

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, DC 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 30, 2019

OR

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

Commission File Number: 001-37956

XPERI CORPORATION

(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

3025 Orchard Parkway, San Jose, California
(Address of Principal Executive Offices)

81-4465732
(I.R.S. Employer
Identification No.)

95134
(Zip Code)

(408) 321-6000

(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock (par value \$0.001 per share)	XPER	Nasdaq Global Select Market

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

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

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

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

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

The number of shares outstanding of the registrant's common stock as of October 30, 2019 was 49,542,291.

XPERI CORPORATION
FORM 10-Q — QUARTERLY REPORT
FOR THE QUARTER ENDED SEPTEMBER 30, 2019
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PART I – FINANCIAL INFORMATION

Item 1. Financial Statements

XPERI CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Nine Months Ended	
	September 30, 2019	September 30, 2018
Cash flows from operating activities:		
Net loss	\$ (47,613)	\$ (83,049)
Adjustments to reconcile net loss to net cash from operating activities:		
Depreciation of property and equipment	5,056	5,073
Amortization of intangible assets	75,919	81,573
Stock-based compensation expense	22,832	22,080
Deferred income taxes	(43,101)	(21,247)
Other	1,484	2,981
Changes in operating assets and liabilities:		
Accounts receivable	9,202	(10,234)
Unbilled contracts receivable, net	96,905	93,005
Other assets	2,726	(479)
Accounts payable	626	(872)
Accrued and other liabilities	(17,402)	(18,747)
Deferred revenue	(2,420)	(1,451)
Net cash from operating activities	<u>104,214</u>	<u>68,633</u>
Cash flows from investing activities:		
Purchases of property and equipment	(7,956)	(2,451)
Proceeds from sale of property and equipment	55	—
Acquisition, net of cash acquired	—	(500)
Purchases of intangible assets	—	(3,350)
Purchases of short-term investments	(34,475)	(20,095)
Proceeds from sales of investments	6,833	8,540
Proceeds from maturities of investments	22,490	19,675
Net cash from investing activities	<u>(13,053)</u>	<u>1,819</u>
Cash flows from financing activities:		
Dividend paid	(29,588)	(29,508)
Repayment of debt	(100,000)	(100,000)
Contingent consideration payments after acquisition	(1,200)	—
Proceeds from exercise of stock options	672	8,004
Proceeds from employee stock purchase program	5,329	5,197
Repurchase of common stock	(4,282)	(40,539)
Net cash from financing activities	<u>(129,069)</u>	<u>(156,846)</u>
Net decrease in cash and cash equivalents	(37,908)	(86,394)
Cash and cash equivalents at beginning of period	113,625	138,260
Cash and cash equivalents at end of period	<u>\$ 75,717</u>	<u>\$ 51,866</u>
Supplemental disclosure of cash flow information:		
Interest paid	\$ 16,517	\$ 16,949
Income taxes paid, net of refunds	<u>\$ 12,374</u>	<u>\$ 12,768</u>

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

XPERI CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except for par value)
(unaudited)

	September 30, 2019	December 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 75,717	\$ 113,625
Short-term investments	46,751	40,739
Accounts receivable, net	21,015	30,294
Unbilled contracts receivable	146,493	195,436
Other current assets	15,329	17,434
Total current assets	305,305	397,528
Long-term unbilled contracts receivable	35,459	86,280
Property and equipment, net	33,807	31,037
Operating lease right-of-use assets	18,655	—
Intangible assets, net	251,802	327,720
Goodwill	385,784	385,784
Other assets	7,336	6,758
Total assets	<u>\$ 1,038,148</u>	<u>\$ 1,235,107</u>
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 3,390	\$ 2,764
Accrued legal fees	1,640	2,920
Accrued liabilities	32,001	45,336
Deferred revenue	710	3,130
Total current liabilities	37,741	54,150
Long-term deferred tax liabilities	23,092	64,994
Long-term debt, net	384,065	482,193
Noncurrent operating lease liabilities	14,383	—
Other long-term liabilities	15,908	15,623
Total liabilities	<u>475,189</u>	<u>616,960</u>
Commitments and contingencies (Note 14)		
Xperi stockholders' equity:		
Preferred stock: \$0.001 par value; 10,000 shares authorized and no shares issued and outstanding	—	—
Common stock: \$0.001 par value; 150,000 shares authorized; 63,527 and 62,212 shares issued, respectively, and 49,536 and 48,408 shares outstanding, respectively	63	62
Additional paid-in capital	759,541	730,695
Treasury stock at cost: 13,991 and 13,804 shares of common stock at each period end, respectively	(368,477)	(364,195)
Accumulated other comprehensive loss	(7)	(328)
Retained earnings	174,243	253,208
Total Xperi stockholders' equity	565,363	619,442
Noncontrolling interest	(2,404)	(1,295)
Total equity	562,959	618,147
Total liabilities and equity	<u>\$ 1,038,148</u>	<u>\$ 1,235,107</u>

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

XPERI CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share amounts)
(unaudited)

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Revenue:				
Royalty and license fees	\$ 57,867	\$ 72,365	\$ 189,549	\$ 201,851
Total revenue	<u>57,867</u>	<u>72,365</u>	<u>189,549</u>	<u>201,851</u>
Operating expenses:				
Cost of revenue	1,505	5,003	6,241	9,407
Research, development and other related costs	26,369	24,189	79,112	75,874
Selling, general and administrative	28,847	28,084	88,069	93,262
Amortization expense	25,146	27,208	75,919	81,573
Litigation expense	1,527	7,642	4,048	21,593
Total operating expenses	<u>83,394</u>	<u>92,126</u>	<u>253,389</u>	<u>281,709</u>
Operating loss	(25,527)	(19,761)	(63,840)	(79,858)
Interest expense	(5,506)	(6,343)	(18,390)	(18,861)
Other income and expense, net	429	1,737	7,537	7,120
Loss before taxes	(30,604)	(24,367)	(74,693)	(91,599)
Benefit from income taxes	(14,583)	(2,591)	(27,080)	(8,550)
Net loss	\$ (16,021)	\$ (21,776)	\$ (47,613)	\$ (83,049)
Less: net loss attributable to noncontrolling interest	(407)	—	(1,095)	—
Net loss attributable to Xperi	<u>\$ (15,614)</u>	<u>\$ (21,776)</u>	<u>\$ (46,518)</u>	<u>\$ (83,049)</u>
Loss per share attributable to Xperi:				
Basic	\$ (0.32)	\$ (0.44)	\$ (0.95)	\$ (1.69)
Diluted	<u>\$ (0.32)</u>	<u>\$ (0.44)</u>	<u>\$ (0.95)</u>	<u>\$ (1.69)</u>
Weighted average number of shares used in per share calculations-basic	<u>49,459</u>	<u>48,958</u>	<u>49,036</u>	<u>49,005</u>
Weighted average number of shares used in per share calculations-diluted	<u>49,459</u>	<u>48,958</u>	<u>49,036</u>	<u>49,005</u>

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

XPERI CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(in thousands)
(unaudited)

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Net loss	\$ (16,021)	\$ (21,776)	\$ (47,613)	\$ (83,049)
Other comprehensive income (loss):				
Net unrealized gains (losses) on available-for-sale debt securities, net of tax	53	74	321	(79)
Other comprehensive income (loss)	53	74	321	(79)
Comprehensive loss	(15,968)	(21,702)	(47,292)	(83,128)
Less: comprehensive loss attributable to noncontrolling interest	(407)	—	(1,095)	—
Comprehensive loss attributable to Xperi	<u>\$ (15,561)</u>	<u>\$ (21,702)</u>	<u>\$ (46,197)</u>	<u>\$ (83,128)</u>

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

XPERI CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF EQUITY
(in thousands)
(unaudited)

	Total Xperi Stockholders' Equity								
	Common Stock		Additional Paid-In Capital	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Noncontrolling Interest	Total Equity
	Shares	Amount		Shares	Amount				
Three Months Ended September 30, 2019									
Balance at July 1, 2019	49,338	\$ 63	\$ 749,187	13,990	\$ (368,459)	\$ (60)	\$ 199,759	\$ (2,001)	\$ 578,489
Issuance of subsidiary shares to noncontrolling interest	—	—	(4)	—	—	—	—	4	—
Net loss	—	—	—	—	—	—	(15,614)	(407)	(16,021)
Other comprehensive income	—	—	—	—	—	53	—	—	53
Cash dividends paid on common stock (\$0.20 per share)	—	—	—	—	—	—	(9,902)	—	(9,902)
Issuance of common stock in connection with exercise of stock options	9	—	152	—	—	—	—	—	152
Issuance of common stock in connection with employee stock purchase plan	158	—	2,218	—	—	—	—	—	2,218
Issuance of restricted stock, net of shares canceled	32	—	—	—	—	—	—	—	—
Repurchases of common stock, shares exchanged	(1)	—	—	1	(18)	—	—	—	(18)
Stock-based compensation expense	—	—	7,988	—	—	—	—	—	7,988
Balance at September 30, 2019	49,536	\$ 63	\$ 759,541	13,991	\$ (368,477)	\$ (7)	\$ 174,243	\$ (2,404)	\$ 562,959

	Total Xperi Stockholders' Equity								
	Common Stock		Additional Paid-In Capital	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Noncontrolling Interest	Total Equity
	Shares	Amount		Shares	Amount				
Nine Months Ended September 30, 2019									
Balance at January 1, 2019	48,408	\$ 62	\$ 730,695	13,804	\$ (364,195)	\$ (328)	\$ 253,208	\$ (1,295)	\$ 618,147
Issuance of subsidiary shares to noncontrolling interest	—	—	14	—	—	—	—	(14)	—
Net loss	—	—	—	—	—	—	(46,518)	(1,095)	(47,613)
Other comprehensive income	—	—	—	—	—	321	—	—	321
Other (1)	—	—	—	—	—	—	(2,859)	—	(2,859)
Cash dividends paid on common stock (\$0.60 per share)	—	—	—	—	—	—	(29,588)	—	(29,588)
Issuance of common stock in connection with exercise of stock options	40	—	671	—	—	—	—	—	671
Issuance of common stock in connection with employee stock purchase plan	386	—	5,329	—	—	—	—	—	5,329
Issuance of restricted stock, net of shares canceled	889	1	—	—	—	—	—	—	1
Repurchases of common stock, shares exchanged	(187)	—	—	187	(4,282)	—	—	—	(4,282)
Stock-based compensation expense	—	—	22,832	—	—	—	—	—	22,832
Balance at September 30, 2019	49,536	\$ 63	\$ 759,541	13,991	\$ (368,477)	\$ (7)	\$ 174,243	\$ (2,404)	\$ 562,959

(1) Refer to "Note 1 – The Company and Basis of Presentation."

XPERI CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF EQUITY (continued)
(in thousands)
(unaudited)

	Total Xperi Stockholders' Equity							
	Common Stock		Additional Paid-In Capital	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Equity
	Shares	Amount		Shares	Amount			
Three Months Ended September 30, 2018								
Balance at July 1, 2018	48,962	\$ 62	\$ 712,687	13,032	\$ (352,667)	\$ (456)	\$ 211,722	\$ 571,348
Net loss	—	—	—	—	—	—	(21,776)	(21,776)
Other comprehensive income	—	—	—	—	—	74	—	74
Cash dividends paid on common stock (\$0.20 per share)	—	—	—	—	—	—	(9,819)	(9,819)
Issuance of common stock in connection with exercise of stock options	—	—	4	—	—	—	—	4
Issuance of common stock in connection with employee stock purchase plan	127	—	1,795	—	—	—	—	1,795
Issuance of restricted stock, net of shares canceled	37	—	—	—	—	—	—	—
Repurchases of common stock, shares exchanged	(2)	—	—	2	(37)	—	—	(37)
Repurchases of common stock	(461)	—	—	461	(7,232)	—	—	(7,232)
Stock-based compensation expense	—	—	7,453	—	—	—	—	7,453
Balance at September 30, 2018	<u>48,663</u>	<u>\$ 62</u>	<u>\$ 721,939</u>	<u>13,495</u>	<u>\$ (359,936)</u>	<u>\$ (382)</u>	<u>\$ 180,127</u>	<u>\$ 541,810</u>

	Total Xperi Stockholders' Equity							
	Common Stock		Additional Paid-In Capital	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Equity
	Shares	Amount		Shares	Amount			
Nine Months Ended September 30, 2018								
Balance at January 1, 2018	49,103	\$ 60	\$ 686,660	11,505	\$ (319,397)	\$ (303)	\$ 68,556	\$ 435,576
Cumulative-effect adjustment from adoption of ASU 2014-09	—	—	—	—	—	—	224,128	224,128
Net loss	—	—	—	—	—	—	(83,049)	(83,049)
Other comprehensive loss	—	—	—	—	—	(79)	—	(79)
Cash dividends paid on common stock (\$0.60 per share)	—	—	—	—	—	—	(29,508)	(29,508)
Issuance of common stock in connection with exercise of stock options	427	1	8,002	—	—	—	—	8,003
Issuance of common stock in connection with employee stock purchase plan	306	—	5,197	—	—	—	—	5,197
Issuance of restricted stock, net of shares canceled	817	1	—	—	—	—	—	1
Repurchases of common stock, shares exchanged	(157)	—	—	157	(3,358)	—	—	(3,358)
Repurchases of common stock	(1,833)	—	—	1,833	(37,181)	—	—	(37,181)
Stock-based compensation expense	—	—	22,080	—	—	—	—	22,080
Balance at September 30, 2018	<u>48,663</u>	<u>\$ 62</u>	<u>\$ 721,939</u>	<u>13,495</u>	<u>\$ (359,936)</u>	<u>\$ (382)</u>	<u>\$ 180,127</u>	<u>\$ 541,810</u>

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

XPERI CORPORATION
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

NOTE 1 – THE COMPANY AND BASIS OF PRESENTATION

Xperi Corporation (the “Company”) licenses its innovative products, technologies and inventions to global electronics companies which, in turn, integrate the technologies into their own consumer electronics and semiconductor products. The Company’s technologies and inventions are widely adopted and used every day by millions of people. The Company’s audio technologies have shipped in billions of devices for the home, mobile and automotive markets. The Company’s imaging technologies have been embedded in billions of smartphones and other mobile devices. The Company’s semiconductor packaging and interconnect technologies have been licensed to more than 100 customers and have shipped in over 100 billion semiconductor chips.

