to cost control initiatives implemented as a result of current business conditions.

SG&A Expense

SG&A expense was $108.4 million or 24.6% of net sales in 2019, compared to $51.0 million or 18.1% in 2018. The increase in SG&A expense in 2019 was primarily associated with the acquisition of Xcerra, which added expenses totaling $66.0 million from its operations. The increase in SG&A as a percentage of sales is primarily a result of application engineering costs associated with Xcerra's semiconductor automated test equipment. As discussed above, certain items which have historically affected SG&A have been reclassified to amortization of purchased intangibles and foreign transaction gain (loss) and other. Previously reported amounts were also adjusted to reflect current year presentation. This resulted in expenses totaling $7.1 million and $1.2 million being reported in amortization of intangibles rather than SG&A in the first nine months of 2019 and 2018, respectively. Additionally, foreign currency transaction gains totaling $1.3 million and $1.2 million recognized in the first nine months of 2019 and 2018, respectively, are now reported in foreign transaction gain (loss) and other. SG&A expenses unrelated to Xcerra's operations were lower due to the decrease in business volume.

Amortization of Purchased Intangible Assets

Amortization of purchased intangibles is the process of expensing the cost of an intangible asset acquired through a business combination over the projected life of the asset. As discussed above these amounts were previously recorded in cost of sales and SG&A. Amortization of acquisition-related intangible assets was $30.0 million and $3.1 million for the first nine months of 2019 and 2018, respectively. The increase in expense recorded during the current year was primarily due to additional amortization associated with purchased intangible assets recorded as a result of the acquisition of Xcerra.

See Note 2, "Business Acquisitions, Goodwill and Purchased Intangible Assets" in Part I, Item 1 of this Form 10-Q for additional information with respect to intangible assets.

Restructuring Charges

Subsequent to the acquisition of Xcerra on October 1, 2018, during fourth quarter 2018, we began a strategic restructuring program designed to reposition our organization and improve our cost structure as part of our targeted integration plan regarding Xcerra and recorded restructuring charges, exclusive of the inventory related amounts described above, totaling $10.7 million in the first nine months of 2019.

See Note 4, "Restructuring Charges" in Part I, Item 1 of this Form 10-Q for additional information with respect to restructuring charges.

Interest Expense and Income

Interest expense was $15.8 million in the first nine months of 2019 as compared to $33,000 in the corresponding period of 2018. The increase was driven primarily by interest associated with the Term B Loan obtained to finance part of the purchase price of Xcerra.

Interest income was $0.6 million and $0.9 million in the first nine months of 2019 and 2018, respectively.

Income Taxes

The ETR on income or loss from continuing operations for the nine months ended September 28, 2019 and September 29, 2018, was (0.3)% and 21.9%, respectively. The tax provision on income or loss from continuing operations in 2019 and 2018 differs from the U.S. federal statutory rate primarily due to foreign income taxed at different rates, changes in our deferred tax asset valuation allowance, withholding tax, state taxes and interest related to unrecognized tax benefits.

There was no material change to our unrecognized tax benefits and related accrued interest and penalties during the nine-month periods ended September 28, 2019 and September 29, 2018.

Income from Continuing Operations and Net Income

As a result of the factors set forth above, our loss from continuing operations and net loss was $52.7 million and $52.4 million in 2019, respectively, as compared to income from continuing operations and net income of $24.6 million in 2018.

LIQUIDITY AND CAPITAL RESOURCES

Our primary business is dependent on capital expenditures by semiconductor manufacturers and test subcontractors that are, in turn, dependent on the current and anticipated market demand for semiconductors. The seasonal and volatile nature of demand for semiconductor equipment, our primary industry, makes estimates of future revenues, results of operations and net cash flows difficult.

Our primary historical source of liquidity and capital resources has been cash flow generated by our operations and we manage our businesses to maximize operating cash flows as our primary source of liquidity. We use cash to fund growth in our operating assets and to fund new products and product enhancements primarily through research and development. As of September 28, 2019, $82.5 million or 56.6% of our cash and cash equivalents was held by our foreign subsidiaries. If these funds are needed for our operations in the U.S., we may be required to accrue and pay foreign withholding taxes if we repatriate these funds. Except for working capital requirements in certain jurisdictions, we provide for all withholding and other residual taxes related to unremitted earnings of our foreign subsidiaries. Beginning in 2018, earnings realized in foreign jurisdictions will be subject to U.S. tax in accordance with the Tax Act.

On October 1, 2018, we entered into a bank credit agreement which provides for a $350.0 million seven-year Term B Loan facility and borrowed the full amount. The Term B Loan facility matures on October 1, 2025. These proceeds were used on October 1, 2018, together with our cash and cash equivalents and newly issued Cohu common stock, to finance the acquisition of Xcerra. See Note 3 "Borrowings and Credit Agreements" included in Part I, Item 1 of this Form 10-Q.

At September 28, 2019, our total indebtedness, net of discount and deferred financing costs, was $351.3 million, which included $338.8 million outstanding under the Term B Loan, $4.0 million outstanding under Kita's term loans, $3.7 million outstanding under Rasco's term loan, $3.3 million outstanding under Kita's lines of credit, and $1.5 million outstanding under Xcerra's term loan.

Liquidity

Working Capital: The following summarizes our cash, cash equivalents, short-term investments and working capital:

(in thousands)	September 28, 2019	December 29, 2018	Decrease	Percentage Change
Cash, cash equivalents and short-term investments	$ 145,667	$ 165,020	$ (19,353)	(11.7)%
Working capital	$ 292,246	$ 324,650	$ (32,404)	(10.0)%

Cash Flows

Operating Activities: Operating cash flows for the first nine months of fiscal 2019 consisted of our net loss, adjusted for non-cash expenses and changes in operating assets and liabilities. These adjustments include depreciation expense on property, plant and equipment, share-based compensation expense, amortization of intangible assets, deferred income taxes, consideration and amortization of inventory step-up and inventory related charges related to Xcerra. Excluding the impact of the acquisition of Xcerra, our net cash provided by operating activities in the first nine months of fiscal 2019 totaled $3.4 million. Net cash provided by operating activities was impacted by changes in current assets and liabilities and included decreases in accounts receivable of $21.8 million, accrued compensation, warranty and other liabilities of $8.8 million, other current assets $7.3 million, income taxes payable of $3.7 million and accounts payable $2.8 million and an increase in deferred profit of $1.1 million. The change in our accounts receivable balance resulted from a sequential decrease in product shipments and the timing of the resulting cash conversion cycle. The decrease in accrued compensation, warranty and other liabilities resulted from cash paid for 2018 incentive compensation paid in 2019 and decreased accruals for warranty due to current business conditions. Tax payments made in the current year led to the decrease in income taxes payable. Other current assets decreased due to the amortization of payments made for insurance and software licenses and other services that are being utilized over the next twelve months and accounts payable decreased as a result of the timing of cash payments made to our vendors and suppliers Deferred profit increased as a result of deferrals of revenue in accordance with our revenue recognition policy.

Investing Activities: Investing cash flows consist primarily of cash used for capital expenditures in support of our businesses, proceeds from investment maturities, asset disposals and cash used for purchases of investments and business acquisitions. Net cash used in investing activities in the first nine months of fiscal 2019 totaled $11.8 million. Additions to property, plant and equipment of $13.3 million were made to support the operating and development activities of our business.

Financing Activities: Cash flows from financing activities consist primarily of net proceeds from the issuance of common stock under our stock option and employee stock purchase plans and cash used to pay dividends to our stockholders, net of repayments of debt. We issue restricted stock units and stock options and maintain an employee stock purchase plan as components of our overall employee compensation. In the first nine months of fiscal 2019, cash used to settle the minimum statutory tax withholding requirements on behalf of our employees upon vesting of restricted and performance stock awards, net of proceeds from the exercise of employee stock options was $1.2 million. We paid dividends totaling $7.4 million, or $0.18 per common share and on August 1, 2019, Cohu's Board of Directors approved a quarterly cash dividend of $0.06 per share payable on October 18, 2019, to shareholders of record on August 23, 2019. Future quarterly dividends are subject to our cash liquidity, capital availability and periodic determinations by our Board of Directors that cash dividends are in the best interests of our stockholders. Furthermore, future quarterly dividends may be reduced from historical levels, or suspended, as a result of the Merger and our high debt level and interest expense and continued weakness in our business and forecasted cash flows. Total repayments of short-term borrowings and long-term debt during the first nine months of fiscal 2019 totaled $3.6 million. Cash flows from financing were also impacted by borrowings of $3.7 million under the Rasco Term Loan.

Capital Resources

In addition to the bank credit agreement which provides for a $350.0 million seven-year Term B Loan facility as described above, we have access to other credit facilities to finance our operations if needed.

As a result of our acquisition of Xcerra, we assumed a term loan related to the purchase of Xcerra's facility in Rosenheim, Germany. The loan is payable over 10 years at an annual interest rate of 2.35%. Principal plus accrued interest is due quarterly over the duration of the term loan. At September 28, 2019, the outstanding loan balance was $1.5 million and $0.3 million of the outstanding balance is presented as current installments of long-term debt in our condensed consolidated balance sheets. The term loan is denominated in Euros and, as a result, amounts disclosed herein will fluctuate because of changes in currency exchange rates.