The accompanying interim unaudited condensed consolidated financial statements as of September 30, 2019 and 2018, and for the three and nine months then ended, have been prepared by the Company in accordance with generally accepted accounting principles (“GAAP”) in the United States (“U.S.”) for interim financial information. The amounts as of December 31, 2018 have been derived from the Company’s annual audited financial statements. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted in accordance with such rules and regulations. In the opinion of management, the accompanying unaudited condensed consolidated financial statements reflect all adjustments necessary (consisting of normal recurring adjustments) to state fairly the financial position of the Company and its results of operations and cash flows as of and for the periods presented. These financial statements should be read in conjunction with the annual audited financial statements and notes thereto as of and for the year ended December 31, 2018, included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2018, filed on February 20, 2019 (the “Form 10-K”).

The results of operations for the three and nine months ended September 30, 2019 are not necessarily indicative of the results that may be expected for the full year ending December 31, 2019 or any future period and the Company makes no representations related thereto.

In the fourth quarter of 2018, the Company funded a new entity and issued shares to non-controlling interests. At the end of the fourth quarter of 2018, the entity was approximately 85% owned by the Company. As a result of issuing new shares in such entity to noncontrolling interests during the first nine months of 2019, the Company’s ownership interest of the entity decreased to approximately 83% as of September 30, 2019. The operating results of this entity have been consolidated in the Company’s consolidated financial statements since the fourth quarter of 2018.

In the first quarter of 2019, the Company recorded an out-of-period adjustment to decrease current unbilled receivables and decrease retained earnings by \$2.9 million to correct an error that originated in the first quarter of 2018 in connection with its adoption of Accounting Standards Update (“ASU”) No. 2014-09 (Topic 606) “Revenue from Contracts with Customers.” The adjustment relates to an error in the Company’s interpretation of the payment terms of a contract entered into in a prior year. The Company determined that the error was not material to any of its prior annual and interim period financial statements, and the impact of correcting it is not considered to be material to the financial statements for the three and nine months ended September 30, 2019.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The Company’s significant accounting policies are detailed in “Note 2 - *Summary of Significant Accounting Policies*” in its Form 10-K for the year ended December 31, 2018. Significant changes to its accounting policies as a result of adopting ASU No. 2016-02, “*Leases*” (Topic 842) are discussed below and in Note 13 - *Leases*.

Recently Adopted Accounting Pronouncements

In June 2018, the Financial Accounting Standards Board (“FASB”) issued ASU No. 2018-07, “*Stock-based Compensation: Improvements to Nonemployee Share-based Payment Accounting*,” which amends the existing accounting standards for share-based payments to nonemployees. This ASU aligns much of the guidance on measuring and classifying nonemployee awards with that of awards to employees. Under the new guidance, the measurement of nonemployee equity awards is fixed on the grant date. The effective date for the standard is for interim periods in fiscal years beginning after December 15, 2018, with early adoption permitted, but no earlier than the Company’s adoption date of Topic 606. The new guidance is required to be applied retrospectively with the cumulative effect recognized at the date of initial application. The Company adopted this

standard as of January 1, 2019. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In February 2016, the FASB issued ASU No. 2017-12, "*Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities*," which expands strategies that qualify for hedge accounting, changes how many hedging relationships are presented in the financial statements, and simplifies the application of hedge accounting in certain situations. On January 1, 2019, the Company adopted the amendments to Topic 815. Adoption did not have a material impact on the Company's consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, "*Leases*" (Topic 842), which generally requires companies to recognize operating and financing lease liabilities and corresponding right-of-use (ROU) assets on the balance sheet. Under the standard, disclosures are required to meet the objective of enabling users of financial statements to assess the amount, timing, and uncertainty of cash flows arising from leases. On January 1, 2019, the Company adopted the new standard using the modified retrospective transition approach and elected the transition option, under which the Company initially applied the transition requirements to all leases that existed at December 31, 2018, with any residual effects of initially applying Topic 842 recognized as a cumulative effect adjustment to the opening balance of retained earnings on January 1, 2019.

The Company elected the package of practical expedients permitted under the transition guidance within the new standard, which among other things, allowed it to carry forward the historical lease classification. Under the optional transition method, the Company opted to continue to apply the legacy guidance in ASC 840, Leases, including its disclosure requirements, in the comparative periods presented in the year it adopted the new leases standard, and therefore did not restate prior period results.

The most significant impact from adopting Topic 842 was the initial recognition of operating lease ROU assets and operating lease liabilities of \$17.6 million and \$18.8 million, respectively, as of January 1, 2019. Operating lease liabilities consist of both current and noncurrent portions with the current portion included in the balance of accrued liabilities. The standard did not materially impact the Company's Condensed Consolidated Statements of Operations and had no impact on cash flows.

The cumulative effect of the changes made to the Company's Condensed Consolidated Balance Sheet as of January 1, 2019 for the adoption of Topic 842 was as follows (in thousands):

	Balance at December 31, 2018	Adjustments due to Topic 842	Balance at January 1, 2019
Assets			
Operating lease right-of-use assets	\$ —	\$ 17,594	\$ 17,594
Liabilities			
Accrued liabilities	\$ 45,336	\$ 3,858 (1)	\$ 49,194
Noncurrent operating lease liabilities	\$ —	\$ 13,736	\$ 13,736

(1) Consists of a debit adjustment of \$1.2 million to deferred rent to eliminate the existing balance and a credit adjustment of \$5.1 million to record the current portion of operating lease liabilities.

Recent Accounting Pronouncements

In September 2016, the FASB issued ASU No. 2016-13, "*Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*" ("ASU 2016-13"), which introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments. It also modifies the impairment model for available-for-sale debt securities and provides for a simplified accounting model for purchased financial assets with credit deterioration since their origination. The company will adopt ASU 2016-13 on January 1, 2020 by using the modified retrospective approach to record a cumulative-effect adjustment, if any, in retained earnings in the Consolidated Balance Sheet. Based on the work completed to date and current expectations of future economic conditions, the Company does not expect the adoption of this standard will have a material impact on its consolidated financial statements.

NOTE 3 – REVENUE

Revenue Recognition

The Company derives its revenue primarily from royalty and license fees for rights to use the Company's intellectual property and technologies ("IP"). Revenue is recognized upon transfer of control of promised products, services or IP rights to customers in an amount that reflects the consideration the Company expects to receive in exchange for those products, services or licensing of the IP rights.

Certain licensees have entered into fixed fee or minimum guarantee arrangements, whereby licensees pay a fixed fee for the right to incorporate the Company's technology in the licensee's products over the license term. In arrangements with a minimum guarantee, the fixed fee component corresponds to a minimum number of units or dollars that the customer must produce or pay, with additional per-unit fees for any units or dollars exceeding the minimum. In most cases, the customer pays the fixed license fee in specified installments over the license term. For both fixed fee and minimum guarantee agreements, the Company recognizes the full fixed fee as revenue at the beginning of the license term, when the licensee has the right to use the IP and begins to benefit from the license.

If the contract term of a fixed fee or minimum guarantee arrangement is longer than one year, the Company also considers the scheduled payment arrangements to determine whether a significant financing component exists. In general, if the payment arrangements extend beyond the initial twelve months of the contract, the Company treats a portion of the payments as a significant financing component. When the payments are expected to be received within one year or less, the Company does not adjust the promised amount of consideration for the effects of a financing component. The discount rate used for each arrangement reflects the rate that would be used in a separate financing transaction between the Company and the licensee at contract inception and takes into account the credit characteristics of the licensee and market interest rates as of the date of the agreement. As such, the amount of fixed fee revenue recognized at the beginning of the license term will be reduced by the calculated financing component. As payments are received from the licensee, the Company recognizes a portion of the financing component as interest income, reported as other income and expense in the Consolidated Statements of Operations.

For certain licensees, royalty revenues are generated based on a licensee's production or shipment of licensed products incorporating the Company's IP, technologies or software. Licensees with a per-unit arrangement pay a per-unit royalty for each product manufactured or sold, as set forth in its license agreement. Licensees generally report manufacturing or sales information in the quarter subsequent to when the production or shipment activity takes place. The Company estimates the royalties earned each quarter based on its forecast of manufacturing and sales activity incurred by its licensees in that quarter. Any differences between actual royalties owed by a licensee and the Company's quarterly estimate are recognized in the following quarter, when the licensee's royalty report is received. Estimating licensees' quarterly royalties prior to receiving the royalty reports requires the Company to make significant assumptions and judgments that could have a material impact on the amount of revenue it reports on a quarterly basis.

The Company actively monitors and enforces its IP, including seeking appropriate compensation from customers that have under-reported royalties owed under a license agreement and from third parties that utilize the Company's intellectual property without a license. As a result of these activities, the Company may, from time to time, recognize revenue from payments resulting from periodic compliance audits of licensees for underreporting royalties incurred in prior periods, as part of a settlement of a patent infringement dispute, or from legal judgments in a license dispute. These recoveries and settlements may cause revenue to be higher than expected during a particular reporting period and such recoveries may not occur in subsequent periods. The Company recognizes revenue from recoveries when a binding agreement has been executed and the Company concludes collection under that agreement is likely.

In some instances, the Company may enter into license agreements containing multiple performance obligations that include engineering services in addition to a technology or software license. For such arrangements where all components are capable of being distinct and accounted for as separate performance obligations, the Company allocates revenue to each performance obligation based on its relative standalone selling price. The Company generally determines standalone selling prices based on the prices ordinarily charged to customers, or in some cases by applying a reasonable cost-plus margin. The consideration for engineering services is recognized as the underlying performance obligations are satisfied. Generally, the Company satisfies performance obligations over time and therefore recognizes revenue over time by measuring the progress toward completion of the performance obligation at each reporting period.

From time to time, the Company enters into arrangements with licensees in which the Company pays consideration to the licensee. Such payments can take the form of marketing development funds or various rebate incentives. The Company typically accounts for consideration paid to its licensees as a reduction to the transaction price and revenue, unless the payment to the licensee is in exchange for a distinct good or service that the licensee transfers to the Company. In cases where the consideration paid to the licensee is variable, the Company estimates the variable consideration based on the terms of the arrangement and expectations of future outcomes. The Company recognizes the reduction to revenue when it recognizes revenue for transfer of control of promised products, services or IP rights to the licensee.

Revenue is recognized gross of withholding taxes that are remitted directly by the Company's licensees to a local tax authority.

For additional detail on the Company's revenue disaggregated by geographic location, refer to Note 15 - "*Segment and Geographic Information.*"

Contract Balances

Unbilled Contracts Receivable

Timing of revenue recognition may differ significantly from the timing of invoicing to customers. Accounts receivable, net, includes amounts billed and currently due from customers. Unbilled contracts receivable represents unbilled amounts expected to be received from customers in future periods, where the revenue recognized to date (or cumulative adjustments to retained earnings in the initial period of adopting Topic 606) exceeds the amount billed, and right to payment is subject to the underlying contractual terms. Unbilled contracts receivable amounts may not exceed their net realizable value and are classified as long-term assets if the payments are expected to be received more than one year from the reporting date.

Deferred Revenue

Deferred revenue includes payments made by licensees for which the corresponding performance obligations have not yet been fully satisfied by the Company and typically arises where performance obligations are satisfied over time.

Additional Disclosures Under Topic 606

The following table presents additional revenue and contract disclosures (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Revenue recognized in the period from:				
Amounts included in deferred revenue at the beginning of the period	\$ 175	\$ 3,852	\$ 3,130	\$ 1,602
Performance obligations satisfied in previous periods (true ups and licensee reporting adjustments)*	\$ 1,349	\$ 3,375	\$ 2,941	\$ 3,001

*True ups represent the differences between the Company's quarterly estimates of per unit royalty revenue and actual production/sales-based royalties reported by licensees in the following period. Licensee reporting adjustments represent corrections or revisions to previously reported per unit royalties by licensees, generally resulting from the Company's inquiries or compliance audits.

Remaining revenue under contracts with performance obligations represents the aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) under the Company's engineering services contracts. The Company's remaining revenue under contracts with performance obligations was as follows (in thousands):

	As of	
	September 30, 2019	December 31, 2018
Revenue from contracts with performance obligations expected to be satisfied in:		
One year or less	\$ 974	\$ 3,080
More than one year but less than two years	169	2,289
Total	\$ 1,143	\$ 5,369

Practical Expedients

The Company expenses sales commissions when incurred because the amortization period generally would have been one year or less. In addition, sales commissions have historically not been a significant expense and are not contemplated to be significant in the future. Sales commissions are recorded in selling, general and administrative expenses in the Condensed Consolidated Statements of Operations.

NOTE 4 – COMPOSITION OF CERTAIN FINANCIAL STATEMENT CAPTIONS

Other current assets consisted of the following (in thousands):

	<u>September 30, 2019</u>	<u>December 31, 2018</u>
Prepaid income taxes	\$ 3,982	\$ 6,768
Prepaid expenses	7,328	8,293
Other	4,019	2,373
	<u>\$ 15,329</u>	<u>\$ 17,434</u>

Property and equipment, net, consisted of the following (in thousands):

	<u>September 30, 2019</u>	<u>December 31, 2018</u>
Equipment, furniture and other	\$ 33,860	\$ 28,798
Building and improvements	18,258	18,258
Land	5,300	5,300
Leasehold improvements	8,043	6,367
	<u>65,461</u>	<u>58,723</u>
Less: accumulated depreciation and amortization	(31,654)	(27,686)
	<u>\$ 33,807</u>	<u>\$ 31,037</u>

Depreciation and amortization expense for the three months ended September 30, 2019 and 2018 amounted to \$1.6 million and \$1.6 million, respectively.

Depreciation and amortization expense for the nine months ended September 30, 2019 and 2018 amounted to \$5.1 million and \$5.1 million, respectively.

Accrued liabilities consisted of the following (in thousands):

	<u>September 30, 2019</u>	<u>December 31, 2018</u>
Employee compensation and benefits	\$ 13,022	\$ 26,858
Third-party royalties	4,654	7,140
Current portion of operating lease liabilities	5,784	—
Accrued expenses	4,822	3,994
Other	3,719	7,344
	<u>\$ 32,001</u>	<u>\$ 45,336</u>

Accumulated other comprehensive loss consisted of the following (in thousands):

	<u>September 30, 2019</u>	<u>December 31, 2018</u>
Unrealized loss on available-for-sale debt securities, net of tax	\$ (7)	\$ (328)
	<u>\$ (7)</u>	<u>\$ (328)</u>

Other income and expense, net, consisted of the following (in thousands):

	<u>Three Months Ended,</u>		<u>Nine Months Ended,</u>	
	<u>September 30, 2019</u>	<u>September 30, 2018</u>	<u>September 30, 2019</u>	<u>September 30, 2018</u>
Interest income from significant financing components under Topic 606	\$ 906	\$ 1,577	\$ 4,626	\$ 5,876
Interest income from investments	420	233	1,702	697
Realized and unrealized gain (loss) on marketable equity securities	(1,060)	(566)	563	(566)
Other income	163	493	646	1,113
	<u>\$ 429</u>	<u>\$ 1,737</u>	<u>\$ 7,537</u>	<u>\$ 7,120</u>

NOTE 5 – FINANCIAL INSTRUMENTS

The Company has investments in debt securities which include corporate bonds and notes, treasury and agency notes and bills, commercial paper, certificates of deposit, and in equity securities consisting of money market funds and common equity securities of a publicly traded Japanese company. The Company classifies its debt securities as available-for-sale, which are accounted for at fair value with unrealized gains and losses recognized in accumulated other comprehensive gain or loss on the Condensed Consolidated Balance Sheets. Under ASU 2016-01 (Topic 321), equity securities are measured at fair value with unrealized gains and losses recognized in other income and expense, net, on the Condensed Consolidated Statement of Operations.

The following is a summary of marketable securities at September 30, 2019 and December 31, 2018 (in thousands):

	September 30, 2019			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Values
Marketable securities				
Corporate bonds and notes	\$ 41,038	\$ 26	\$ (32)	\$ 41,032
Commercial paper	23,985	5	(6)	23,984
Total debt securities	<u>65,023</u>	<u>31</u>	<u>(38)</u>	<u>65,016</u>
Money market funds	3,022	—	—	3,022
Marketable equity securities	3,405	—	(1,730)	1,675
Total equity securities	<u>6,427</u>	<u>—</u>	<u>(1,730)</u>	<u>4,697</u>
Total marketable securities	<u>\$ 71,450</u>	<u>\$ 31</u>	<u>\$ (1,768)</u>	<u>\$ 69,713</u>
Reported in:				
Cash and cash equivalents				\$ 22,962
Short-term investments				46,751
Total marketable securities				<u>\$ 69,713</u>

	December 31, 2018			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Values
Marketable securities				
Corporate bonds and notes	\$ 28,623	\$ —	\$ (275)	\$ 28,348
Commercial paper	2,999	—	—	2,999
Treasury and agency notes and bills	6,000	—	(53)	5,947
Total debt securities	<u>37,622</u>	<u>—</u>	<u>(328)</u>	<u>37,294</u>
Money market funds	11,499	—	—	11,499
Marketable equity securities	5,662	—	(2,217)	3,445
Total equity securities	<u>17,161</u>	<u>—</u>	<u>(2,217)</u>	<u>14,944</u>
Total marketable securities	<u>\$ 54,783</u>	<u>\$ —</u>	<u>\$ (2,545)</u>	<u>\$ 52,238</u>
Reported in:				
Cash and cash equivalents				\$ 11,499
Short-term investments				40,739
Total marketable securities				<u>\$ 52,238</u>

At September 30, 2019 and December 31, 2018, the Company had \$122.5 million and \$154.4 million, respectively, in cash, cash equivalents and short-term investments. These balances include \$52.8 million and \$102.1 million in cash held in operating accounts not included in the tables above at September 30, 2019 and December 31, 2018, respectively.

Debt Securities

The gross realized gains and losses on sales of marketable debt securities were not significant during the three and nine months ended September 30, 2019 and 2018, respectively.

Unrealized losses on marketable debt securities were \$0.1 million and \$0.3 million, net of tax, as of September 30, 2019 and December 31, 2018, respectively. These amounts were related to temporary fluctuations in value of available-for-sale securities and were due primarily to changes in interest rates and market and credit conditions of the underlying securities. Certain investments with a temporary decline in value are not considered to be other-than-temporarily impaired as of September 30, 2019 because the Company has the intent and ability to hold these investments to allow for recovery, does not anticipate having to sell these securities with unrealized losses and continues to receive interest at the maximum contractual rate. For the three and nine months ended September 30, 2019 and 2018, respectively, the Company did not record any impairment charges related to its marketable debt securities.

The following table summarizes the fair value and gross unrealized losses related to individual available-for-sale debt securities at September 30, 2019 and December 31, 2018, which have been in a continuous unrealized loss position, aggregated by investment category and length of time (in thousands):

	Less Than 12 Months		12 Months or More		Total	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
September 30, 2019						
Corporate bonds and notes	\$ 16,412	\$ (18)	\$ 13,560	\$ (14)	\$ 29,972	\$ (32)
Commercial paper	21,682	(6)	—	—	21,682	(6)
Total	\$ 38,094	\$ (24)	\$ 13,560	\$ (14)	\$ 51,654	\$ (38)
December 31, 2018						
Corporate bonds and notes	\$ 5,488	\$ (2)	\$ 22,860	\$ (273)	\$ 28,348	\$ (275)
Commercial paper	2,999	—	—	—	2,999	—
Treasury and agency notes and bills	—	—	5,947	(53)	5,947	(53)
Total	\$ 8,487	\$ (2)	\$ 28,807	\$ (326)	\$ 37,294	\$ (328)

The estimated fair value of marketable debt securities by contractual maturity at September 30, 2019 is shown below (in thousands). Actual maturities may differ from contractual maturities because issuers may have the right to call or prepay obligations without call or prepayment penalties.

	Estimated Fair Value
Due in one year or less	\$ 49,208
Due in one to two years	15,808
Total	\$ 65,016

Equity Securities

On September 19, 2018, the Company purchased seven million common shares of Onkyo Corporation (“Onkyo”), a publicly traded Japanese company and a long-standing customer of the Company, pursuant to the Capital Alliance Agreement (“Agreement”) entered into between the two parties on September 3, 2018. Upon making the investment, the Company held a 6.3% ownership interest in Onkyo. Due to changes in the business expectations, the Company determined not to continue discussions on the business alliance. On July 5, 2019, the Company sold approximately 2.8 million shares of Onkyo stock and realized a gain of \$0.1 million and \$0.1 million for the three and nine months ended September 30, 2019, respectively. There were no realized gains or losses on sales of the Onkyo investment during the same periods in 2018. The Company intends to sell the remaining shares over time depending on market conditions.

The Company had an unrealized loss and an unrealized gain on its Onkyo investment of \$1.1 million and \$0.5 million during the three and nine months ended September 30, 2019, respectively, and unrealized losses of \$0.6 million and \$0.6 million for the three and nine months ended September 30, 2018, respectively. Cumulative unrealized losses on the investment amounted to \$1.7 million through September 30, 2019.

NOTE 6 – FAIR VALUE

The Company follows the authoritative guidance for fair value measurement and the fair value option for financial assets and financial liabilities. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability, or an exit price, in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The established fair value hierarchy requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. There are three levels of inputs that may be used to measure fair value:

Level 1 Quoted prices in active markets for identical assets.

Level 2 Observable market-based inputs or unobservable inputs that are corroborated by market data.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets. Level 3 assets and liabilities include financial instruments whose value is determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant management judgment or estimation.

When applying fair value principles in the valuation of assets, the Company is required to maximize the use of quoted market prices and minimize the use of unobservable inputs. The Company calculates the fair value of its Level 1 and Level 2 instruments based on the exchange traded price of similar or identical instruments, where available, or based on other observable inputs. There were no significant transfers into or out of Level 1 or Level 2 that occurred between December 31, 2018 and September 30, 2019.

The following is a list of the Company's assets required to be measured at fair value on a recurring basis and where they were classified within the hierarchy as of September 30, 2019 (in thousands):

	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Marketable securities				
Money market funds - equity securities (1)	\$ 3,022	\$ 3,022	\$ —	\$ —
Marketable equity securities (2)	1,675	1,675		
Corporate bonds and notes - debt securities (2)	41,032	—	41,032	—
Commercial paper - debt securities (3)	23,984	—	23,984	—
Total Assets	<u>\$ 69,713</u>	<u>\$ 4,697</u>	<u>\$ 65,016</u>	<u>\$ —</u>

The following footnotes indicate where the noted items were recorded in the Condensed Consolidated Balance Sheet at September 30, 2019:

- (1) Reported as cash and cash equivalents.
- (2) Reported as short-term investments.
- (3) Reported as cash and cash equivalents if purchased with an original maturity of three months or less at the date of purchase; otherwise reported as short-term investments.

The following is a list of the Company's assets required to be measured at fair value on a recurring basis and where they were classified within the hierarchy as of December 31, 2018 (in thousands):

	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Marketable securities				
Money market funds - equity securities (1)	\$ 11,499	\$ 11,499	\$ —	\$ —
Marketable equity securities (2)	3,445	3,445	—	—
Commercial paper - debt securities (2)	2,999	—	2,999	—
Corporate bonds and notes - debt securities (2)	28,348	—	28,348	—
Treasury and agency notes and bills - debt securities (2)	5,947	—	5,947	—
Total Assets	<u>\$ 52,238</u>	<u>\$ 14,944</u>	<u>\$ 37,294</u>	<u>\$ —</u>

The following footnotes indicate where the noted items were recorded in the Condensed Consolidated Balance Sheet at December 31, 2018:

- (1) Reported as cash and cash equivalents.
- (2) Reported as short-term investments.

Financial Instruments Not Recorded at Fair Value on a Recurring Basis

The Company's long-term debt is carried at historical cost and is measured at fair value on a quarterly basis for disclosure purposes. The carrying amounts and estimated fair values are as follows (in thousands):

	September 30, 2019		December 31, 2018	
	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
Long-term debt, net (1)	\$ 384,065	\$ 380,480	\$ 482,193	\$ 450,083

- (1) Carrying amounts of long-term debt are net of unamortized debt issuance costs of \$9.9 million and \$11.8 million as of September 30, 2019 and December 31, 2018, respectively. See "Note 8 – Debt" for additional information.

The Company's long-term debt, net, is classified within Level 2. The fair value of the debt was estimated based on the quoted market prices for the same or similar issues.

NOTE 7 – GOODWILL AND IDENTIFIED INTANGIBLE ASSETS

The Company's reporting units include the Product Licensing segment and the Semiconductor and IP Licensing segment. Of the carrying value of goodwill, approximately \$378.1 million was allocated to the Product Licensing segment and approximately \$7.7 million was allocated to the Semiconductor and IP Licensing segment as of September 30, 2019 and December 31, 2018.

Identified intangible assets consisted of the following (in thousands):

	Average Life (Years)	September 30, 2019			December 31, 2018		
		Gross Assets	Accumulated Amortization	Net	Gross Assets	Accumulated Amortization	Net
Acquired patents / core technology	3-15	\$ 146,684	\$ (134,606)	\$ 12,078	\$ 146,684	\$ (128,691)	\$ 17,993
Existing technology	5-10	206,878	(122,190)	84,688	206,878	(96,089)	110,789
Customer contracts and related relationships	3-9	291,769	(162,003)	129,766	291,769	(121,831)	169,938
Trademarks/trade name	4-10	40,083	(14,813)	25,270	40,083	(11,083)	29,000
Non-competition agreements	1	2,231	(2,231)	—	2,231	(2,231)	—
Total intangible assets		<u>\$ 687,645</u>	<u>\$ (435,843)</u>	<u>\$ 251,802</u>	<u>\$ 687,645</u>	<u>\$ (359,925)</u>	<u>\$ 327,720</u>

Amortization expense for the three months ended September 30, 2019 and 2018 amounted to \$25.1 million and \$27.2 million, respectively.

Amortization expense for the nine months ended September 30, 2019 and 2018 amounted to \$75.9 million and \$81.6 million, respectively.

As of September 30, 2019, the estimated future amortization expense of total intangible assets was as follows (in thousands):

2019 (remaining 3 months)	\$	24,027
2020		88,231
2021		80,522
2022		32,083
2023		21,203
Thereafter		5,736
	\$	<u>251,802</u>

NOTE 8 - DEBT

On December 1, 2016, in connection with the consummation of the acquisition of DTS, the Company entered into a Credit Agreement (the "Credit Agreement") by and among the Company, Royal Bank of Canada, as administrative agent and collateral agent, and the lenders party thereto. The Credit Agreement provided for a \$600.0 million seven-year term B loan facility (the "Term B Loan Facility") which matures on November 30, 2023. Upon the closing of the Credit Agreement, the Company borrowed \$600.0 million under the Term B Loan facility. Net proceeds were used on December 1, 2016, together with cash and cash equivalents, to finance the acquisition of DTS.

On January 23, 2018, the Company and the loan parties entered into an amendment to the Credit Agreement (the "Amendment"). In connection with the Amendment, the Company made a voluntary prepayment of \$100.0 million of the term loan outstanding under the Credit Agreement using cash on hand. The Amendment provided for, among other things, (i) a replacement of the outstanding initial term loan with the new tranche term B-1 loan (the "Amended Term B Loan") in a principal amount of \$494.0 million, (ii) a reduction of the interest rate margin applicable to such loan to (x) in the case of Eurodollar loans, 2.50% per annum and (y) in the case of base rate loans, 1.50% per annum, (iii) a prepayment premium of 1.00% in connection with any repricing transaction with respect to the Amended Term B Loan within nine months of the closing date of the Amendment, and (iv) certain amendments to provide the Company with additional flexibility under the covenant governing restricted payments. Using cash on hand, the Company made two voluntary prepayments of \$50.0 million each on March 29, 2019 and June 28, 2019.