In connection with the acquisition of Kita on January 4, 2017, we assumed a series of revolving credit agreements with various financial institutions in Japan. The credit facilities renew monthly and provide Kita with access to working capital totaling up to $8.9 million. At September 28, 2019, total borrowings outstanding under the revolving lines of credit were $3.3 million. As these credit facility agreements renew monthly, they have been included in short-term borrowings in our condensed consolidated balance sheet. We also have long-term term loans from a series of Japanese financial institutions totaling $4.0 million primarily related to the expansion of Kita's facility in Osaka, Japan. The loans are collateralized by the facility and land. The loans carry interest rates ranging from 0.05% to 0.44% and expire at various dates through 2034. At September 28, 2019, $0.5 million of the term loans have been included in current installments of long-term debt in our condensed consolidated balance sheet. The revolving lines of credit and term loans are denominated in Japanese Yen and, as a result, amounts will fluctuate as a result of changes in currency exchange rates.

On July 26, 2019, our wholly owned subsidiary Rasco GmbH entered into a term loan agreement with a financial institution that provides it with €3.4 million (Euro) that is being used to finance the expansion of our facility in Kolbermoor, Germany. The facility expansion project will allow us to combine the operations of multiple subsidiaries in one location as part of our strategic restructuring program. The loan is secured by the land and the existing building on the site. Interest on the loan is payable quarterly and is fixed for 10 years at an annual interest rate of 0.8%. Principal repayments will be made over 8 years starting at the end of 2021. Only interest will be due each quarter starting in September 2019 and principal plus accrued interest will be due each quarter starting at the end of December, 2021. At September 28, 2019, the outstanding loan balance was $3.7 million with none of the outstanding balance being presented as current installments of long-term debt in our consolidated balance sheets based on contractual due dates. The term loan is denominated in Euros and, as a result, amounts disclosed herein will fluctuate because of changes in currency exchange rates.

We also have a credit agreement with a financial institution under which it administers a line of credit on behalf of our wholly owned Ismeca subsidiary. The agreement provides Ismeca with 2.0 million Swiss Francs of available credit and at September 28, 2019, no amounts were outstanding.

We have a letter of credit facility (the "LC Facility") under which Bank of America, N.A., has agreed to administer the issuance of letters of credit on our behalf. The LC Facility requires us to maintain deposits of cash or other approved investments in amounts that approximate our outstanding letters of credit and contains customary restrictive covenants. In addition, our wholly owned subsidiary, Xcerra, has arrangements with various financial institutions for the issuance of letters of credit and bank guarantees. As of September 28, 2019, $1.3 million was outstanding under standby letters of credit and bank guarantees.

We expect that we will continue to make capital expenditures to support our business and we anticipate that present working capital will be sufficient to meet our operating requirements for at least the next twelve months.

Contractual Obligations and Off-Balance Sheet Arrangements

Contractual Obligations: Our significant contractual obligations consist of liabilities for debt, operating leases, unrecognized tax benefits, pensions, post-retirement benefits and warranties. Other than changes related to adoption of new lease accounting standards as described in Note 1 to the condensed consolidated financial statements, there were no material changes to these obligations outside the ordinary course of business from those disclosed in our Annual Report on Form 10-K for the year ended December 29, 2018.

Commitments to contract manufacturers and suppliers: From time to time, we enter into commitments with our vendors and outsourcing partners to purchase inventory at fixed prices or in guaranteed quantities. We are not able to determine the aggregate amount of such purchase orders that represent contractual obligations, as purchase orders may represent authorizations to purchase rather than binding agreements. Our purchase orders are based on our current manufacturing needs and are fulfilled by our vendors within relatively short time horizons. We typically do not have significant agreements for the purchase of raw materials or other goods specifying minimum quantities or set prices that exceed our expected requirements for the next three months.

Off-Balance Sheet Arrangements: During the ordinary course of business, we provide standby letters of credit instruments to certain parties as required. As of September 28, 2019, $1.1 million was outstanding under standby letters of credit.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Investment and Interest Rate Risk.

At September 28, 2019, our investment portfolio included short-term fixed-income investment securities with a fair value of approximately $0.6 million. These securities are subject to interest rate risk and will likely decline in value if interest rates increase. Our future investment income may fall short of expectations due to changes in interest rates or we may suffer losses in principal if we are forced to sell securities that decline in market value due to changes in interest rates. As we classify our short-term securities as available-for-sale, no gains or losses are recognized due to changes in interest rates unless such securities are sold prior to maturity or declines in fair value are determined to be other-than-temporary. Due to the relatively short duration of our investment portfolio, an immediate ten percent change in interest rates would have no material impact on our financial condition or results of operations.

We evaluate our investments periodically for possible other-than-temporary impairment by reviewing factors such as the length of time and extent to which fair value has been below cost basis, the financial condition of the issuer and our ability and intent to hold the investment for a period of time sufficient for anticipated recovery of market value. As of September 28, 2019, we held no investments with loss positions.

Our long-term debt is carried at amortized cost and immaterial fluctuations in interest rates do not impact our consolidated financial statements. However, the fair value of our debt will generally fluctuate with movements of interest rates, increasing in periods of declining rates of interest and declining in periods of increasing rates of interest. As of September 28, 2019, we have approximately $346.5 million of long-term debt due under a Credit Facility that is subject to quarterly interest payments that are based on either a base rate plus a margin of up to 2.0% per annum, or the London Interbank Offered Rate (LIBOR) plus a margin of up to 3.0% per annum. The selection of the interest rate formula is at our discretion. The interest rate otherwise payable under the Credit Facility will be subject to increase by 2.0% per annum during the continuance of a payment default and may be subject to increase by 2.0% per annum with respect to the overdue principal amount of any loans outstanding and overdue interest payments and other overdue fees and amounts. At September 28, 2019, the interest rate in effect on these borrowings was 5.29%.

In July 2017, the UK's Financial Conduct Authority, which regulates the LIBOR, announced that it intends to phase out LIBOR by the end of 2021. After 2021, it is unclear whether banks will continue to provide LIBOR submissions to the administrator of LIBOR, and no consensus currently exists as to what benchmark rate or rates may become accepted alternatives to LIBOR. In the United States, efforts to identify a set of alternative U.S. dollar reference interest rates include proposals by the Alternative Reference Rates Committee that has been convened by the Federal Reserve Board and the Federal Reserve Bank of New York. We cannot currently predict the effect of the discontinuation of, or other changes to, LIBOR or any establishment of alternative reference rates in the United States, the European Union or elsewhere on the global capital markets. The uncertainty regarding the future of LIBOR, as well as the transition from LIBOR to any alternative reference rate or rates, could have adverse impacts on floating rate obligations, loans, deposits, derivatives and other financial instruments that currently use LIBOR as a benchmark rate. Our Term B Loan facility constitutes our most significant exposure to this transition and there is no guarantee that a shift from LIBOR to a new reference rate will not result in increases to our borrowing costs.

Foreign Currency Exchange Risk.

We have operations in several foreign countries and conduct business in the local currency in these countries. As a result, we have risk associated with currency fluctuations as the value of foreign currencies fluctuate against the U.S. dollar, in particular the Swiss Franc, Euro, Malaysian Ringgit, Chinese Yuan, Philippine Peso and Japanese Yen. These fluctuations can impact our reported earnings.

Fluctuations in currency exchange rates also impact the U.S. Dollar amount of our net investment in foreign operations. The assets and liabilities of our foreign subsidiaries are translated into U.S. Dollars at the exchange rates in effect at the balance sheet date. Income and expense accounts are translated at an average exchange rate during the period which approximates the rates in effect at the transaction dates. The resulting translation adjustments are recorded in stockholders' equity as a component of accumulated other comprehensive loss. As a result of fluctuations in certain foreign currency exchange rates in relation to the U.S. Dollar as of September 28, 2019, compared to December 29, 2018, our stockholders' equity decreased by $14.9 million.

Based upon the current levels of net foreign assets, a hypothetical 10% devaluation of the U.S. Dollar as compared to these currencies as of September 28, 2019 would result in an approximate $37.7 million positive translation adjustment recorded in other comprehensive income within stockholders' equity. Conversely, a hypothetical 10% appreciation of the U.S. Dollar as compared to these currencies as of September 28, 2019 would result in an approximate $37.7 million negative translation adjustment recorded in other comprehensive income within stockholders' equity.

Item 4. Controls and Procedures.

(a) Evaluation of Disclosure Controls and Procedures. Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we evaluated the effectiveness of our disclosure controls and procedures, as such term is defined in Rules 13a-15(e) and 15d-15(e) promulgated under the Securities Exchange Act of 1934, as amended. Based on this evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this quarterly report.

It should be noted that any system of controls, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system are met. In addition, the design of any control system is based in part upon certain assumptions about the likelihood of future events. Because of these and other inherent limitations of control systems, there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote. Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives and our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level.

(b) Changes in Internal Control over Financial Reporting. During the three months ended September 28, 2019, we did not make any changes in our internal control over financial reporting 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.

The information set forth above under Note 11 contained in the "Notes to Unaudited Condensed Consolidated Financial Statements" of this Form 10-Q is incorporated herein by reference.

Item 1A. Risk Factors.