The Company's obligations under the Credit Agreement, as amended by the Amendment, continue to be guaranteed by substantially all of the Company's subsidiaries, and secured by substantially all of the assets of the Company and its subsidiaries. The Credit Agreement contains customary events of default, upon the occurrence of which, after any applicable grace period, the lenders will have the ability to accelerate all outstanding loans thereunder. The Credit Agreement contains customary representations and warranties and affirmative and negative covenants that, among other things, restrict the ability of the Company to create or incur certain liens, incur or guarantee additional indebtedness, merge or consolidate with other companies, transfer or sell assets and make restricted payments. The Company was in compliance with all requirements during the three and nine months ended September 30, 2019.

At September 30, 2019, \$394.0 million was outstanding with an interest rate, including the amortization of debt issuance costs, of 5.6%. Interest is payable monthly. There were also \$9.9 million of unamortized debt issuance costs recorded as a reduction of the long-term portion of the debt. Interest expense was \$5.5 million and \$18.4 million for the three and nine months ended September 30, 2019, respectively. Interest expense was \$6.3 million and \$18.9 million for the three and nine months ended September 30, 2018, respectively. Amortized debt issuance costs, which were included in interest expense, amounted to \$0.6 million and \$1.9 million for the three and nine months ended September 30, 2019, respectively, and \$0.6 million and \$1.9 million for the three and nine months ended September 30, 2018, respectively.

As of September 30, 2019, future minimum principal payments for long-term debt are summarized as follows (in thousands):

2019 (remaining 3 months)	\$	—
2020		—
2021		—
2022		—
2023		394,000
Thereafter		—
Total	<u>\$</u>	<u>394,000</u>

NOTE 9 – NET LOSS PER SHARE

The Company has a share-based compensation plan under which employees may be granted share-based awards including shares of restricted stock and restricted stock units ("RSUs"). Non-forfeitable dividends are paid on unvested shares of restricted stock. No dividends are accrued or paid on unvested RSUs. As such, shares of restricted stock are considered participating securities under the two-class method of calculating earnings per share. The two-class method of calculating earnings per share did not have a material impact on the Company's loss per share calculation for the three and nine months ended September 30, 2019 and 2018.

The following table sets forth the computation of basic and diluted shares (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Denominator:				
Weighted average common shares outstanding	49,459	48,958	49,036	49,005
Less: shares of restricted stock subject to repurchase	—	—	—	—
Total common shares-basic	<u>49,459</u>	<u>48,958</u>	<u>49,036</u>	<u>49,005</u>
Effect of dilutive securities:				
Options	—	—	—	—
Restricted stock awards and units	—	—	—	—
Total common shares-diluted	<u>49,459</u>	<u>48,958</u>	<u>49,036</u>	<u>49,005</u>

Basic net income (loss) per share is computed using the weighted average number of common shares outstanding during the period, excluding any unvested restricted stock awards that are subject to repurchase. Diluted net income (loss) per share is computed using the treasury stock method to calculate the weighted average number of common shares and, if dilutive, potential common shares outstanding during the period. Potential dilutive common shares include unvested restricted stock awards and units and incremental common shares issuable upon the exercise of stock options, less shares from assumed proceeds. The assumed proceeds calculation includes actual proceeds to be received from the employee upon exercise and the average unrecognized stock compensation cost during the period.

For the three and nine months ended September 30, 2019, there was no difference in the weighted average number of common shares used for the calculation of basic and diluted loss per share as the effect of all potentially dilutive shares outstanding was anti-dilutive. A total of 2.5 million and 1.5 million shares subject to stock options and restricted stock awards and units were excluded from the computation of diluted net loss per share for the three and nine months ended September 30, 2019, respectively, because including them would have been anti-dilutive.

For the three and nine months ended September 30, 2018, there was no difference in the weighted average number of common shares used for the calculation of basic and diluted loss per share as the effect of all potentially dilutive shares outstanding was anti-dilutive. A total of 2.8 million and 2.8 million shares subject to stock options and restricted stock awards and units were excluded from the computation of diluted net loss per share for the three and nine months ended September 30, 2018, respectively, because including them would have been anti-dilutive.

NOTE 10 – STOCKHOLDERS' EQUITY

Stock Repurchase Programs

In August 2007, the Company's Board of Directors (the "Board") authorized a plan to repurchase the Company's outstanding shares of common stock dependent on market conditions, share price and other factors. There were no repurchases during the

three and nine months ended September 30, 2019. The Company has repurchased a total of approximately 13,279,000 shares of common stock, since inception of the plan, at an average price of \$26.25 per share for a total cost of \$348.6 million. The shares repurchased are recorded as treasury stock and are accounted for under the cost method. No expiration date has been specified for this plan. As of September 30, 2019, the total remaining amount available for repurchase was \$101.4 million. The Company plans to continue to execute authorized repurchases from time to time under the plan.

Stock Option Plans

The 2003 Plan

As of September 30, 2019, there were approximately 2.1 million shares reserved for future grant under the Company's 2003 Equity Incentive Plan (the "2003 Plan").

A summary of the stock option activity is presented below (in thousands, except per share amounts):

	Options Outstanding	
	Number of Shares Subject to Options	Weighted Average Exercise Price Per Share
Balance at December 31, 2018	678	\$ 26.39
Options granted	—	—
Options exercised	(40)	\$ 16.69
Options canceled / forfeited / expired	(42)	\$ 31.96
Balance at September 30, 2019	<u>596</u>	<u>\$ 26.63</u>

Restricted Stock Awards and Units

Information with respect to outstanding restricted stock awards and units as of September 30, 2019 is as follows (in thousands, except per share amounts):

	Restricted Stock and Restricted Stock Units			
	Number of Shares Subject to Time-based Vesting	Number of Shares Subject to Performance-based Vesting	Total Number of Shares	Weighted Average Grant Date Fair Value Per Share
Balance at December 31, 2018	2,149	757	2,906	\$ 29.10
Awards and units granted	1,191	4	1,195	\$ 22.99
Awards and units vested / earned	(771)	(118)	(889)	\$ 31.15
Awards and units canceled / forfeited	(102)	(89)	(191)	\$ 28.43
Balance at September 30, 2019	<u>2,467</u>	<u>554</u>	<u>3,021</u>	<u>\$ 26.12</u>

Performance Awards and Units

Performance awards and units may be granted to employees or consultants based upon, among other things, the contributions, responsibilities and other compensation of the particular employee or consultant. The value and the vesting of such performance awards and units are generally linked to one or more performance goals or other specific performance goals determined by the Company, in each case on a specified date or dates or over any period or periods determined by the Company, and range from zero to 100 percent of the grant.

Employee Stock Purchase Plans

As of September 30, 2019, there were approximately 1,052,000 shares reserved for grant under the Company's 2003 Employee Stock Purchase Plan (the "ESPP") and the International Employee Stock Purchase Plan (the "IESPP"), collectively.

NOTE 11 – STOCK-BASED COMPENSATION EXPENSE

The effect of recording stock-based compensation expense for the three and nine months ended September 30, 2019 and 2018 is as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Research, development and other related costs	\$ 3,544	\$ 3,252	\$ 10,293	\$ 9,690
Selling, general and administrative	4,444	4,201	12,539	12,390
Total stock-based compensation expense	7,988	7,453	22,832	22,080
Tax effect on stock-based compensation expense	(1,269)	(1,177)	(3,654)	(3,592)
Net effect on net income (loss)	\$ 6,719	\$ 6,276	\$ 19,178	\$ 18,488

Stock-based compensation expense categorized by various equity components for the three and nine months ended September 30, 2019 and 2018 is summarized in the table below (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Employee stock options	\$ 49	\$ 79	\$ 181	\$ 362
Restricted stock awards and units	7,362	7,060	21,013	19,870
Employee stock purchase plan	577	314	1,638	1,848
Total stock-based compensation expense	\$ 7,988	\$ 7,453	\$ 22,832	\$ 22,080

There were no options granted in the three and nine months ended September 30, 2019 and 2018.

ESPP grants occur in February and August. The following assumptions were used to value the ESPP shares for these grants:

	August 2019	August 2018
Expected life (years)	2.0	2.0
Risk-free interest rate	1.7%	2.7%
Dividend yield	3.5%	3.9%
Expected volatility	51.7%	41.7%

NOTE 12 – INCOME TAXES

For the three months ended September 30, 2019, the Company recorded an income tax benefit of \$14.6 million on a pretax loss of \$30.6 million and for the nine months ended September 30, 2019, the Company recorded an income tax benefit of \$27.1 million on a pretax loss of \$74.7 million, which resulted in an effective tax rate of 36.3%. The income tax benefit for the three and nine months ended September 30, 2019 was primarily related to tax benefit from operating losses and the realization of certain tax credits, offset by foreign withholding taxes, certain non-deductible expenses, and shortfalls from stock-based compensation.

For the three months ended September 30, 2018, the Company recorded an income tax benefit of \$2.6 million, on a pretax loss of \$24.4 million and for the nine months ended September 30, 2018, the Company recorded an income tax benefit of \$8.6 million on a pretax loss of \$91.6 million, which resulted in an effective tax rate of 9.3%. The income tax benefit for the three and nine months ended September 30, 2018 was primarily related to tax benefit from losses and credits generated from operations offset by foreign withholding taxes, certain book-to-tax permanent differences, valuation allowance recorded against the Company's unutilized tax credits generated in the current year, and shortfalls from stock-based compensation.

The Company's provision for income taxes is based on its worldwide estimated annualized effective tax rate, except for jurisdictions for which a loss is expected for the year and no benefit can be realized for those losses, and the tax effect of discrete items occurring during the period. The tax for jurisdictions for which a loss is expected and no benefit can be realized for the year is based on actual taxes and tax reserves for the quarter. The increase in income tax benefit for the nine months ended September 30, 2019 as compared to the income tax benefit during the same period in the prior year is largely attributable to the realization of certain tax credits.

As of September 30, 2019, unrecognized tax benefits were \$34.1 million (which is included in long-term deferred tax and other long-term liabilities on the Condensed Consolidated Balance Sheet), of which \$21.3 million would affect the effective tax rate

if recognized. As of September 30, 2018, unrecognized tax benefits were \$34.4 million (which was included in long-term deferred tax and other long-term liabilities on the Condensed Consolidated Balance Sheet), of which \$22.2 million would affect the effective tax rate if recognized. The Company is unable to reasonably estimate the timing of the long-term payments or the amount by which the liability will increase or decrease.

It is the Company's policy to classify accrued interest and penalties related to unrecognized tax benefits in the provision for income taxes. For the nine months ended September 30, 2019 and 2018, the Company recognized an insignificant amount of interest and penalties related to unrecognized tax benefits. Accrued interest and penalties were \$1.2 million and \$0.9 million as of September 30, 2019 and December 31, 2018, respectively.

At September 30, 2019, the Company's 2014 through 2017 tax years were open and subject to potential examination in one or more jurisdictions. In addition, in the U.S., any net operating losses or credits that were generated in prior years but not yet fully utilized in a year that is closed under the statute of limitations may also be subject to examination. The Internal Revenue Service is currently in the process of completing the examination of one of the Company's domestic subsidiaries for tax year 2014. The Company estimates that the financial outcome of this examination will not be material to its Statement of Operations.

NOTE 13 – LEASES

Under Topic 842, a contract is a lease, or contains a lease, if the contract conveys the right to control the use of identified property, plant, or equipment (an identified asset) for a period of time in exchange for consideration. To determine whether a contract conveys the right to control the use of an identified asset for a period of time, an entity shall assess whether, throughout the period of use, the entity has both of the following: (a) the right to obtain substantially all of the economic benefits from use of the identified asset; and (b) the right to direct the use of the identified asset.

The Company leases office and research facilities and office equipment under operating leases which expire at various dates through 2028. The Company's leases have remaining lease terms of one year to nine years, some of which may include options to extend the leases for five years or longer, and some of which may include options to terminate the leases within one year or less. Leases with an initial term of 12 months or less are not recorded on the balance sheet; the Company recognizes lease expense for these leases on a straight-line basis over the lease term. As a practical expedient, the Company elected, for all office and facility leases, not to separate nonlease components (e.g., common-area maintenance costs) from lease components (e.g., fixed payments including rent) and instead to account for each separate lease component and its associated non-lease components as a single lease component. The Company uses its incremental borrowing rate for purposes of discounting lease payments.

Lease cost is summarized in the table below (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Operating lease cost (1)	\$ 1,991	\$ 1,790	\$ 5,997	\$ 5,419

(1) Includes short-term leases and variable lease costs, which were immaterial.

Other information related to leases was as follows (in thousands, except lease term and discount rate):

	Three Months Ended September 30, 2019	Nine Months Ended September 30, 2019
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	\$ 1,482	\$ 4,498
ROU assets obtained in exchange for new lease liabilities:		
Operating leases	\$ 361	\$ 5,136
		September 30, 2019
Weighted-average remaining lease term (years):		
Operating leases		4.8
Weighted-average discount rate:		
Operating leases		5.7%

Future minimum lease payments and related lease liabilities as of September 30, 2019 were as follows (in thousands):

	Operating Leases
2019 (remaining 3 months)	\$ 1,631
2020	6,129
2021	4,360
2022	3,259
2023	3,235
Thereafter	4,596
Total lease payments	23,210
Less: imputed interest (1)	(3,043)
Present value of lease liabilities:	\$ 20,167
Less: current obligations under leases (accrued liabilities)	5,784
Noncurrent operating lease liabilities	\$ 14,383

(1) Calculated using the interest rate for each lease.

Note: Future minimum lease payments exclude short-term leases as well as payments to landlords for variable common area maintenance, insurance and real estate taxes.

As of December 31, 2018, future minimum lease payments were as follows (in thousands):

	Operating Leases
2019	\$ 6,341
2020	5,292
2021	3,441
2022	3,047
2023	3,142
Thereafter	3,518
Total	\$ 24,781

NOTE 14 – COMMITMENTS AND CONTINGENCIES

Purchase and Other Commitments

Under certain contractual arrangements with vendors and content and ecosystem partners, the Company may be obligated to pay up to approximately \$7.1 million over an estimated period of approximately four years if certain milestones are achieved.