The risks described below are not the only risks we face. Additional risks that we are unaware of, or that we currently believe are not material, may also impair our business operations. The risk factors set forth below with an asterisk (*) next to the title contain substantive changes to the description of the risk factors associated with our business as previously disclosed in Item 1A to our 2018 Annual Report on Form 10-K. If any of the events or circumstances described in the following risks occur, our business, financial condition, results of operations or cash flows could suffer, and the trading price of our common stock and our market capitalization could decline.

**** We may fail to realize all of the anticipated benefits of the Xcerra acquisition or those benefits may take longer to realize than expected.***
Cohu acquired Xcerra Corporation ("Xcerra") on October 1, 2018, at which time Xcerra became a wholly owned subsidiary of Cohu (the "Merger"). Our ability to realize the anticipated benefits and synergies of the Merger will depend, to a large extent, on our ability to integrate Xcerra, which is expected to be a complex, costly and time-consuming process. The integration process may disrupt our business and, if implemented ineffectively or delayed, could restrict the realization of the full expected benefits. The failure to meet the challenges involved in the integration process and to realize the anticipated benefits of the Merger could cause an interruption of, or a loss of momentum in, our operations and could adversely affect our business, financial condition and results of operations.

In addition, the integration of Xcerra may result in material unanticipated problems, expenses, liabilities, competitive responses, and loss of customers, suppliers and other business relationships. Additional integration challenges and risks include:

- difficulties entering new markets or manufacturing in new geographies where Cohu has no or limited direct prior experience;
- such a new market for Cohu, the automated test equipment market, is intensely competitive with entrenched large competitors who are much larger than Cohu;
- successfully managing relationships with Cohu and Xcerra's combined supplier and customer base;
- coordinating and integrating independent research and development and engineering teams across technologies and product platforms to enhance product development while reducing costs;
- coordinating sales and marketing efforts to effectively position the combined company's capabilities and the direction of product development;
- difficulties and significant costs in integrating the systems and processes of two companies with complex operations including multiple manufacturing sites;
- difficulties and potential loss of sales in transitioning customers from certain Xcerra products that are being discontinued and to Cohu products;
- product manufacturing disruptions and delays as we consolidate certain manufacturing sites;
- difficulties and errors that may occur in integrating disparate accounting staffs, processes and systems;
- the increased scale and complexity of Cohu's operations resulting from the Merger;
- Cohu's ability to achieve the targeted cost synergies within the expected time frame, and significant costs of integration and restructuring;
- retaining key employees of Cohu and Xcerra;
- obligations that Cohu will have to counterparties of Xcerra that arise as a result of the change in control of Xcerra;
- legal impediments, delays and significant costs to reduce headcounts in various geographies;
- the impact of litigation and potential liabilities we may be inheriting from Xcerra; and
- diversion of management's attention to integration matters.

Many of these factors will be outside of our control and any one of them could result in increased costs, decreases in the amount of expected revenues, and diversion of management's time and energy, which could adversely affect our business, financial condition, and results of operations and result in us becoming subject to litigation. In addition, even if Xcerra is integrated successfully, the full anticipated benefits of the Merger may not be realized, including the synergies, cost savings or sales or growth opportunities that are anticipated. These benefits may not be achieved within the anticipated time frame, or at all. Further, additional unanticipated costs may be incurred in the integration process. All of these factors could cause reductions in our earnings per share and decrease or delay the expected accretive effect of the Merger. As a result, it cannot be assured that the Merger will result in the realization of the full or any anticipated benefits.

We have incurred and will continue to incur significant transaction costs in connection with the Merger that could adversely affect our results of operations.

Although we have completed the Merger, we have incurred, and will continue to incur, significant transaction costs in connection with the Merger, including restructuring expenses and the payment of certain fees and expenses incurred in connection with the Merger and related financing transactions. Additional unanticipated costs may be incurred in the integration process, and restructuring charges may significantly exceed original estimates. For example, a significant portion of planned cost synergies relate to headcount reductions, primarily in foreign jurisdictions where the labor laws are complex. Any delays in implementing such headcount reductions, or increased costs to implement, would materially impact the cost synergies achieved. These could adversely affect our results of operations in the period in which such expenses are recorded or our cash flow in the period in which any related costs are actually paid. Furthermore, we expect to incur material restructuring and integration charges in connection with the Merger, which may adversely affect our operating results in the period in which such expenses are recorded or our cash flow in the period in which any related costs are actually paid. Cohu incurred $9.8 million and $0.4 million of acquisition-related costs, and $37.8 million and $10.7 million of restructuring charges, for the Xcerra acquisition during fiscal year 2018 and first nine months of fiscal 2019, respectively.

**** Xcerra may underperform relative to our expectations.***

The business and financial performance of Xcerra are subject to certain risks and uncertainties. We may not be able to maintain the growth rate, levels of revenue, earnings, or operating efficiency that we and Xcerra have achieved or might achieve separately and, in fact, due to weak market conditions in 2019 Xcerra's sales and earnings have declined significantly on a year-over-year basis. In addition, we believe Xcerra's ATE products have been materially impacted by the Huawei export restrictions (see risk factor entitled "Global economic and political conditions, including trade tariffs and export restrictions, have impacted our business and may continue to have an impact on our business and financial condition"). Any further underperformance could have a material adverse effect on our financial condition and results of operations.

Cohu's ability to utilize Xcerra's net operating loss and credit carryforwards is severely limited.

As a result of the Merger an ownership change has occurred at Xcerra and as a consequence Cohu's ability to utilize Xcerra's net operating loss and credit carryforwards, that were already partially limited due to a prior acquisition, will be subject to annual limitations as provided for in Internal Revenue Code Sections 382 and 383. These annual limitations will result in the inability of Cohu to utilize a substantial portion of these carryforwards.

Uncertainties underlie Cohu's expectation that, relative to Cohu on a stand-alone basis, the Merger will be accretive to Cohu's earnings per share.

Cohu believes that, relative to Cohu on a stand-alone basis, the Merger will be accretive to Cohu's earnings per share upon completion of the ongoing restructuring and integration. However, Cohu cannot give any assurance that the Merger will actually be accretive to Cohu's earnings per share. In addition to the uncertainties that underlie any financial forecast, Cohu will account for the Merger as an acquisition under Accounting Standards Codification Topic 805, "Business Combinations," or "ASC 805". The total cost of the Merger will be allocated to the underlying identifiable net tangible and intangible assets and liabilities based on their respective estimated fair values. Until these allocations are completed, Cohu can only estimate the allocation of the acquisition price to the net assets acquired and the effect of the allocation on future results. That estimate could materially change.

The use of cash and incurrence of substantial indebtedness in connection with the financing of the Merger may have an adverse impact on Cohu's liquidity, limit Cohu's flexibility in responding to other business opportunities and increase Cohu's vulnerability to adverse economic and industry conditions.

The Merger was financed in part by using Cohu's and Xcerra's cash on hand and the incurrence of indebtedness. In connection with the Merger, Cohu entered into a term loan facility, with an aggregate principal amount of $350.0 million (the "Debt Financing" or "Credit Agreement"). Cohu used $160.5 million of Cohu's and Xcerra's cash on hand to complete the Merger. Cohu's (including Xcerra's) cash, cash equivalents and short-term investments as of September 28, 2019 were approximately $145.7 million. The use of cash on hand and indebtedness to finance the acquisition has reduced Cohu's liquidity and could cause Cohu to place more reliance on cash generated from operations to pay principal and interest on Cohu's debt, thereby reducing the availability of Cohu's cash flow for working capital, dividend and capital expenditure needs or to pursue other potential strategic plans.

* ***Our Credit Agreement contains various representations and negative covenants that limit, subject to certain exceptions and baskets, our ability and/or our subsidiaries' ability to, among other things***:

- incur or assume liens or additional debt or provide guarantees in respect of obligations of other persons;
- issue redeemable stock and preferred stock;
- pay cash dividends or make distributions on capital stock, repurchase, redeem or make payments on capital stock;
- make loans, investments or acquisitions;
- enter into agreements that restrict distributions from our subsidiaries;
- create or permit restrictions on the ability of our subsidiaries to pay dividends or make other distributions to us or to guarantee our debt, limit our or any of our subsidiaries' ability to create liens, or that require the grant of a lien to secure an obligation if a lien is granted to secure another obligation;
- sell assets and capital stock of our subsidiaries;
- enter into certain transactions with affiliates;
- sell, transfer, license, lease or dispose of our or our subsidiaries' assets; and
- dissolve, liquidate, consolidate or merge with or into, or sell substantially all the assets of us and our subsidiaries, taken as a whole, to, another person.

The restrictions contained in our Credit Agreement could adversely affect our ability to:

- finance our operations;
- make needed capital expenditures;
- make strategic acquisitions or investments or enter into alliances;
- withstand a future downturn in our business or the economy in general;
- engage in business activities, including future opportunities, that may be in our interest; and
- plan for or react to market conditions or otherwise execute our business strategies.

A breach of any of these negative covenants could result in a default under the Credit Agreement. Further, additional indebtedness that we incur in the future may subject us to further covenants. Our failure to comply with these covenants could result in a default under the agreements governing the relevant indebtedness. The lender may accelerate the payment terms of the Credit Agreement upon the occurrence of certain events of default set forth therein, which include: the failure of Cohu to make timely payments of amounts due under the Credit Agreement, the failure of Cohu to adhere to the representations and covenants set forth in the Credit Agreement, the failure to provide notice of any event that causes a material adverse effect or to provide other required notices, upon the event that related collateral agreements become ineffective, upon the event that certain legal judgments are entered against Cohu, the insolvency of Cohu, or upon the change of control of Cohu. Any event that could require us to repay debt prior to its due date could have a material adverse impact on our financial condition and results of operations.

Our ability to comply with covenants contained in such debt agreements may be affected by events beyond our control, including prevailing economic, financial and industry conditions. Even if we are able to comply with all of the applicable covenants, the restrictions on our ability to manage our business in our sole discretion could adversely affect our business by, among other things, limiting our ability to take advantage of financings, mergers, acquisitions and other corporate opportunities that we believe would be beneficial to us. In addition, our obligations under the Credit Agreement are secured, on a first-priority basis, and such security interests could be enforced in the event of default by the collateral agent for the Credit Agreement.

Cohu has total consolidated long-term debt of $345 and because of such high debt levels we may not be able to service its debt obligations in accordance with their terms; the Tax Cuts and Jobs Act severely limits the deductibility of interest expense.

Cohu's ability to meet its expense and debt service obligations contained in the Debt Financing agreements will depend on Cohu's future performance, which will be affected by financial, business, economic and other factors, including potential changes in industry conditions, industry supply and demand balance, customer preferences, the success of Cohu's products and pressure from competitors. In addition, Cohu is subject to interest rate risks, and continuing increases in interest rates will increase Cohu's debt service obligations. Should combined Cohu and Xcerra revenues decline after the Merger (as compared to last year), as they did year-to-date 2019 and are again forecasted to do so in fourth quarter 2019, Cohu may not be able to generate sufficient cash flow to pay its debt service obligations when due. If Cohu is unable to meet its debt service obligations after the Merger or should Cohu fail to comply with the covenants contained in the agreements governing its indebtedness, Cohu may be required to refinance all or part of its debt, sell important strategic assets at unfavorable prices, incur additional indebtedness or issue Cohu Common Stock or other equity securities. Cohu may not be able to, at any given time, refinance its debt, sell assets, incur additional indebtedness or issue equity securities on terms acceptable to Cohu, in amounts sufficient to meet Cohu's needs or at all. If Cohu is able to raise additional funds through the issuance of equity securities, such issuance would also result in dilution to Cohu's stockholders. Cohu's inability to service its debt obligations or refinance its debt could have a material adverse effect on its business, financial conditions or operating results after the Merger. In addition, Cohu's debt obligations may limit its ability to make required investments in capacity, technology or other areas of its business, which could have a material adverse effect on its business, financial conditions or operating results. Furthermore, the Tax Cuts and Jobs Act limits the deductibility of interest expense in a given year to 30% of adjusted taxable income, as defined. This resulted in the inability of Cohu to utilize a substantial portion of its interest expense deductions in 2018 and may impact our ability to utilize future deductions. However, the Act permits indefinite carryforward of any disallowed business interest, subject to Internal Revenue Code section 382 limitations on utilization.

The issuance of shares of our common stock in connection with the Merger, and any future offerings of securities by us, will dilute our shareholders' ownership interest in the company.

The Merger was financed in part by the issuance of additional shares of our common stock to shareholders of Xcerra, comprised approximately 11.8 million shares of common stock, or approximately 29% of our issued and outstanding shares of common stock immediately after completing the Merger. These issuances of additional shares of our common stock have diluted shareholders' ownership interest in our company, and shareholders now have a proportionately reduced ownership and voting interest in our company as a result of completion of the Merger.

Because a significant portion of Cohu's total assets will be represented by goodwill, which is subject to mandatory impairment evaluation, and other intangibles, Cohu could be required to write-off some or all of this goodwill and other intangibles, which may adversely affect the combined company's financial condition and results of operations.

Cohu has accounted for the acquisition of Xcerra using the purchase method of accounting. A portion of the purchase price for this business was allocated to identifiable tangible and intangible assets and assumed liabilities based on estimated fair values at the date of consummation of the merger. As a result of the Merger, 48.4% of Cohu's total assets are comprised of goodwill and other intangibles, of which approximately $235.9 million is allocated to goodwill. In accordance with ASC 350, *Intangibles — Goodwill and Other*, goodwill and certain other intangible assets with indefinite useful lives are not amortized but are reviewed at least annually for impairment, or more frequently if there are indications of impairment. All other intangible assets are subject to periodic amortization. Cohu evaluates the remaining useful lives of other intangibles each quarter to determine whether events and circumstances warrant a revision to the remaining period of amortization. If we are unable to realize the anticipated benefits of the Merger, when Cohu performs future impairment tests, it is possible that the carrying value of goodwill or other intangible assets could exceed their implied fair value and therefore would require adjustment. Such adjustment would result in a charge to operating income in that period. Once adjusted, there can be no assurance that there will not be further adjustments for impairment in future periods.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results, and current and potential stockholders may lose confidence in our financial reporting.

We are required by the Securities and Exchange Commission to establish and maintain adequate internal control over financial reporting that provides reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles. We are likewise required, on a quarterly basis, to evaluate the effectiveness of our internal controls and to disclose any changes and material weaknesses in those internal controls.

Completing the Merger has significantly increased the size, number of employees, global operations and complexity of Cohu's business. Although we believe that we have adequate internal controls in place at this time, we cannot be certain that, with significantly greater global complexity, we will be able to maintain adequate internal control over our financial reporting in future periods. Any failure to maintain such internal controls could adversely impact our ability to report our financial results on a timely and accurate basis. If our financial statements are not accurate, investors may not have a complete understanding of our operations. Likewise, if our financial statements are not filed on a timely basis as required by the Securities and Exchange Commission and Nasdaq Global Select Market, we could face severe consequences from those authorities. In either case, there could result a material adverse effect on our business. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our stock.

**** Cohu may discover liabilities or deficiencies associated with Xcerra that were not identified in advance.***

We may discover liabilities, product return issues or deficiencies associated with Xcerra that were not identified in advance, which may result in significant unanticipated costs, including potential accounting and tax charges. The effectiveness of our due diligence review and our ability to evaluate the results of such due diligence are ultimately dependent upon the accuracy and completeness of statements and disclosures made or actions taken by Xcerra, as well as the limited amount of time in which the acquisition was executed. For example, since closing the Merger, we have incurred material product returns and associated expenses and were required to make material customer pricing concessions in order to resolve various Xcerra product issues. Any further unexpected liabilities, product return issues or deficiencies associated with Xcerra could have a material adverse effect on our financial condition and results of operations.

**** Cohu cannot provide assurance that it will be able to continue paying dividends at the current rate or at all.***
Cohu stockholders may not receive the same or any dividends in the future for various reasons, including the following:

- as a result of the Merger and the issuance of shares of Cohu Common Stock in connection with the Merger, the total amount of cash required for Cohu to pay dividends at its current rate has increased;
- Cohu's credit agreement restricts payments of dividends under certain circumstances;
- Cohu may not have enough cash to pay such dividends due to Cohu's operational cash requirements, capital spending plans, cash flow or financial position;
- rising interest rates, which increase Cohu's debt service obligations;
- Cohu may desire to retain cash to maintain or improve its credit ratings;
- difficulties and increased costs in connection with integration of the personnel, operations, technologies and products of acquired businesses;
- given weak market conditions that began in late 2018 and continuing to persist in 2019, and the associated business uncertainty, we may determine to take action to preserve cash;
- Cohu may reduce or eliminate its dividend in order to pay down debt;
- decisions on whether, when and in which amounts to make any future distributions will remain at all times entirely at the discretion of the Cohu Board, which reserves the right to change Cohu's dividend practices at any time with no prior notice; and
- the amount of dividends that Cohu's subsidiaries may distribute to Cohu may be subject to restrictions imposed by state or foreign law, restrictions that may be imposed by state or foreign regulators, and restrictions imposed by the terms of any current or future indebtedness that these subsidiaries may incur.

**** We have elected to terminate Xcerra's agreement with Spirox Corporation as a distributor in China and Taiwan. If we are unable to adequately replace Spirox, or if its performance deteriorates during the transition period, it may adversely impact our business.***
The Xcerra division has relied on Spirox Corporation ("Spirox") as its primary distribution channel for sales and service in China and Taiwan for its Semiconductor Test Solutions products, a region that represents a material portion of Xcerra's revenues. Spirox has had direct contact with Xcerra's customers, and Spirox has been obligated to satisfy all installation and service obligations for the Semiconductor Test Solutions products. After a thorough review of this arrangement, on October 12, 2018, we notified Spirox of our intention to terminate the Spirox distribution agreement, and subsequently negotiated an accelerated wind-down and termination date of March 12, 2019. Our business and financial performance within the China and Taiwan region may be negatively impacted if cooperation with Spirox during the transition fails, if Cohu is delayed and otherwise fails to timely and adequately staff and fund sales and service resources in the region to replace those resources that have previously been provided by Spirox, or if customers delay or fail, for any reason, to transition to direct sales with us.