Contingencies

At each reporting period, the Company evaluates whether or not a potential loss amount or a potential range of loss is probable and reasonably estimable under the provisions of the authoritative guidance that addresses accounting for contingencies. The Company is currently unable to predict the final outcome of lawsuits to which it is a party and therefore cannot determine the likelihood of loss nor estimate a range of possible loss. An adverse decision in any of these proceedings could significantly harm the Company's business and consolidated financial position, results of operations or cash flows.

Tessera, Inc. v. Toshiba Corporation, Civil Action No. 5:15-cv-02543-BLF (N.D. Cal.)

On May 12, 2015, Tessera, Inc. filed a complaint against Toshiba Corporation ("Toshiba") in California Superior Court. Tessera, Inc.'s complaint alleges causes of action for breach of contract, breach of the implied covenant of good faith and fair dealing, and declaratory relief, generally alleging that Toshiba underpaid royalties and failed to cooperate with audits conducted pursuant to the parties' license agreement.

On June 8, 2015, Toshiba removed the action to the U.S. District Court for the Northern District of California. On June 18, 2015, Toshiba filed its answer, affirmative defenses, and counterclaims to Tessera, Inc.'s complaint. Toshiba alleges counterclaims for declaratory judgment and breach of the implied warranty of good faith and fair dealing. The counterclaims seek, among other things, judicial determinations about the interpretation of the parties' agreement, termination of the agreement, an accounting of the amount of alleged overpayments by Toshiba, restitution, and damages. On July 10, 2015,

Tessera, Inc. filed its answer and affirmative defenses to Toshiba's counterclaims. On March 17, 2016, Tessera, Inc. filed an amended complaint adding a claim for declaratory relief regarding a February 12, 2016 letter sent by Toshiba to Tessera, Inc. purporting to terminate the parties' license agreement. On March 18, 2016, Toshiba filed its amended answer, affirmative defenses, and counterclaims. On April 4, 2016, Tessera, Inc. filed an answer to Toshiba's amended counterclaims.

An initial summary judgment hearing on contract issues took place on September 22, 2016. On November 7, 2016, the Court entered an order granting Toshiba's motion regarding the definition of "TCC," and denying summary judgment on the other issues raised by the parties' cross-motions. On December 6, 2016, Tessera, Inc. filed a motion pursuant to Federal Rule of Civil Procedure 54(b) seeking authorization to appeal the order and for a stay. On March 6, 2017, the Court granted the Rule 54(b) motion. The Court subsequently vacated the trial date and stayed the remainder of the district court proceedings.

On April 4, 2017, Tessera, Inc. filed a notice of appeal to the U.S. Court of Appeals for the Ninth Circuit. The parties completed briefing on November 2, 2017. A hearing for oral argument took place on October 15, 2018. On November 21, 2018, the Ninth Circuit dismissed the appeal for lack of appellate jurisdiction and remanded the case to the district court for further proceedings.

On remand, the parties filed second round motions for summary judgment, and Toshiba filed a motion to strike two of Tessera's expert reports. On October 8, 2019, the Court granted Tessera's motion for summary judgment on Toshiba's counterclaim for a royalty refund. That counterclaim is now dismissed from the case. The Court also denied Toshiba's motion for summary judgment on all of Tessera's claims, and denied Toshiba's motion to strike Tessera's expert reports except to the extent that the reports contain legal opinions and expert testimony as to intent, motive, and state of mind. Trial is scheduled for October 19, 2020.

Other Litigation Matters

The Company and its subsidiaries are involved in litigation matters and claims in the normal course of business. In the past, the Company and its subsidiaries have litigated to enforce their respective patents and other intellectual property rights, to enforce the terms of license agreements, to protect trade secrets, to determine the validity and scope of the proprietary rights of others and to defend itself or its customers against claims of infringement or invalidity. The Company expects it or its subsidiaries will be involved in similar legal proceedings in the future, including proceedings regarding infringement of its patents, and proceedings to ensure proper and full payment of royalties by licensees under the terms of its license agreements.

The existing and any future legal actions may harm the Company's business. For example, legal actions could cause an existing licensee or strategic partner to cease making royalty or other payments to the Company, or to challenge the validity and enforceability of patents owned by the Company's subsidiaries or the scope of license agreements with the Company's subsidiaries, and could significantly damage the Company's relationship with such licensee or strategic partner and, as a result, prevent the adoption of the Company's other technologies by such licensee or strategic partner. Litigation could also severely disrupt or shut down the business operations of licensees or strategic partners of the Company's subsidiaries, which in turn would significantly harm ongoing relations with them and cause the Company to lose royalty revenue.

The costs associated with legal proceedings are typically high, relatively unpredictable, and not completely within the Company's control. These costs may be materially higher than expected, which could adversely affect the Company's operating results and lead to volatility in the price of its common stock. Whether or not determined in the Company's favor or ultimately settled, litigation diverts managerial, technical, legal, and financial resources from the Company's business operations. Furthermore, an adverse decision in any of these legal actions could result in a loss of the Company's proprietary rights, subject the Company to significant liabilities, require the Company to seek licenses from others, limit the value of the Company's licensed technology or otherwise negatively impact the Company's stock price or its business and consolidated financial position, results of operations or cash flows.

NOTE 15 – SEGMENT AND GEOGRAPHIC INFORMATION

The Company reports its financial results within two reportable segments: (1) Product Licensing and (2) Semiconductor and IP Licensing. There are certain corporate overhead costs that are not allocated to these reportable segments because these operating amounts are not considered in evaluating the operating performance of the Company's business segments.

The Chief Executive Officer is also the Chief Operating Decision Maker ("CODM") as defined by the authoritative guidance on segment reporting.

The Product Licensing segment, including the Company's DTS and FotoNation subsidiaries, licenses its technologies and intellectual property related to audio, digital radio and imaging solutions under the DTS, FotoNation, HD Radio, and IMAX

Enhanced brands. The Product Licensing solutions typically include the delivery of software or hardware-based solutions, combined with various other intellectual property, including know how, patents, trademarks, and copyrights. Product Licensing represents revenue derived primarily from the consumer electronics market and related applications servicing the home, automotive, and mobile markets.

The Semiconductor and IP Licensing segment develops and licenses semiconductor technologies and IP to manufacturers, foundries, subcontract assemblers and others. The segment includes revenue generated from the technology and IP portfolios of Tessera, Inc., Invenas and Invenas Bonding Technologies, Inc. (formerly Ziptronix, Inc.). Tessera, Inc. pioneered chip-scale packaging solutions. Invenas develops advanced semiconductor packaging and 3D interconnect solutions, including wafer and die bonding solutions, for applications such as smartphones, tablets, laptops, PCs, data centers and automobiles. The Company expands its technology and IP offerings in this segment through a combination of internal R&D and acquisitions. The Company also provides engineering services to customers in the form of technology demonstrations and technology transfers to assist their evaluation and adoption of the Company's technologies. Through the Company's technology transfer service, the Company provides detailed documentation outlining design guidelines, process specifications, recommended equipment and process parameters as well as hands-on engineering support to assist its licensees in bringing up and qualifying its technologies at their facilities. This service allows licensees to readily leverage the Company's years of experience and expertise in advanced semiconductor packaging and 3D interconnect technologies, including direct and hybrid bonding.

The Company does not identify or allocate assets by reportable segment, nor does the CODM evaluate reportable segments using discrete asset information. Reportable segments do not record inter-segment revenue and accordingly there are none to report. The Company does not allocate other income and expense to reportable segments. Although the CODM uses operating income to evaluate reportable segments, operating costs included in one segment may benefit other segments.

The following table sets forth the Company's segment revenue, operating expenses and operating income (loss) for the three and nine months ended September 30, 2019 and 2018 (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Revenue:				
Product Licensing segment	\$ 46,028	\$ 60,378	\$ 152,026	\$ 164,755
Semiconductor and IP Licensing segment	11,839	11,987	37,523	37,096
Total revenue	<u>57,867</u>	<u>72,365</u>	<u>189,549</u>	<u>201,851</u>
Operating expenses:				
Product Licensing segment	44,543	44,865	135,807	130,901
Semiconductor and IP Licensing segment	10,004	19,177	29,513	57,546
Unallocated operating expenses (1)	28,847	28,084	88,069	93,262
Total operating expenses	<u>83,394</u>	<u>92,126</u>	<u>253,389</u>	<u>281,709</u>
Operating income (loss):				
Product Licensing segment	1,485	15,513	16,219	33,854
Semiconductor and IP Licensing segment	1,835	(7,190)	8,010	(20,450)
Unallocated operating expenses (1)	(28,847)	(28,084)	(88,069)	(93,262)
Total operating loss	<u>\$ (25,527)</u>	<u>\$ (19,761)</u>	<u>\$ (63,840)</u>	<u>\$ (79,858)</u>

(1) Unallocated operating expenses consist primarily of selling, general and administrative expenses, such as administration, human resources, finance, information technology, corporate development and procurement. These expenses are not allocated because these amounts are not considered in evaluating the operating performance of the Company's business segments.

A significant portion of the Company's revenue is derived from licensees headquartered outside of the U.S., principally in Asia, and it is expected that this revenue will continue to account for a significant portion of total revenue in future periods. The table below lists the geographic revenue for the periods indicated (in thousands):

	Three Months Ended				Nine Months Ended			
	September 30, 2019		September 30, 2018		September 30, 2019		September 30, 2018	
Japan	\$ 18,368	32%	\$ 27,609	38%	\$ 69,427	37%	\$ 65,153	32%
Korea	19,086	33	19,158	27	53,002	28	51,046	25
U.S.	9,733	17	13,949	19	33,740	18	39,529	20
Europe and Middle East	4,780	8	9,359	13	15,243	8	25,492	13
China	3,925	7	1,980	3	11,433	6	17,615	9
Other	1,975	3	310	—	6,704	3	3,016	1
	<u>\$ 57,867</u>	<u>100%</u>	<u>\$ 72,365</u>	<u>100%</u>	<u>\$ 189,549</u>	<u>100%</u>	<u>\$ 201,851</u>	<u>100%</u>

For the three months ended September 30, 2019 and 2018, there were one customer and three customers, respectively, that accounted for 10% or more of total revenue. For the nine months ended September 30, 2019 and 2018, there were two customers and one customer, respectively, that accounted for 10% or more of total revenue. As of September 30, 2019 and December 31, 2018, there were three and two customers, respectively, that each accounted for 10% or more of total accounts receivable.

NOTE 16 - SUBSEQUENT EVENTS

On October 28, 2019, the Board declared a cash dividend of \$0.20 per share of common stock, payable on December 18, 2019 to the stockholders of record at the close of business on November 27, 2019.

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

The following discussion should be read in conjunction with the attached unaudited condensed consolidated financial statements and notes thereto, and with our audited financial statements and notes thereto for the year ended December 31, 2018 found in the Form 10-K.

This Quarterly Report contains forward-looking statements, which are subject to the safe harbor provisions created by the Private Securities Litigation Reform Act of 1995. Words such as “expects,” “anticipates,” “plans,” “believes,” “seeks,” “estimates,” “could,” “would,” “may,” “intends,” “targets” and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Quarterly Report. The identification of certain statements as “forward-looking” is not intended to mean that other statements not specifically identified are not forward-looking. All statements other than statements about historical facts are statements that could be deemed forward-looking statements, including, but not limited to, statements that relate to our future revenue, product development, demand, acceptance and market share, growth rate, competitiveness, gross margins, levels of research, development and other related costs, expenditures, the outcome or effects of and expenses related to litigation and administrative proceedings related to our patents, our intent to enforce our intellectual property, our ability to license our intellectual property, tax expenses, cash flows, our ability to liquidate and recover the carrying value of our investments, our management’s plans and objectives for our current and future operations, our plans for quarterly dividends and stock repurchases, the levels of customer spending or research and development activities, general economic conditions, and the sufficiency of financial resources to support future operations and capital expenditures.

Although forward-looking statements in this Quarterly Report reflect the good faith judgment of our management, such statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks, uncertainties, and changes in condition, significance, value and effect, including those discussed below under the heading “Risk Factors” within Part II, Item 1A of this Quarterly Report and other documents we file from time to time with the Securities and Exchange Commission (the “SEC”), such as our annual reports on Form 10-K, our quarterly reports on Form 10-Q and our current reports on Form 8-K. Such risks, uncertainties and changes in condition, significance, value and effect could cause our actual results to differ materially from those expressed herein and in ways not readily foreseeable. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Quarterly Report and are based on information currently and reasonably known to us. We undertake no obligation to revise or update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Quarterly Report. Readers are urged to carefully review and consider the various disclosures made in this Quarterly Report, which attempt to advise interested parties of the risks and factors that may affect our business, financial condition, results of operations and prospects.

Corporate Information

Our principal executive offices are located at 3025 Orchard Parkway, San Jose, California 95134. Our telephone number is (408) 321-6000. We maintain a website at www.xperi.com. The reference to our website address does not constitute incorporation by reference of the information contained on this website.

Xperi, the Xperi logo, Tessera, the Tessera logo, DTS, the DTS logo, FotoNation, the FotoNation logo, Invensas, the Invensas logo, BVA, ZiBond, DBI, DBI Ultra, DTS-HD, DTS Audio Processing, DTS:X Ultra, DTS Virtual:X, DTS Headphone:X, DTS Play-Fi, DTS:X and HD Radio are trademarks or registered trademarks of Xperi Corporation or its affiliated companies in the U.S. and other countries. All other company, brand and product names may be trademarks or registered trademarks of their respective companies.

In this Quarterly Report, the “Company,” “we,” “us” and “our” refer to Xperi Corporation, which operates its business through its subsidiaries. Unless specified otherwise, the financial results in this Quarterly Report are those of the Company and its subsidiaries on a consolidated basis.

Business Overview

Xperi is a publicly-traded technology company with headquarters in Silicon Valley and operations around the world. Through its operating subsidiaries, Xperi creates, develops and licenses innovative audio, imaging, semiconductor packaging and interconnect technologies. We have approximately 700 employees and nearly 30 years of operating experience.