**** We are exposed to other risks associated with acquisitions, investments and divestitures.***
As part of our business strategy, we will continue to regularly evaluate investments in, or acquisitions of, complementary businesses, joint ventures, services and technologies, and we expect that periodically we will continue to make such investments and acquisitions in the future. Acquisitions and investments involve numerous risks, including, but not limited to:

- difficulties and increased costs in connection with integration of the personnel, operations, technologies and products of acquired businesses;
- increasing the scope, geographic diversity and complexity of our business;
- the cost and risk of having to potentially develop new and unfamiliar sales channels for acquired businesses;
- diversion of management's attention from other operational matters;
- the potential loss of key employees, customers or suppliers of Cohu or acquired businesses;
- lack of synergy, or the inability to realize expected synergies, resulting from the acquisition;
- potential unknown liabilities associated with the acquired businesses;
- failure to commercialize purchased technology;
- the impairment of acquired intangible assets and goodwill that could result in significant charges to operating results in future periods; and
- challenges caused by distance, language and cultural differences.

We may decide to finance future acquisitions and investments through a combination of borrowings, proceeds from equity or debt offerings and the use of cash, cash equivalents and short-term investments. If we finance acquisitions by issuing convertible debt or equity securities, our existing stockholders may be diluted which could affect the market price of our stock.

Mergers, acquisitions and investments are inherently risky and the inability to effectively manage these risks could materially and adversely affect our business, financial condition and results of operations. At September 28, 2019, we had goodwill and net purchased intangible assets balances of $235.9 million and $282.5 million, respectively.

Further, as a strategy to pay down long-term debt, we expect to continue to evaluate divestitures of assets that management determines to be non-core to our overall business strategy. Any such divestitures may distract Cohu’s management team, disrupt employees, may not yield attractive valuations, may incur material restructuring and transaction expenses and tax obligations, and may otherwise be unsuccessful.

We are making investments in new products to enter new markets, which may adversely affect our operating results; these investments may not be successful.

Given the highly competitive and rapidly evolving technology environment in which we operate, we believe it is important to develop new product offerings to meet strategic opportunities as they evolve. This includes developing products that we believe are necessary to meet the future needs of the marketplace. We are currently investing in new product development programs to enable us to compete in the test contactor markets, while also investing in next generation test handlers and automated test equipment. We expect to continue to make investments and we may at any time, based on product need or marketplace demand, decide to significantly increase our product development expenditures in these or other products. The cost of investments in new product offerings can have a negative impact on our operating results. For example, our PANTHER wafer level package probe system has incurred significant development costs, but has not generated material revenues for us. There can be no assurance that new products we develop will be accepted in the marketplace or generate material revenues for us.

We are exposed to the risks of operating a global business.

We are a global corporation with offices and subsidiaries in certain foreign locations to manufacture our products, support our sales and services to the global semiconductor industry and, as such, we face risks in doing business abroad. Certain aspects inherent in transacting business internationally could negatively impact our operating results, including:

- costs and difficulties in staffing and managing international operations;
- legislative or regulatory requirements and potential changes in or interpretations of requirements in the United States and in the countries in which we manufacture or sell our products;
- trade restrictions, including treaty changes, sanctions and the suspension of export licenses;
- compliance with and changes in import/export tariffs and regulations;
- complex labor laws and privacy regulations;
- difficulties in enforcing contractual and intellectual property rights;
- longer payment cycles;
- local political and economic conditions;
- complex tax laws and potentially adverse tax consequences, including restrictions on repatriating earnings and the threat of “double taxation;” and
- fluctuations in foreign currency exchange rates against the U.S. Dollar, which can affect demand for our products and increase our costs.

Additionally, managing geographically dispersed operations presents difficult challenges associated with organizational alignment and infrastructure, communications and information technology, inventory control, customer relationship management, terrorist threats and related security matters and cultural diversities. If we are unsuccessful in managing such operations effectively, our business and results of operations will be adversely affected.

We have manufacturing operations in Asia. Any failure to effectively manage multiple manufacturing sites and to secure raw materials meeting our quality, cost and other requirements, or failures by our suppliers to perform, could harm our sales, service levels and reputation.

Our reliance on overseas manufacturers exposes us to significant risks including complex management, foreign currency, legal, tax and economic risks, which we may not be able to address quickly and adequately. In addition, it is time consuming and costly to qualify overseas supplier relationships. If we should fail to effectively manage overseas manufacturing operations, or if one or more of them should experience delays, disruptions or quality control problems, or if we had to change or add additional manufacturing sites, our ability to ship products to our customers could be delayed. Also, the addition of overseas manufacturing locations increases the demands on our administrative and operations infrastructure and the complexity of our supply chain management. If our overseas manufacturing locations are unable to meet our manufacturing requirements in a timely manner, our ability to ship products and to realize the related revenues when anticipated could be materially affected.

Our suppliers are subject to the fluctuations in general economic cycles, and global economic conditions may impact their ability to operate their business. They may also be impacted by possible import, export, tariff and other trade barriers, increasing costs of raw materials, labor and distribution, resulting in demands for less attractive contract terms or an inability for them to meet our requirements or conduct their own businesses. The performance and financial condition of a supplier may cause us to alter our business terms or to cease doing business with a particular supplier, or change our sourcing practices generally, which could in turn adversely affect our own business and financial condition.

Failure of critical suppliers to deliver sufficient quantities of parts in a timely and cost-effective manner could adversely impact our operations.
We use numerous vendors to supply parts, components and subassemblies for the manufacture of our products. It is not always possible to maintain multiple qualified suppliers for all of our parts, components and subassemblies. As a result, many key parts may be available only from a single supplier ("sole source") or a limited number of suppliers. In addition, suppliers may significantly raise prices or cease manufacturing certain components (with or without advance notice to us) that are difficult to replace without significant reengineering of our products. On occasion, we have experienced problems in obtaining adequate and reliable quantities of various parts and components from certain key or sole source suppliers. Our results of operations may be materially and adversely impacted if we do not receive sufficient parts to meet our requirements in a timely and cost-effective manner.

**** The semiconductor industry we serve is seasonal, volatile and unpredictable.***
Visibility into our markets is limited. The semiconductor equipment business is highly dependent on the overall strength of the semiconductor industry. Historically, the semiconductor industry has been seasonal with recurring periods of oversupply and excess capacity, which often have had a significant effect on the semiconductor industry's demand for capital equipment, including equipment of the type we manufacture and market. We anticipate that the markets for newer generations of semiconductors and semiconductor equipment will also be subject to similar cycles and severe downturns. Any significant reductions in capital equipment investment by semiconductor integrated device manufacturers and test subcontractors will materially and adversely affect our business, financial position and results of operations. In addition, the seasonal, volatile and unpredictable nature of semiconductor equipment demand has in the past and may in the future expose us to significant excess and obsolete and lower of cost or net realizable value inventory write-offs and reserve requirements. In 2018, 2017 and 2016, we recorded pre-tax inventory-related charges of approximately $1.4 million, $1.1 million, and $1.1 million, respectively, primarily as a result of changes in customer forecasts. More recently, in the second half of 2018 and continuing throughout 2019, we have seen significantly weakened demand in automotive, mobility and consumer market segments, and overall geographic weakness in China and Taiwan. These trends adversely affected our second half 2018 results, year-to-date 2019 results, and are expected to continue to adversely impact our full year 2019 outlook and results. Such adverse trends have materially impacted all of our business areas, including the businesses conducted by Xcerra. Finally, in 2018 we incurred $19.1 million of inventory charges related to the decision to end manufacturing of certain of Xcerra's semiconductor test handler products, and these charges may be insufficient as market conditions and demand changes.

Due to the nature of our business, we need continued access to capital, which if not available to us or if not available on favorable terms, could harm our ability to operate or expand our business.
Our business requires capital to finance accounts receivable and product inventory that is not financed by trade creditors when our business is expanding. If cash from available sources is insufficient or cash is used for unanticipated needs, we may require additional capital sooner than anticipated.

We believe that our existing sources of liquidity, including cash resources and cash provided by operating activities will provide sufficient resources to meet our working capital and cash requirements for at least the next twelve months. In the event we are required, or elect, to raise additional funds, we may be unable to do so on favorable terms, or at all, and may incur expenses in raising the additional funds and increase our interest rate exposure, and any future indebtedness could adversely affect our operating results and severely limit our ability to plan for, or react to, changes in our business or industry. Further, under our Credit Agreement, we are significantly limited by financial and other negative covenants in our credit arrangements, including limitations on our borrowing of additional funds and issuing dividends. If we choose to issue new equity securities, existing stockholders may experience dilution, or the new equity securities may have rights, preferences or privileges senior to those of existing holders of common stock. If we cannot raise funds on acceptable terms, we may not be able to take advantage of future opportunities or respond to competitive pressures or unanticipated requirements. Any inability to raise additional capital when required could have an adverse effect on our business and operating results.

**** The semiconductor equipment industry is intensely competitive.***

The semiconductor equipment industry is intensely competitive and we face substantial competition from numerous companies throughout the world. The test handler industry, while relatively small in terms of worldwide market size compared to other segments of the semiconductor equipment industry, has several participants resulting in intense competitive pricing pressures. Future competition may include companies that do not currently supply test handlers. Some of our competitors are part of larger corporations that have substantially greater financial, engineering, manufacturing and customer support capabilities and provide more extensive product offerings. In addition, there are emerging semiconductor equipment companies that provide or may provide innovative technology incorporated in products that may compete successfully against our products. We expect our competitors to continue to improve the design and performance of their current products and introduce new products with improved performance capabilities. Our failure to introduce new products in a timely manner, the introduction by our competitors of products with perceived or actual advantages, or disputes over rights to use certain intellectual property or technology could result in a loss of our competitive position and reduced sales of, or margins on our existing products. Intense competition has adversely impacted our product average selling prices and gross margins on certain products. If we are unable to reduce the cost of our existing products and successfully introduce new lower cost products, then we expect that these competitive conditions would negatively impact our gross margin and operating results in the foreseeable future.

We have increased investments in our test contactor business, and announced significant growth targets for the business over the next several years, but due to ongoing weak market conditions we have not achieved our growth goals in 2019, year-to-date. The test contactor market is fragmented, with many entrenched regional players, and subject to intense price competition and high customer support requirements. We believe that customer support and responsiveness and an ability to consistently meet tight deadlines is critical to our success. If we are unable to reduce the cost of our test contactor products, while also meeting customer support requirements and deadlines, then we expect that these competitive conditions would negatively impact our gross margin and operating results in the foreseeable future.

In addition, with the Xcerra acquisition, Cohu has entered the automated test equipment (“ATE”) market. Our ability to increase our ATE sales will depend, in part, on our ability to obtain orders from new customers. Semiconductor and electronics manufacturers typically select a particular vendor’s product for testing new generations of a device and make substantial investments to develop related test program applications and interfaces. Once a manufacturer has selected an ATE vendor for a new generation of a device, that manufacturer is more likely to purchase systems from that vendor for that generation of the device, and, possibly, subsequent generations of that device as well. Further, Cohu has a niche position and relatively low share in the ATE market, and this market is primarily driven by two larger companies with significantly more resources to invest into the ATE market. Therefore, the opportunities to obtain orders from new customers or existing customers may be limited, which may impair our ability to grow our ATE revenue. In fact, as market conditions have weakened, we have seen a material reduction in sales within our ATE business.

Semiconductor equipment is subject to rapid technological change, product introductions and transitions which may result in inventory write-offs, and our new product development involves numerous risks and uncertainties.

Semiconductor equipment and processes are subject to rapid technological change. We believe that our future success will depend in part on our ability to enhance existing products and develop new products with improved performance capabilities. We expect to continue to invest heavily in research and development and must manage product transitions successfully, as introductions of new products, including the products obtained in our acquisitions, may adversely impact sales and/or margins of existing products. In addition, the introduction of new products by us or by our competitors, the concentration of our revenues in a limited number of large customers, the migration to new semiconductor testing methodologies and the custom nature of our inventory parts increases the risk that our established products and related inventory may become obsolete, resulting in significant excess and obsolete inventory exposure. This exposure resulted in charges to operations during each of the years in the three-year period ended December 29, 2018. Future inventory write-offs and increased inventory reserve requirements could have a material adverse impact on our results of operations and financial condition.

The design, development, commercial introduction and manufacture of new semiconductor equipment is an inherently complex process that involves a number of risks and uncertainties. These risks include potential problems in meeting customer acceptance and performance requirements, integration of the equipment with other suppliers’ equipment and the customers’ manufacturing processes, transitioning from product development to volume manufacturing and the ability of the equipment to satisfy the semiconductor industry’s constantly evolving needs and achieve commercial acceptance at prices that produce satisfactory profit margins. The design and development of new semiconductor equipment is heavily influenced by changes in integrated circuit assembly, test and final manufacturing processes and integrated circuit package design changes. We believe that the rate of change in such processes and integrated circuit packages is accelerating. As a result of these changes and other factors, assessing the market potential and commercial viability of handling, ATE, MEMS, system-level and burn-in test equipment and test contactors is extremely difficult and subject to a great deal of risk. In addition, not all integrated circuit manufacturers employ the same manufacturing processes. Differences in such processes make it difficult to design standard test products that can achieve broad market acceptance. As a result, we might not accurately assess the semiconductor industry’s future equipment requirements and fail to design and develop products that meet such requirements and achieve market acceptance. Failure to accurately assess customer requirements and market trends for new semiconductor test products may have a material adverse impact on our operations, financial condition and results of operations.

The transition from product development to the manufacture of new semiconductor equipment is a difficult process and delays in product introductions and problems in manufacturing such equipment are common. We have in the past and may in the future experience difficulties in manufacturing and volume production of our new equipment. In addition, as is common with semiconductor equipment, after sale support and warranty costs have typically been significantly higher with new products than with our established products. Future technologies, processes and product developments may render our current or future product offerings obsolete and we might not be able to develop, introduce and successfully manufacture new products or make enhancements to our existing products in a timely manner to satisfy customer requirements or achieve market acceptance. Furthermore, we might not realize acceptable profit margins on such products.

Global economic conditions may have an impact on our business and financial condition in ways that we currently cannot predict.
Our operations and financial results depend on worldwide economic conditions and their impact on levels of business spending. Continued uncertainties may reduce future sales of our products and services. While we believe we have a strong customer base and have experienced strong collections in the past, if the current market conditions deteriorate, we may experience increased collection times and greater write-offs, either of which could have a material adverse effect on our cash flow.

In addition, the tightening of credit markets and concerns regarding the availability of credit may make it more difficult for our customers to raise capital, whether debt or equity, to finance their purchases of capital equipment, including the products we sell. Delays in our customers’ ability to obtain such financing, or the unavailability of such financing would adversely affect our product sales and revenues and therefore harm our business and operating results. Possible import, export, tariff and other trade barriers, which could be imposed by Asia, the United States, other countries or the European Union might also have a material adverse effect on our operating results. We cannot predict the timing, duration of or effect on our business of an economic slowdown or the timing or strength of a subsequent recovery.

A limited number of customers account for a substantial percentage of our net sales.
A small number of customers have been responsible for a significant portion of our net sales. During the past five years, the percentage of our sales derived from these significant customers has varied greatly. Such variations are due to changes in the customers’ business, consolidation within the semiconductor industry and their purchase of products from our competitors. It is common in the semiconductor equipment industry for customers to purchase products from more than one equipment supplier, increasing the risk that our competitive position with a specific customer may deteriorate. No assurance can be given that we will continue to maintain our competitive position with these or other significant customers. Furthermore, we expect the percentage of our revenues derived from significant customers will vary greatly in future periods. The loss of, or a significant reduction in, orders by these or other significant customers as a result of competitive products, market conditions including end market demand for our customers’ products, outsourcing final semiconductor test to test subcontractors that are not our customers or other factors, would have a material adverse impact on our business, financial condition and results of operations. Furthermore, the concentration of our revenues in a limited number of large customers is likely to cause significant fluctuations in our future annual and quarterly operating results.

If we cannot continue to develop, manufacture and market products and services that meet customer requirements for innovation and quality, our revenue and gross margin may suffer.
The process of developing new high technology products and services and enhancing existing products and services is complex, costly and uncertain, and any failure by us to anticipate customers’ changing needs and emerging technological trends accurately could significantly harm our sales and results of operations. In addition, in the course of conducting our business, we must adequately address quality issues associated with our products and services, including defects in our engineering, design and manufacturing processes, as well as defects in third-party components included in our products. To address quality issues, we work extensively with our customers and suppliers and engage in product testing to determine the cause of quality problems and appropriate solutions. Finding solutions to quality issues can be expensive and may result in additional warranty, replacement and other costs, adversely affecting our profits. In addition, quality issues can impair our relationships with new or existing customers and adversely affect our reputation, which could lead to a material adverse effect on our operating results.

**** The seasonal nature of the semiconductor equipment industry places enormous demands on our employees, operations and infrastructure.***
The semiconductor equipment industry is characterized by dramatic and sometimes rapid changes in demand for its products. These are generally dictated by introduction of new consumer products, launch of new model vehicles, implementation of new communications infrastructure, or in response to an increase in industrial equipment and machinery that utilizes semiconductors. A number of other factors including changes in integrated circuit design and packaging may affect demand for our products. Sudden changes in demand for semiconductor equipment commonly occur, and have a significant impact on our operations. We have in the past and may in the future experience difficulties, particularly in manufacturing, in training and recruiting the large number of additions to our workforce. The volatility in headcount and business levels, combined with the seasonal nature of the semiconductor industry, may require that we invest substantial amounts in new operational and financial systems, procedures and controls. We may not be able to successfully adjust our systems, facilities and production capacity to meet our customers’ changing requirements. The inability to meet such requirements will have an adverse impact on our business, financial position and results of operations. For example, in the second half of 2018 and throughout 2019, we have seen significant weakening demand in automotive, mobility and consumer market segments, and overall geographic weakness in China and Taiwan. These trends adversely affected our second half 2018 results, year-to-date 2019 results, and are expected to continue to adversely impact our full year 2019 outlook and results as well.

The loss of key personnel could adversely impact our business.
Certain key personnel are critical to our business. Our future operating results depend substantially upon the continued service of our key personnel, many of whom are not bound by employment or non-competition agreements. Our future operating results also depend in significant part upon our ability to attract and retain qualified management, manufacturing, technical, engineering, marketing, sales and support personnel. Competition for qualified personnel, particularly those with technical skills, is intense, and we cannot ensure success in attracting or retaining qualified personnel. In addition, the cost of living in the San Diego and Bay Area, California, Boston, Massachusetts, Rosenheim and Kolbermoor, Germany, La Chaux-de-Fonds, Switzerland and Osaka, Japan areas, where the majority of our engineering personnel are located, is high and we have had difficulty in recruiting prospective employees from other locations. There may be only a limited number of persons with the requisite skills and relevant industry experience to serve in these positions and it may become increasingly difficult for us to hire personnel over time. Our business, financial condition and results of operations could be materially adversely affected by the loss of any of our key employees, by the failure of any key employee to perform in his or her current position, or by our inability to attract and retain skilled employees.