We license our innovative products, technologies and inventions to global electronics companies which, in turn, integrate the technologies into their own consumer electronics and semiconductor products. Our technologies and inventions are widely adopted and used every day by millions of people. Our audio technologies have shipped in billions of devices for the home, mobile and automotive markets. Our imaging technologies have been embedded in billions of smartphones and other mobile devices. Our semiconductor packaging and interconnect technologies have been licensed to more than 100 customers and have shipped in over 100 billion semiconductor chips.

Results of Operations

We adopted the new accounting standard, ASU No. 2014-09 (Topic 606) "Revenue from Contracts with Customers" effective January 1, 2018, which had a material impact on the financial reporting of our operating results. The adoption of Topic 606 does not, however, impact billings or the cash flow from our contracts with customers. We expect to experience greater variability in quarterly revenue as a result of Topic 606 being applied to minimum guarantee and fixed fee licensing contracts. We place greater emphasis on billings and operating cash flows rather than revenue and net operating results to internally evaluate our financial performance.

Revenue

Our revenue is generated primarily from royalty and license fees. Revenue is recognized upon transfer of control of promised products, services or intellectual property and technologies ("IP") rights to customers in an amount that reflects the consideration that we expect to receive in exchange for those products, services or licensing of the IP rights.

Certain licensees have entered into fixed fee or minimum guarantee arrangements, whereby licensees pay a fixed fee for the right to incorporate our technology in the licensee's products over the license term. In arrangements with a minimum guarantee, the fixed fee component corresponds to a minimum number of units or dollars that the customer must produce or pay, with additional per-unit fees for any units or dollars exceeding the minimum. For these agreements, we recognize the full fixed fee as revenue at the beginning of the license term, when the licensee has the right to use the IP and begins to benefit from the license.

If the contract term of a fixed fee or minimum guarantee arrangement is longer than one year, we also consider the scheduled payment arrangements to determine whether a financing component exists. In general, if the payment arrangements extend beyond the initial twelve months of the contract, we treat a portion of the payments as a financing component. The discount rate used for each arrangement reflects the rate that would be used in a separate financing transaction between us and the licensee at contract inception, and takes into account the credit characteristics of the licensee and market interest rates as of the date of the agreement. As such, the amount of fixed fee revenue recognized at the beginning of the license term will be reduced by the calculated financing component. As payments are received from the licensee, we recognize a portion of the financing component through interest income.

For certain licensees, royalty revenue is generated based on a licensee's production or shipment of licensed products incorporating our IP, technologies or software. Licensees with a per-unit arrangement pay a per-unit royalty for each product manufactured or sold, as set forth in its license agreement. Licensees generally report manufacturing or sales information in the quarter subsequent to when such activity takes place. Under Topic 606, we estimate the royalties earned each quarter based on our forecast of manufacturing and sales activity incurred by our licensees in that quarter. Any differences between actual royalties owed by a licensee and our quarterly estimates are recognized in the following quarter, when the licensee's royalty report is received. Estimating licensees' quarterly royalties prior to receiving the royalty reports requires us to make significant assumptions and judgments that could have a material impact on the amount of revenue we report on a quarterly basis.

The timing of revenue recognition and the amount of revenue actually recognized for each type of revenue depends upon a variety of factors, including the specific terms of each arrangement, our ability to determine and allocate the transaction price to each separate performance obligation and the nature of our deliverables and obligations. In addition, our royalty revenue will fluctuate based on a number of factors such as: (a) the rate of adoption and incorporation of our technology by licensees; (b) the demand for products incorporating semiconductors that use our licensed technology; (c) the cyclicity of supply and demand for products using our licensed technology; (d) volume incentive pricing terms in licensing agreements that may result in significant variability in quarterly revenue recognition from customers and (e) the impact of economic downturns.

From time to time we enter into license agreements that have fixed expiration dates. Upon expiration of such agreements, we need to renew or replace these agreements in order to maintain our revenue base. We may not be able to continue licensing customers on terms favorable to us, under the existing terms or at all, which would in turn harm our results of operations.

In the past, we have engaged in litigation and arbitration proceedings to directly or indirectly enforce our intellectual property rights and the terms of our license agreements, including proceedings to ensure proper and full payment of royalties by our current licensees and by third parties whose products incorporate our intellectual property rights.

The following table presents our historical operating results for the periods indicated as a percentage of revenue:

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Revenue:				
Royalty and license fees	100%	100%	100%	100%
Total revenue	100	100	100	100
Operating expenses:				
Cost of revenue	3	7	3	5
Research, development and other related costs	46	33	42	38
Selling, general and administrative	50	39	47	46
Amortization expense	43	37	40	40
Litigation expense	2	11	2	11
Total operating expenses	144	127	134	140
Operating loss	(44)	(27)	(34)	(40)
Interest expense	10	9	9	9
Other income and expense, net	(1)	(2)	(4)	(4)
Loss before taxes	(53)	(34)	(39)	(45)
Benefit from income taxes	(25)	(4)	(14)	(4)
Net loss	(28)%	(30)%	(25)%	(41)%

Our royalty and license fees were as follows (in thousands, except for percentages):

	Three Months Ended		Increase/ (Decrease)	% Change
	September 30, 2019	September 30, 2018		
Royalty and license fees	\$ 57,867	\$ 72,365	\$ (14,498)	(20)%

The \$14.5 million or 20% decrease in revenue was due to the timing and duration of minimum guarantee (“MG”) contracts up for renewal and executed during the quarter, decreased non-recurring engineering (“NRE”) services revenue in Product Licensing, as well as a decrease in per-unit royalty true ups in the third quarter of 2019 as compared to the same period in the prior year.

	Nine Months Ended		Increase/ (Decrease)	% Change
	September 30, 2019	September 30, 2018		
Royalty and license fees	\$ 189,549	\$ 201,851	\$ (12,302)	(6)%

The \$12.3 million or 6% decrease in revenue was due to timing and duration of MG contracts up for renewal and executed during the quarter, decreased NRE services revenue and a decrease in per-unit royalty true ups in the nine months ended September 30, 2019 as compared to the nine months ended September 30, 2018.

Our billings were as follows (in thousands, except for percentages):

	Three Months Ended		Increase/ (Decrease)	% Change
	September 30, 2019	September 30, 2018		
Total billings	\$ 90,629	\$ 100,587	\$ (9,958)	(10)%

The \$10.0 million or 10% decrease in billings was due primarily to declines in NRE billings from the automotive market, decreased billings in the mobile market primarily due to an ongoing contract interpretation issue with a customer, lower Semiconductor and IP Licensing billings resulting from certain settlement and license agreements expiring at the end of 2018 and declines in payments from existing settlement and license agreements. These reductions were partially offset by the Samsung settlement and license agreement executed in December 2018.

	Nine Months Ended		Increase/ (Decrease)	% Change
	September 30, 2019	September 30, 2018		
Total billings	\$ 287,233	\$ 305,550	\$ (18,317)	(6)%

The \$18.3 million or 6% decrease in billings was primarily driven by a decline of \$9.4 million in billings in the mobile market principally due to an ongoing contract interpretation issue with a customer, and secondarily by the declines in Semiconductor and IP Licensing billings resulting from certain settlement and license agreements expiring at the end of 2018 and declines in payments from existing settlement and license agreements, partially offset by the Samsung settlement and license agreement executed in December 2018.

With changes in revenue recognition due to the adoption of Topic 606 in 2018, we anticipate our revenue for 2019 will continue to be significantly impacted due principally to our inability to record future billings as revenue in 2019 and later periods, where such revenue arises from minimum guarantee and fixed fee licensing contracts in place prior to adoption of ASC 606 on January 1, 2018. This accounting change will not impact billings or the cash flow from these contracts. Furthermore, we may experience greater variability in quarterly and annual revenue in future periods as a result of the revenue accounting treatment applied to future minimum guarantee and fixed fee licensing contracts. Management places greater emphasis on billings and cash flows rather than revenue and net operating results to internally evaluate our financial performance.

Cost of Revenue

Cost of revenue consists of royalties paid to third parties and direct compensation and related expenses to provide NRE services.

Cost of revenue for the three months ended September 30, 2019 was \$1.5 million, as compared to \$5.0 million for the three months ended September 30, 2018. Cost of revenue for the nine months ended September 30, 2019 was \$6.2 million, as compared to \$9.4 million for the nine months ended September 30, 2018. The decreases were primarily due to lower royalties accrued and paid to a third party in connection with a Product Licensing segment contract.

Research, Development and Other Related Costs

Research and development (“R&D”) is conducted primarily in-house and targets development of audio and image enhancement technologies, chip-scale, multi-chip and wafer level packaging, circuitry, 3D-IC architectures, wafer and die bonding technologies and machine learning. Research, development and other related costs include expenses associated with applications engineering necessary to port and integrate our technologies and products on third party silicon and into end devices. These costs consist primarily of compensation and related costs for personnel, engineering consulting expenses associated with new product and technology development, product commercialization, quality assurance and testing costs, as well as costs related to patent applications and examinations, product “tear downs” and reverse engineering, materials, supplies and equipment depreciation. All research, development and other related costs are expensed as incurred.

Research, development and other related costs for the three months ended September 30, 2019 were \$26.4 million, as compared to \$24.2 million for the three months ended September 30, 2018, an increase of \$2.2 million or 9%. The increase was primarily driven by an increase of \$0.8 million in outside services associated with current R&D activities, and an increase of \$0.8 million in facility related expenses.

Research, development and other related costs for the nine months ended September 30, 2019 were \$79.1 million, as compared to \$75.9 million for the nine months ended September 30, 2018, an increase of \$3.2 million or 4%. The increase was primarily driven by an increase of \$1.5 million in outside services associated with current R&D activities, an increase of \$1.3 million in facility related expense, and an increase of \$0.9 million in software and licensing subscriptions, partially offset by a reduction in personnel and retention bonus expenses.

We believe that a significant level of research and development expenses will be required for us to remain competitive in the future.

Selling, General and Administrative

Selling expenses consist primarily of compensation and related costs for sales and marketing personnel engaged in sales and licensee support, reverse engineering personnel and services, marketing programs, public relations, promotional materials, travel, trade show expenses, and stock-based compensation expense. General and administrative expenses consist primarily of compensation and related costs for general management, information technology, finance personnel, legal fees and expenses, facilities costs, stock-based compensation expense, and professional services. Our general and administrative expenses, other than facilities related expenses, are not allocated to other expense line items.

Selling, general and administrative expenses for the three months ended September 30, 2019 were \$28.8 million, as compared to \$28.1 million for the three months ended September 30, 2018, an increase of \$0.7 million or 2%. The increase was primarily driven by a \$1.4 million increase in corporate marketing and sales promotion expenses, partially offset by a decrease of \$0.8 million in personnel and retention bonus expenses.

Selling, general and administrative expenses for the nine months ended September 30, 2019 were \$88.1 million, as compared to \$93.3 million for the nine months ended September 30, 2018, a decrease of \$5.2 million or 6%. The decrease was primarily due to a \$4.3 million decrease in personnel and retention bonus expenses, a \$1.1 million decrease in bank fees due to debt modification and repricing activities in the first quarter of 2018, and a \$0.8 million decrease in software license subscription fees, partially offset by higher corporate marketing and sales promotions expenses.

Amortization Expense

Amortization expense for the three months ended September 30, 2019 was \$25.1 million, as compared to \$27.2 million for the three months ended September 30, 2018, a decrease of \$2.1 million. Amortization expense for the nine months ended September 30, 2019 was \$75.9 million, as compared to \$81.6 million for the nine months ended September 30, 2018, a decrease of \$5.7 million. The decreases were primarily attributable to certain intangible assets becoming fully amortized over the past twelve months.

With the acquisition of DTS in 2016, we anticipate that amortization expense will continue to be a significant expense since we acquired approximately \$479 million in intangible assets which will be amortized over the next several years. See “Note 7 - Goodwill and Identified Intangible Assets” in the Notes to Condensed Consolidated Financial Statements for additional information.

Litigation Expense

Litigation expense for the three months ended September 30, 2019 was \$1.5 million, as compared to \$7.6 million for the three months ended September 30, 2018, a decrease of \$6.1 million. Litigation expense for the nine months ended September 30, 2019 was \$4.0 million, as compared to \$21.6 million for the nine months ended September 30, 2018, a decrease of \$17.6 million. The decreases were primarily related to our conclusion of litigation activity through our settlement with Samsung in the fourth quarter of 2018, partially offset by increases in NVIDIA related litigation expenditure during the periods.

We expect that litigation expense may continue to be a material portion of our operating expenses in future periods, and may fluctuate between periods, because of planned or ongoing litigation, as described in Part II, Item 1 – *Legal Proceedings*, and because of litigation planned for or initiated from time to time in the future in order to enforce and protect our intellectual property and contract rights.

Upon expiration of our customers’ licenses, if those licenses are not renewed, litigation may become necessary to secure payment of reasonable royalties for the use of our patented technology. If we plan for or initiate such litigation, our future litigation expenses may increase.

Stock-based Compensation Expense

The following table sets forth our stock-based compensation expense for the three and nine months ended September 30, 2019 and 2018 (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Research, development and other related costs	\$ 3,544	\$ 3,252	\$ 10,293	\$ 9,690
Selling, general and administrative	4,444	4,201	12,539	12,390
Total stock-based compensation expense	\$ 7,988	\$ 7,453	\$ 22,832	\$ 22,080

Stock-based compensation awards include employee stock options, restricted stock awards and units, and employee stock plan purchases. For the three months ended September 30, 2019, stock-based compensation expense was \$8.0 million, of which \$0.1 million related to employee stock options, \$7.4 million related to restricted stock awards and units and \$0.5 million related to employee stock plan purchases. For the three months ended September 30, 2018, stock-based compensation expense was \$7.5 million, of which \$0.1 million related to employee stock options, \$7.1 million related to restricted stock awards and units and \$0.3 million related to employee stock plan purchases.

For the nine months ended September 30, 2019, stock-based compensation expense was \$22.8 million, of which \$0.2 million related to employee stock options, \$21.0 million related to restricted stock awards and units and \$1.6 million related to employee stock plan purchases. For the nine months ended September 30, 2018, stock-based compensation expense was \$22.1 million, of which \$0.4 million related to employee stock options, \$19.9 million related to restricted stock awards and units and \$1.8 million related to employee stock plan purchases. The increases in stock-based compensation for the three and nine months ended September 30, 2019 resulted primarily from a higher volume of restricted stock unit grants.

Interest Expense

Interest expense for the three months ended September 30, 2019 and 2018 was \$5.5 million and \$6.3 million, respectively. Interest expense for the nine months ended September 30, 2019 and 2018 was \$18.4 million and \$18.9 million, respectively. The decreases in interest expense in the three and nine months ended September 30, 2019 was primarily a result of a lower average debt balance as compared to the comparable periods in 2018, partially offset by higher LIBOR rates through mid-2019 due to the variable rate included in our debt. Interest expense may increase in future periods if interest rates are to further increase during the remainder of 2019 and in future years.

Other Income and Expense, Net

Other income and expense, net, for the three months ended September 30, 2019 was \$0.4 million, as compared to \$1.7 million for the three months ended September 30, 2018. Other income and expense, net, was lower in the third quarter of 2019 due principally to a decrease of \$0.7 million in interest income from financing components under Topic 606 and a higher unrealized loss of \$0.5 million on our equity investment in Onkyo common stock.

Other income and expense, net, for the nine months ended September 30, 2019 was \$7.5 million, as compared to \$7.1 million for the nine months ended September 30, 2018. Other income and expense, net, was higher in the first nine months of 2019 due principally to recognition of an unrealized gain of \$0.5 million on our equity investment in Onkyo stock as compared to an unrealized loss of \$0.6 million on the same investment during the comparable period in 2018, partially offset by lower interest income from financing components under Topic 606.

Provision for Income Taxes

For the three months ended September 30, 2019, we recorded an income tax benefit of \$14.6 million on a pretax loss of \$30.6 million and for the nine months ended September 30, 2019, we recorded an income tax benefit of \$27.1 million on a pretax loss of \$74.7 million, which resulted in an effective tax rate year to date of 36.3%. The income tax benefit for the three and nine months ended September 30, 2019 was primarily related to tax benefit from operational losses and the realization of certain tax credits, offset by foreign withholding taxes, certain non-deductible expenses, and shortfalls from stock-based compensation.

For the three months ended September 30, 2018, we recorded an income tax benefit of \$2.6 million on a pretax loss of \$24.4 million and for the nine months ended September 30, 2018, we recorded an income tax benefit of \$8.6 million on a pretax loss of \$91.6 million, which resulted in an effective tax rate year to date of 9.3%. The income tax benefit for the three and nine months ended September 30, 2018, was primarily related to tax benefit from losses and credits generated from operations offset by foreign withholding taxes, certain book-to-tax permanent differences, valuation allowance recorded against our unutilized tax credits generated in the current year, and shortfalls from stock-based compensation.

Our provision for income taxes is based on our worldwide estimated annualized effective tax rate, except for jurisdictions for which a loss is expected for the year and no benefit can be realized for those losses, and the tax effect of discrete items occurring during the period. The tax for jurisdictions for which a loss is expected and no benefit can be realized for the year is based on actual taxes and tax reserves for the quarter. The increase in income tax benefit for the nine months ended September 30, 2019 as compared to the income tax benefit during the same period in the prior year is largely attributable to the realization of certain tax credits.

The need for a valuation allowance requires an assessment of both positive and negative evidence when determining whether it is more likely than not that deferred tax assets are recoverable. Such assessment is required on a jurisdiction-by-jurisdiction basis. In making such assessment, significant weight is given to evidence that can be objectively verified. After considering both positive and negative evidence to assess the recoverability of our net deferred tax assets, we determined that it was more likely than not that we would not realize certain federal, state and foreign deferred tax assets given the substantial amount of tax attributes that will remain unutilized to offset forecasted future tax liabilities. In the future, we may release valuation allowance and recognize certain deferred federal tax assets, deferred state tax assets or deferred tax assets of other foreign subsidiaries depending on achievement of future profitability in relevant jurisdictions, or implementing tax planning strategies that enable us to utilize deferred tax assets that would otherwise be unused. Any release of valuation allowance could have the

effect of decreasing the income tax provision in the period the valuation allowance is released. We continue to monitor the likelihood that we will be able to recover our deferred tax assets, including those for which a valuation allowance is recorded. There can be no assurance that we will generate profits or implement tax strategies in future periods enabling us to fully realize our deferred tax assets. The timing of recording a valuation allowance or the reversal of such valuation allowance is subject to objective and subjective factors that cannot be readily predicted in advance. Adjustments could be required in the future if we conclude that it is more likely than not that deferred tax assets are not recoverable. A provision for a valuation allowance could have the effect of increasing the income tax provision in the period the valuation allowance is provided.

Segment Operating Results

We operate in two reportable segments: (1) Product Licensing and (2) Semiconductor and IP Licensing. There are certain corporate overhead costs that are not allocated to these reportable segments because these operating amounts are not considered in evaluating the operating performance of our business segments.

The Chief Executive Officer is also the Chief Operating Decision Maker (“CODM”) as defined by the authoritative guidance on segment reporting.

The Product Licensing segment, including our DTS and FotoNation subsidiaries, licenses its technologies and intellectual property related to audio, digital radio and imaging solutions under the DTS, FotoNation, HD Radio, and IMAX Enhanced brands. The Product Licensing solutions typically include the delivery of software or hardware-based solutions, combined with various other intellectual property, including know how, patents, trademarks, and copyrights. Product Licensing represents revenue derived primarily from the consumer electronics market and related applications servicing the home, automotive and mobile markets.

The Semiconductor and IP Licensing segment develops and licenses semiconductor technologies and IP to manufacturers, foundries, subcontract assemblers and others. The segment includes revenue generated from the technology and IP portfolios of Tessera, Inc., Invensas and Invensas Bonding Technologies, Inc. (formerly Ziptronix, Inc.). Tessera, Inc. pioneered chip-scale packaging solutions. Invensas develops advanced semiconductor packaging and 3D interconnect solutions, including wafer and die bonding solutions, for applications such as smartphones, tablets, laptops, PCs, data centers and automobiles. We expand our technology and IP offerings in this segment through a combination of internal R&D and acquisitions. We also provide engineering services to customers in the form of technology demonstrations and technology transfers to assist their evaluation and adoption of our technologies. Through our technology transfer service, we provide detailed documentation outlining design guidelines, process specifications, recommended equipment and process parameters as well as hands-on engineering support to assist our licensees in bringing up and qualifying our technologies at their facilities. This service allows licensees to readily leverage our years of experience and expertise in advanced semiconductor packaging and 3D interconnect technologies, including direct and hybrid bonding.

We do not identify or allocate assets by reportable segment, nor does the CODM evaluate reportable segments using discrete asset information. Reportable segments do not record inter-segment revenue and accordingly there are none to report. Although the CODM uses operating income to evaluate reportable segments, operating costs included in one segment may benefit other segments.

The following table sets forth our segments' revenue, operating expenses and operating income (loss) (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Revenue:				
Product Licensing segment	\$ 46,028	\$ 60,378	\$ 152,026	\$ 164,755
Semiconductor and IP Licensing segment	11,839	11,987	37,523	37,096
Total revenue	<u>57,867</u>	<u>72,365</u>	<u>189,549</u>	<u>201,851</u>
Operating expenses:				
Product Licensing segment	44,543	44,865	135,807	130,901
Semiconductor and IP Licensing segment	10,004	19,177	29,513	57,546
Unallocated operating expenses (1)	28,847	28,084	88,069	93,262
Total operating expenses	<u>83,394</u>	<u>92,126</u>	<u>253,389</u>	<u>281,709</u>
Operating income (loss):				
Product Licensing segment	1,485	15,513	16,219	33,854
Semiconductor and IP Licensing segment	1,835	(7,190)	8,010	(20,450)
Unallocated operating expenses (1)	(28,847)	(28,084)	(88,069)	(93,262)
Total operating loss	<u>\$ (25,527)</u>	<u>\$ (19,761)</u>	<u>\$ (63,840)</u>	<u>\$ (79,858)</u>

(1) Unallocated operating expenses consist primarily of selling, general and administrative expenses, such as administration, human resources, finance, information technology, corporate development and procurement. These expenses are not allocated because these amounts are not considered in evaluating the operating performance of the Company's business segments.

The revenue and operating income amounts in this section have been presented on a basis consistent with GAAP applied at the segment level. Of our \$385.8 million in goodwill at September 30, 2019, approximately \$378.1 million is allocated to our Product Licensing reporting segment and approximately \$7.7 million is allocated to our Semiconductor and IP Licensing reporting segment.

For the three months ended September 30, 2019, the unallocated expenses were \$28.8 million compared to \$28.1 million for the three months ended September 30, 2018. The increase of \$0.7 million was primarily attributable to an increase in corporate marketing and sales promotional expenses, partially offset by lower personnel and retention bonus expenses.

For the nine months ended September 30, 2019, the unallocated expenses were \$88.1 million compared to \$93.3 million for the nine months ended September 30, 2018. The decrease of \$5.2 million was primarily attributable to decreases in personnel and retention bonus expenses, debt modification and repricing fees, and software license subscription costs, partially offset by increased spending in corporate marketing and sales promotions.

Product Licensing Segment

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Revenue:				
Royalty and license fees	\$ 46,028	\$ 60,378	\$ 152,026	\$ 164,755
Total revenue	<u>46,028</u>	<u>60,378</u>	<u>152,026</u>	<u>164,755</u>
Operating expenses:				
Cost of revenue	1,505	5,003	6,241	9,407
Research, development and other related costs	20,318	17,657	61,691	55,109
Litigation	538	—	1,329	—
Amortization	22,182	22,205	66,546	66,385
Total operating expenses	<u>44,543</u>	<u>44,865</u>	<u>135,807</u>	<u>130,901</u>
Total operating income	<u>\$ 1,485</u>	<u>\$ 15,513</u>	<u>\$ 16,219</u>	<u>\$ 33,854</u>

Product Licensing revenue for the three months ended September 30, 2019 was \$46.0 million as compared to \$60.4 million for the three months ended September 30, 2018, a decrease of \$14.4 million or 24%. Product Licensing revenue for the nine months ended September 30, 2019 was \$152.0 million as compared to \$164.8 million for the nine months ended September 30, 2018, a decrease of \$12.8 million or 8%. The decreases in revenue were due to the timing and duration of MG contracts up for renewal and executed, decreased NRE services revenue, as well as a decrease in per-unit royalty true ups in the three and nine months ended September 30, 2019 as compared to the comparable periods in the prior year.

	Three Months Ended		Increase/ (Decrease)	% Change	Nine Months Ended		Increase/ (Decrease)	% Change
	September 30, 2019	September 30, 2018			September 30, 2019	September 30, 2018		
Product Licensing billings	\$ 48,043	\$ 54,478	\$ (6,435)	(12)%	\$ 157,797	\$ 166,686	\$ (8,889)	(5)%

The decreases in billings were primarily driven by a decline in billings in the mobile market, due principally to an ongoing contract interpretation issue with a customer, and secondarily by decreased NRE billings from the automotive market.

Due to adoption of Topic 606, we anticipate Product Licensing revenue for 2019 will continue to be impacted due principally to our inability to record further billings as revenue in 2019 and later periods from minimum guarantee and fixed fee licensing contracts in place prior to the start of 2018, offset by the impact of recording the full present value of fixed fee and minimum guarantee contracts upon their effective date which accelerates revenue recognition on new contracts as compared to revenue recognition under Topic 605. Further, we expect greater variability in quarterly and annual revenue in our Product Licensing segment in future periods as a result of the revenue accounting treatment applied to minimum guarantee and fixed fee licensing contracts.

Operating expenses for the three months ended September 30, 2019 were \$44.5 million and consisted of cost of revenue of \$1.5 million, research, development and other related costs of \$20.3 million, litigation costs of \$0.5 million and amortization costs of \$22.2 million. The decrease of \$0.4 million in total operating expenses as compared to \$44.9 million for the three months ended September 30, 2018 was primarily driven by lower cost of revenue from royalties paid to a third party, partially offset by an increase in outside services within R&D and higher litigation costs.

Operating expenses for the nine months ended September 30, 2019 were \$135.8 million and consisted of cost of revenue of \$6.2 million, research, development and other related costs of \$61.7 million, litigation costs of \$1.3 million and amortization costs of \$66.6 million. The increase of \$4.9 million in total operating expenses as compared to \$130.9 million for the nine months ended September 30, 2018 was primarily driven by the increases in outside services and software license subscriptions within R&D and higher litigation costs, partially offset by lower cost of revenue from royalties paid to a third party.

Operating income for the three months ended September 30, 2019 was \$1.5 million compared to operating income of \$15.5 million for the three months ended September 30, 2018, with the variance due to the reasons stated above.

Operating income for the nine months ended September 30, 2019 was \$16.2 million compared to operating income of \$33.9 million for the nine months ended September 30, 2018, with the variance due to the reasons stated above.

Semiconductor and IP Licensing Segment

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Revenue:				
Royalty and license fees	\$ 11,839	\$ 11,987	\$ 37,523	\$ 37,096
Total revenue	11,839	11,987	37,523	37,096
Operating expenses:				
Research, development and other related costs	6,051	6,532	17,421	20,765
Litigation	989	7,642	2,719	21,593
Amortization	2,964	5,003	9,373	15,188
Total operating expenses	10,004	19,177	29,513	57,546
Total operating income (loss)	\$ 1,835	\$ (7,190)	\$ 8,010	\$ (20,450)

Semiconductor and IP Licensing segment revenue for the three months ended September 30, 2019 was \$11.8 million as compared to \$12.0 million for the three months ended September 30, 2018. Semiconductor and IP Licensing segment revenue for the nine months ended September 30, 2019 was \$37.5 million as compared to \$37.1 million for the nine months ended

September 30, 2018. Revenue for the three and nine months ended September 30, 2019 remained relatively constant as compared to the same periods in the prior year.