Third parties may violate our proprietary rights or accuse us of infringing upon their proprietary rights.
We rely on patent, copyright, trademark and trade secret laws to establish and maintain proprietary rights in our technology and products. Any of our proprietary rights may expire due to patent life, or be challenged, invalidated or circumvented. In addition, from time-to-time, we receive notices from third parties regarding patent or copyright claims. Any such claims, with or without merit, could be time-consuming to defend, result in costly litigation, divert management’s attention and resources and cause us to incur significant expenses. In the event of a successful claim of infringement against us and our failure or inability to license the infringed technology or to substitute similar non-infringing technology, our business, financial condition and results of operations could be adversely affected.

A majority of our revenues are generated from exports to foreign countries, primarily in Asia, that are subject to economic and political instability and we compete against a number of Asian equipment suppliers.
The majority of our export sales are made to destinations in Asia. Political or economic instability, particularly in Asia, may adversely impact the demand for capital equipment, including equipment of the type we manufacture and market. In addition, we face intense competition from a number of Asian suppliers that have certain advantages over United States (“U.S.”) suppliers, including us. These advantages include, among other things, proximity to customers, lower cost structures, favorable tariffs and affiliation with significantly larger organizations. In addition, changes in the amount or price of semiconductors produced in Asia could impact the profitability or capital equipment spending programs of our foreign and domestic customers.

Unanticipated changes in our tax provisions, enactment of new tax laws, or exposure to additional income tax liabilities could affect our profitability.
We are subject to income and other taxes in the U.S. and numerous foreign jurisdictions. Our tax liabilities are affected by, among other things, the amounts our affiliated entities charge each other for intercompany transactions. Our German subsidiaries income tax returns for 2012 to 2016 are currently under routine examination by tax authorities in Germany. We may be subject to ongoing tax examinations in various jurisdictions. Tax authorities may disagree with our intercompany charges or other matters and assess additional taxes. While we regularly assess the likely outcomes of these examinations to determine the appropriateness of our tax provision, tax audits are inherently uncertain and an unfavorable outcome could occur. An unanticipated, unfavorable outcome in any specific period could harm our operating results for that period or future periods. The financial cost and management attention and time devoted to defending income tax positions may divert resources from our business operations, which could harm our business and profitability. Tax examinations may also impact the timing and/or amount of our refund claims. In addition, our effective tax rate in the future could be adversely affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in the valuation of our deferred tax assets and liabilities, changes in tax laws and the discovery of new information in the course of our tax return preparation process. In particular, the carrying value of our deferred tax assets and the utilization of our net operating loss and credit carryforwards are dependent on our ability to generate future taxable income in the U.S. and other countries. Furthermore, these carryforwards may be subject to annual limitations as a result of changes in Cohu’s ownership. As a result of the acquisition of Xcerra, a greater than 50% cumulative ownership change in Xcerra triggered a significant limitation in the utilization of their net operating loss and research credit carryforwards. Cohu’s ability to use the acquired Xcerra U.S. net operating loss and credit carryforwards is subject to annual limitations as defined in sections 382 and 383 of the Internal Revenue Code.

On December 22, 2017, the Tax Cuts and Jobs Act (“Tax Act”) was signed into law in the United States. The changes in the Tax Act are broad and complex and we continue to examine the impact the Tax Act may have on our business and financial results. Among its many provisions, the Tax Act imposed a mandatory one-time transition tax on undistributed foreign earnings regardless of whether they are repatriated, reduced the U.S. corporate income tax rate from 35% to 21%, imposed limitations on the deductibility of interest and certain other corporate deductions, moved from a “worldwide” system of taxation that generally allows deferral of U.S. tax on foreign earnings until repatriated to a “territorial”/dividend exemption system with a minimum tax that will subject foreign earnings to U.S. tax when earned and created new taxes on certain foreign-sourced earnings and related-party payments, which are referred to as the global intangible low-taxed income tax and the base erosion and anti-abuse tax, respectively. In accordance with applicable SEC guidance (SAB 118), we recorded provisional amounts as of December 30, 2017, however, these provisional amounts were subject to change in 2018, due to, among other things, changes in estimates, interpretations and assumptions we have made, changes in Internal Revenue Service (IRS) interpretations, the issuance of new guidance, legislative actions, changes in accounting standards or related interpretations in response to the Tax Act and future actions by states within the United States that have not currently adopted the Tax Act. During 2018 we completed the accounting for the effects of the Tax Act and recorded an increase in our transition tax liability of approximately $5.1 million that was fully offset by the use of net operating loss carryforwards resulting in no net increase in tax expense. We must continue to address new regulations and interpretations of the Tax Act as they are issued.

Compliance with regulations may impact sales to foreign customers and impose costs.
Certain products and services that we offer require compliance with U.S. and other foreign country export and other regulations. Compliance with complex U.S. and other foreign country laws and regulations that apply to our international sales activities increases our cost of doing business in international jurisdictions and could expose us or our employees to fines and penalties. These laws and regulations include import and export requirements, the U.S. State Department International Traffic in Arms Regulations (“ITAR”) and U.S. and other foreign country laws such as the Foreign Corrupt Practices Act (“FCPA”), and local laws prohibiting corrupt payments to governmental officials. Violations of these laws and regulations could result in fines, criminal sanctions against us, our officers or our employees, prohibitions on the conduct of our business and damage to our reputation. Although we have implemented policies and procedures designed to ensure compliance with these laws, there can be no assurance that our employees, contractors or agents will not violate our policies, or that our policies will be effective in preventing all potential violations. Any such violations could include prohibitions on our ability to offer our products and services to one or more countries, and could also materially damage our reputation, our brand, our international expansion efforts, our ability to attract and retain employees, our business and our operating results. Further, defending against claims of violations of these laws and regulations, even if we are successful, could be time-consuming, result in costly litigation, divert management’s attention and resources and cause us to incur significant expenses.

In addition to government regulations regarding sale and export, we are subject to other regulations regarding our products. For example, the U.S. Securities and Exchange Commission has adopted disclosure rules for companies that use conflict minerals in their products, with substantial supply chain verification requirements if the materials come from, or could have come from, the Democratic Republic of the Congo or adjoining countries. These new rules and verification requirements will impose additional costs on us and on our suppliers, and may limit the sources or increase the cost of materials used in our products. Further, if we are unable to certify that our products are conflict free, we may face challenges with our customers that could place us at a competitive disadvantage, and our reputation may be harmed.

There may be changes in, and uncertainty with respect to, legislation, regulation and governmental policy in the United States.
The change in administration in the United States has resulted and may continue to result in significant changes in, and uncertainty with respect to, legislation, regulation and government policy. Specific legislative and regulatory proposals that could have a material impact on us include, but are not limited to, infrastructure renewal programs; and modifications to international trade policy, such as approvals by the Committee on Foreign Investment in the United States; increased duties, tariffs or other restrictions; public company reporting requirements; environmental regulation and antitrust enforcement.

**** Global economic and political conditions, including trade tariffs and export restrictions, have impacted our business and may continue to have an impact on our business and financial condition.***
In the first nine months of fiscal year 2019, 87% of our revenue was from products shipped to customer locations outside the United States. We also purchase a significant portion of components and subassemblies from suppliers outside the United States. Additionally, a significant portion of our facilities are located outside the United States, including Malaysia, Germany, China and Japan.

The United States and other countries have levied tariffs and taxes on certain goods. General trade tensions between the U.S. and China have been escalating since 2018, with U.S. tariffs on Chinese goods and retaliatory Chinese tariffs on U.S. goods. Higher duties on existing tariffs and further rounds of tariffs have been announced or repeatedly threatened by U.S. and Chinese leaders. Additionally, the U.S. has threatened to impose tariffs on goods imported from other countries, which could also impact our or certain of our customers' operations. If the U.S. were to impose current or additional tariffs on components that we or our suppliers source, our cost for such components would increase. We may also incur increases in manufacturing costs and supply chain risks due to our efforts to mitigate the impact of tariffs on our customers and our operations. Tariffs on our customers' products could also impact their sales of such end products, resulting in lower 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 other countries in retaliation. Further changes in trade policy, tariffs, additional taxes, restrictions on exports or other trade barriers, or restrictions on supplies, equipment, and raw materials including rare earth minerals, may limit our ability to produce products, increase our selling and/or manufacturing costs, decrease margins, reduce the competitiveness of our products, or inhibit our ability to sell products or purchase necessary components and subassemblies, which could have a material adverse effect on our business, results of operations, or financial condition.

Furthermore, On May 16, 2019, the Bureau of Industry and Security ("BIS") of the U.S. Department of Commerce added Huawei to the BIS's Entity List, which imposes limitations on the supply of certain U.S. items and product support to Huawei. Although our sales to Huawei are immaterial, to ensure compliance with the Entity List restrictions, we suspended shipments of all products to Huawei, effective May 16, 2019. We then reviewed our product portfolio to determine whether our products and related support are subject to the Export Administration Regulations ("EAR"), and therefore within the scope of the Entity List restrictions. We have determined that certain products Huawei purchases from us are not subject to the EAR and consequently can be lawfully sold and shipped to Huawei. Accordingly, we have recently resumed shipping certain products to Huawei.

While Huawei remains on the Entity List, and in the absence of a license from the BIS, we may be unable to work with Huawei on future product development, which may have a negative effect on our ability to sell products to Huawei in the future. Entity List restrictions may also encourage Huawei to seek to obtain a greater supply of similar or substitute products from our competitors that are not subject to these restrictions, thereby decreasing our long-term competitiveness as a supplier to Huawei. More broadly, other China-based companies, unrelated to Huawei, may also seek alternative non-U.S. product sources driven by the ongoing unpredictability of U.S.-China trade relations.

We believe that the Entity List trade restrictions enacted during second quarter 2019 had, and will continue to have, an adverse effect on our business in that most of our customers' businesses were disrupted as semiconductor companies evaluated the trade restrictions. We are unable to predict the duration of the export restrictions imposed with respect to Huawei or the long-term effects on our business. Additionally, other companies may be added to the Entity List and/or subject to trade restrictions. Further, there will likely continue to be indirect impacts to our business which we cannot reasonably quantify, including that some of our other customers' products which utilize our solutions may also be impacted by these and other trade restrictions that may be imposed by the U.S., China, or other countries. Restrictions on our ability (or our customers' ability) to sell and ship products to Huawei have had, and may continue to have, an adverse effect on our business, results of operations, or financial condition.

Our business and operations could suffer in the event of cybersecurity breaches.

Attempts by others to gain unauthorized access to information technology systems are becoming more sophisticated and are sometimes successful. These attempts, which might be related to industrial or other espionage, include covertly introducing malware to our computers and networks and impersonating authorized users, among others. We seek to detect and investigate all cybersecurity incidents and to prevent their recurrence, but in some cases, we might be unaware of an incident or its magnitude and effects. The theft, unauthorized use or publication of our intellectual property and/or confidential business information could harm our competitive position, reduce the value of our investment in research and development and other strategic initiatives or otherwise adversely affect our business. To the extent that any security breach results in inappropriate disclosure of our customers' or licensees' confidential information, we may incur liability as a result. In addition, we may be required to devote additional resources to the security of our information technology systems.

Our global Enterprise Resource Management ("ERP") upgrade may adversely affect our business and results of operations or the effectiveness of internal controls over financial reporting.

We are in development stage for the global replacement of our existing ERP solution. The new solution is being developed as an enterprise solution in partnership with a leading provider of ERP tools. Additional investments in enterprise tools that focus on product life-cycle management, our customer experience, and supply chain management are in process to support our growing business. These implementations are extremely complex and time-consuming projects that involve substantial expenditures on software and implementation activities. If we do not effectively implement the system or if the system does not operate as intended, it could result in the loss or corruption of data, delayed order processing and shipments and increased costs. It could also adversely affect our financial reporting systems and our ability to produce financial reports and process transactions, the effectiveness of internal controls over financial reporting, and our business, financial condition, results of operations and cash flows.

The occurrence of natural disasters and geopolitical instability caused by terrorist attacks and other threats may adversely impact our operations and sales.
Our corporate headquarters is located in San Diego, California, our Asian sales and service headquarters is located in Singapore and the majority of our sales are made to destinations in Asia. In addition, we have Asia-based manufacturing plants in Malaysia, Philippines and Japan. These regions are known for being vulnerable to natural disasters and other risks, such as earthquakes, tsunamis, fires and floods, and geopolitical risks, which at times have disrupted the local economies. For example, a significant earthquake or tsunami could materially affect operating results. We are not insured for most losses and business interruptions of this kind, or for geopolitical or terrorism impacts, and presently have limited redundant, multiple site capacity in the event of a disaster. In the event of such disaster, our business would materially suffer.

**** Our financial and operating results may vary and fall below analysts' estimates, or credit rating agencies may change their ratings on Cohu, any of which may cause the price of our common stock to decline or make it difficult to obtain other financing.***
Our operating results may fluctuate from quarter to quarter due to a variety of factors including, but not limited to:

- seasonal, volatile and unpredictable nature of the semiconductor equipment industry;
- timing and amount of orders from customers and shipments to customers;
- customer decisions to cancel orders or push out deliveries;
- inability to recognize revenue due to accounting requirements;
- inventory writedowns;
- unexpected expenses or cost overruns in the introduction and support of products;
- inability to deliver solutions as expected by our customers; and
- intangible and deferred tax asset writedowns.

Due to these factors or other unanticipated events, quarter-to-quarter comparisons of our operating results may not be reliable indicators of our future performance. In addition, from time-to-time our quarterly financial results may fall below the expectations of the securities and industry analysts who publish reports on our company or of investors in general. This could cause the market price of our stock to decline, perhaps significantly.

In addition, as a result of the Credit Facility, we maintain credit ratings with Moody's Investors Service, Inc. ("Moody's") and S&P Global Ratings ("S&P"). The current Moody's and S&P issuer credit ratings for Cohu are B2 and B, respectively. Moody's and S&P downgraded their outlook on Cohu from B1 (to B2) and BB- (to B) on September 19, 2019 and October 16, 2019, respectively. The changes in outlook were primarily the result of Cohu's high leverage following a significant decline in operating performance year-to-date in fiscal 2019, weakness in the semiconductor industry, particularly in Cohu's mobility and automotive segments, depressed customer capital spending, and assumptions regarding Cohu's 2019 cash consumption.

Any further downgrade of Cohu's credit ratings or rating outlooks may materially and adversely affect the market price of our equity and the availability, cost or interest rate of other credit or financing. This could make it significantly more costly for Cohu or its subsidiaries to borrow money or to enter into new credit facilities and to raise certain other types of capital and/or complete additional financings. Any such negative credit rating actions and the reasons for such actions could materially and adversely affect our cash flows, results of operations and financial condition and our ability to pay the principal of and interest on, our debt.

We have experienced significant volatility in our stock price.

A variety of factors may cause the price of our stock to be volatile. The stock market in general, and the market for shares of high-technology companies in particular, including ours, have experienced extreme price fluctuations, which have often been unrelated to the operating performance of affected companies. During the three-year period ended September 28, 2019, the price of our common stock has ranged from $27.83 to $10.72. The price of our stock may be more volatile than the stock of other companies due to, among other factors, the unpredictable, volatile and seasonal nature of the semiconductor industry, our significant customer concentration, intense competition in the test handler industry, our limited backlog and our relatively low daily stock trading volume. The market price of our common stock is likely to continue to fluctuate significantly in the future, including fluctuations related and unrelated to our performance.

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

None.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

2.1	Agreement and Plan of Merger by and among Cohu, Inc., Xavier Acquisition Corporation, and Xcerra Corporation, dated as of May 7, 2018, incorporated herein by reference to Exhibit 2.1 from the Cohu, Inc. Form 8-K filed with the Securities and Exchange Commission on May 8, 2018
10.1	Credit and Guaranty Agreement dated as of October 1, 2018, by and among Cohu, Inc., Certain Subsidiaries of Cohu, Inc. and Deutsche Bank AG New York Branch, incorporated herein by reference to Exhibit 10.1 from the Cohu, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 7, 2018
10.2	Pledge and Security Agreement dated as of October 1, 2018, by and among Cohu, Inc., Certain Subsidiaries of Cohu, Inc. and Deutsche Bank AG New York Branch, incorporated herein by reference to Exhibit 10.2 from the Cohu, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 7, 2018
31.1	Certification pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002
31.2	Certification pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002
32.1	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

	COHU, INC.
	(Registrant)
Date: November 6, 2019	/s/ Luis A. Müller
	Luis A. Müller President & Chief Executive Officer
Date: November 6, 2019	/s/ Jeffrey D. Jones
	Jeffrey D. Jones Vice President, Finance & Chief Financial Officer (Principal Financial & Accounting Officer)

Exhibit 31.1

COHU, INC.
SARBANES-OXLEY ACT SECTION 302(a)
CERTIFICATION

I, Luis A. Müller, certify that:

1. I have reviewed this Form 10-Q of Cohu, Inc.;

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: November 6, 2019

/s/ Luis A. Müller
Luis A. Müller
President & Chief Executive Officer

Exhibit 31.2

COHU, INC.
SARBANES-OXLEY ACT SECTION 302(a)
CERTIFICATION

I, Jeffrey D. Jones, certify that:

1. I have reviewed this Form 10-Q of Cohu, Inc.;

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: November 6, 2019

/s/ Jeffrey D. Jones
Jeffrey D. Jones
Vice President Finance & Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002
(18 U.S.C. SECTION 1350)

In connection with the accompanying Quarterly Report of Cohu, Inc. (the "Company") on Form 10-Q for the fiscal quarter ended September 28, 2019 (the "Report"), I, Luis A. Müller, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, based on 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: November 6, 2019

/s/ Luis A. Müller

Luis A. Müller,
President & Chief Executive Officer

Exhibit 32.2

CERTIFICATION PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002
(18 U.S.C. SECTION 1350)

In connection with the accompanying Quarterly Report of Cohu, Inc. (the "Company") on Form 10-Q for the fiscal quarter ended September 28, 2019 (the "Report"), I, Jeffrey D. Jones, Vice President Finance & Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, based on 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: November 6, 2019

/s/ Jeffrey D. Jones

Jeffrey D. Jones,
Vice President Finance & Chief Financial Officer