	Three Months Ended		Increase/ (Decrease)	% Change	Nine Months Ended		Increase/ (Decrease)	% Change
	September 30, 2019	September 30, 2018			September 30, 2019	September 30, 2018		
Semiconductor and IP Licensing billings	\$ 42,586	\$ 46,109	\$ (3,523)	(8)%	\$ 129,436	\$ 138,864	\$ (9,428)	(7)%

The decreases in billings were due principally to certain settlement and license agreements expiring at the end of 2018 and declines in payments from existing settlement and license agreements, partially offset by the Samsung settlement and license agreement executed in December 2018.

Due to adoption of Topic 606, we anticipate Semiconductor and IP Licensing revenue for 2019 will continue to be significantly impacted due principally to our inability to record further billings as revenue in 2019 and later periods from minimum guarantee and fixed fee licensing contracts in place prior to the start of 2018. Further, we expect greater variability in quarterly and annual revenue in our Semiconductor and IP Licensing segment in future periods as a result of the revenue accounting treatment applied to minimum guarantee and fixed fee licensing contracts, which will necessitate recognizing revenue in the quarter a contract first becomes effective.

Operating expenses for the three months ended September 30, 2019 were \$10.0 million and consisted of research, development and other related costs of \$6.0 million, litigation costs of \$1.0 million and amortization costs of \$3.0 million. The decrease of \$9.2 million in total operating expenses as compared to \$19.2 million for the three months ended September 30, 2018, resulted primarily from lower litigation costs as a result of concluding the legal proceedings against Samsung in December 2018, and secondarily from lower R&D costs driven principally by lower personnel and bonus expenses, and lower amortization. The lower amortization was attributable to certain intangible assets becoming fully amortized over the past twelve months. Operating expenses for the nine months ended September 30, 2019 were \$29.5 million and consisted of research, development and other related costs of \$17.4 million, litigation costs of \$2.7 million and amortization costs of \$9.4 million. The decrease of \$28.0 million in total operating expenses as compared to \$57.5 million for the nine months ended September 30, 2018, resulted primarily from lower litigation costs as a result of concluding the legal proceedings against Samsung in December 2018, and secondarily from lower R&D costs driven principally by lower personnel and bonus expenses, and lower amortization. The lower amortization was attributable to certain intangible assets becoming fully amortized over the past twelve months.

We expect that litigation expense will continue to be a material portion of the Semiconductor and IP Licensing segment's operating expenses in future periods, and may fluctuate significantly in some periods, because of our ongoing legal actions, as described in Part II, Item 1 - *Legal Proceedings*, and because we may become involved in other litigation from time to time in the future in order to enforce and protect our intellectual property and contract rights.

Operating income for the three months ended September 30, 2019 was \$1.8 million compared to operating loss of \$7.2 million for the three months ended September 30, 2018, with the variance due to the reasons stated above.

Operating income for the nine months ended September 30, 2019 was \$8.0 million compared to operating loss of \$20.5 million for the nine months ended September 30, 2018, with the variance due to the reasons stated above.

Liquidity and Capital Resources

(in thousands, except for percentages)	As of	
	September 30, 2019	December 31, 2018
Cash and cash equivalents	\$ 75,717	\$ 113,625
Short-term investments	46,751	40,739
Total cash, cash equivalents and short-term investments	\$ 122,468	\$ 154,364
Percentage of total assets	12%	12%

	Nine Months Ended	
	September 30, 2019	September 30, 2018
Net cash from operating activities	\$ 104,214	\$ 68,633
Net cash from investing activities	\$ (13,053)	\$ 1,819
Net cash from financing activities	\$ (129,069)	\$ (156,846)

Our primary sources of liquidity and capital resources are our operating cash flows and our investment portfolio. Cash, cash equivalents and short-term investments were \$122.5 million at September 30, 2019, a decrease of \$31.9 million from \$154.4 million at December 31, 2018. This decrease resulted primarily from \$100.0 million in voluntary pay-down of debt principal, \$29.6 million in dividends paid and \$8.0 million of capital expenditures, which was partially offset by \$104.2 million in cash generated from operations. Cash and cash equivalents were \$75.7 million at September 30, 2019, a decrease of \$37.9 million from \$113.6 million at December 31, 2018.

Cash flows provided by operations were \$104.2 million for the nine months ended September 30, 2019, primarily due to our net loss of \$47.6 million being adjusted for non-cash items of depreciation of \$5.1 million, amortization of intangible assets of \$75.9 million, stock-based compensation expense of \$22.8 million and \$89.6 million in changes in operating assets and liabilities. These increases were partially offset by a reduction of \$43.1 million in deferred income taxes.

Cash flows provided by operations were \$68.6 million for the nine months ended September 30, 2018, primarily due to our net loss of \$83.0 million being adjusted for non-cash items of depreciation of \$5.1 million, amortization of intangible assets of \$81.6 million, stock-based compensation expense of \$22.1 million and \$61.2 million in changes in operating assets and liabilities. These increases were partially offset by a reduction of \$21.2 million in deferred income taxes.

Net cash used in investing activities was \$13.1 million for the nine months ended September 30, 2019, primarily related to the purchases of short-term available-for-sales securities of \$34.5 million and \$8.0 million in capital expenditures partially offset by maturities and sales of securities of \$29.3 million.

Net cash provided by investing activities was \$1.8 million for the nine months ended September 30, 2018, primarily related to maturities and sales of securities of \$28.2 million, partially offset by purchases of securities of \$20.1 million, purchases of intangible assets of \$3.4 million and capital expenditures of \$2.5 million.

Net cash used in financing activities was \$129.1 million for the nine months ended September 30, 2019 principally due to \$100.0 million in a partial pay-down of debt principal, \$29.6 million in dividends paid and \$4.3 million in repurchases of common stock, partially offset by \$6.0 million in proceeds due to the issuance of common stock under our employee stock option programs and employee stock purchase plans.

Net cash used in financing activities was \$156.8 million for the nine months ended September 30, 2018 principally due to \$100.0 million in voluntary pay-down of debt principal, \$29.5 million in dividends paid and \$40.5 million in repurchases of common stock, partially offset by \$13.2 million in proceeds from the exercise of stock options and employee stock purchases.

The primary objectives of our investment activities are to preserve principal and to maintain liquidity while at the same time capturing a market rate of return. To achieve these objectives, we maintain a diversified portfolio of securities including money market funds and debt securities including corporate bonds and notes, municipal bonds and notes, commercial paper, treasury and agency notes and bills and certificates of deposit. We invest excess cash predominantly in high-quality investment grade debt securities with less than three years to maturity. Our marketable debt securities are classified as available-for-sale and are reported at fair value, with unrealized gains and losses, net of tax, recorded in accumulated other comprehensive income. The fair values for our securities are determined based on quoted market prices as of the valuation date and observable prices for similar assets. In the third quarter of 2018, we initiated an equity position in Onkyo Corporation, a publicly traded company listed on the JASDAQ market of the Tokyo Stock Exchange. Under Topic 321, we measure equity securities with readily determinable market value at fair value and recognize any changes in fair value in net income (loss). We recorded an unrealized loss of approximately \$1.1 million on this investment in the third quarter of 2019, and we have recorded cumulative unrealized losses of \$1.7 million since we made this investment. On July 5, 2019, we sold approximately 2.8 million shares of Onkyo stock (out of a total holding of 7.0 million shares), and we intend to sell the remaining shares over time depending on market conditions.

We evaluate our debt securities periodically for possible other-than-temporary impairment and review 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 security until maturity on a more likely than not basis. If declines in the fair value of those investments are determined to be other-than-temporary, we report the credit loss portion of such decline in other income and expense, on a net basis, and the remaining noncredit loss portion in accumulated other comprehensive income. For the three and nine months ended September 30, 2019 and 2018, no impairment charges were recorded with respect to our investments in debt securities.

On December 1, 2016, we entered into a Credit Agreement which provided for a \$600.0 million seven-year term B loan facility. The Term B Loan Facility matures on November 30, 2023. Upon the closing of the Credit Agreement, we borrowed \$600.0 million under the Term B Loan facility. These proceeds were used on December 1, 2016, together with cash and cash equivalents, to finance the acquisition of DTS. The obligations under the Credit Agreement are guaranteed by substantially all of our assets pursuant to the Security Agreement, dated December 1, 2016, among us, Royal Bank of Canada, as collateral

agent, and the other pledgors party thereto. On January 23, 2018, we completed a repricing of our debt, reducing the borrowing rate by 75 basis points, and paid down \$100.0 million in principal balance. On March 29, 2019 and June 28, 2019, we made two voluntary principal payments each of \$50.0 million.

At September 30, 2019, \$394.0 million was outstanding under this loan facility with an interest rate, including amortization of debt issuance costs, of 5.6%. Interest is payable monthly. As the cumulative \$200.0 million prepayments of debt principal we made during 2018 and 2019 exceeded the minimum principal payment requirements, we expect to have no further principal payment requirements until maturity of the loan, subject to our expected achievement of a net leverage ratio, as defined in the loan agreement, below 2.0 at the end of each fiscal year end. Because the interest rate on the loan facility is variable, we are subject to variations in our cash flows based on changes in market interest rates.

In August 2007, our Board of Directors (the "Board") authorized a plan to repurchase our outstanding shares of common stock dependent on market conditions, share price and other factors. As of September 30, 2019, the total amount available for repurchase under the plan was \$101.4 million. No expiration has been specified for this plan. Since the inception of the plan, and through September 30, 2019, we have repurchased approximately 13.3 million shares of common stock at a total cost of \$348.6 million at an average price of \$26.25. During the three months ended September 30, 2019, we made no stock repurchases. We plan to continue to execute authorized repurchases from time to time under the plan.

Since March 2015, we have paid a quarterly dividend of \$0.20 per share. We anticipate that all quarterly dividends will be paid out of cash, cash equivalents and short-term investments.

We believe that based on current levels of operations and anticipated growth, our cash from operations, together with cash, cash equivalents and investments currently available, will be sufficient to fund our operations, debt service, dividends and stock repurchases and acquisition needs for at least the next twelve months. Poor financial results, unanticipated expenses, unanticipated acquisitions of technologies or businesses or unanticipated strategic investments could give rise to additional financing requirements sooner than we expect. There can be no assurance that equity or debt financing will be available when needed or, if available, that such financing will be on terms satisfactory to us and not dilutive to our then-current stockholders.

Contractual Cash Obligations

Our operating lease obligations represent aggregate future minimum lease payments under non-cancelable facility and equipment operating leases. For our facilities leases, rent expense charged to operations differs from rent paid because of scheduled rent increases. Rent expense is calculated by amortizing total rental payments on a straight-line basis over the lease term. See "Note 13 – Leases" of the Notes to Condensed Consolidated Financial Statements for additional information.

As of September 30, 2019, we had accrued \$14.6 million of unrecognized tax benefits in other long-term liabilities related to uncertain tax positions, and accrued approximately \$1.2 million of interest. At this time, we are unable to reasonably estimate the timing of the long-term payments or the amount by which the liability will increase or decrease over time.

See "Note 14 - Commitments and Contingencies" of the Notes to Condensed Consolidated Financial Statements for additional detail.

Off-Balance Sheet Arrangements

As of September 30, 2019, we did not have any off-balance sheet arrangements as defined in item 303(a)(4)(ii) of Regulation S-K.

Critical Accounting Policies and Estimates

Our significant accounting policies are detailed in "Note 2 - Summary of Significant Accounting Policies" in our Annual Report on Form 10-K for the year ended December 31, 2018. Significant changes to our accounting policies as a result of adopting Topic 842 are discussed in "Note 2 - Summary of Significant Accounting Policies" and "Note 13 - Leases" of the Notes to Condensed Consolidated Financial Statements. For a discussion of our critical accounting policies and estimates, see Part II, Item 7 - *Management's Discussion and Analysis of Financial Condition and Results of Operations* in the Form 10-K.

Recent Accounting Pronouncements

See "Note 2 - Summary of Significant Accounting Policies" of the Notes to Condensed Consolidated Financial Statements for a full description of recent accounting pronouncements including the respective expected dates of adoption.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

For a discussion of the Company's market risk, see Item 7A – *Quantitative and Qualitative Disclosures About Market Risk* in the Form 10-K.

Item 4. Controls and Procedures

Attached as exhibits to this Form 10-Q are certifications of Xperi Corporation's Chief Executive Officer and Chief Financial Officer, which are required in accordance with Rule 13a-14 of the Exchange Act. This "Controls and Procedures" section includes information concerning the controls and controls evaluation referred to in the certifications and it should be read in conjunction with the certifications, for a more complete understanding of the topics presented.

Evaluation of Controls and Procedures

Xperi Corporation maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in our reports filed pursuant to the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of the end of the period covered by this report (the evaluation date). Based on this evaluation, our principal executive officer and principal financial officer concluded as of the evaluation date that our disclosure controls and procedures were effective to provide reasonable assurance that the information relating to Xperi Corporation, including our consolidated subsidiaries, required to be disclosed in our SEC reports (i) is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and (ii) is accumulated and communicated to Xperi Corporation's management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Change in Internal Control over Financial Reporting

There has been no change in Xperi Corporation's internal control over financial reporting, as defined in Exchange Act Rules 13a-15(f) and 15d-15(f), during Xperi Corporation's most recent quarter that has materially affected, or is reasonably likely to materially affect, Xperi Corporation's internal control over financial reporting.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings

Other than to the extent the proceedings described below have concluded, we cannot predict the outcome of any of the proceedings described below. An adverse decision in any of these proceedings could significantly harm our business and our consolidated financial position, results of operations, and cash flows.

Tessera, Inc. v. Toshiba Corporation, Civil Action No. 5:15-cv-02543-BLF (N.D. Cal.)

On May 12, 2015, Tessera, Inc. filed a complaint against Toshiba Corporation (“Toshiba”) in California Superior Court. Tessera, Inc.’s complaint alleges causes of action for breach of contract, breach of the implied covenant of good faith and fair dealing, and declaratory relief, generally alleging that Toshiba underpaid royalties and failed to cooperate with audits conducted pursuant to the parties’ license agreement.

On June 8, 2015, Toshiba removed the action to the U.S. District Court for the Northern District of California. On June 18, 2015, Toshiba filed its answer, affirmative defenses, and counterclaims to Tessera, Inc.’s complaint. Toshiba alleges counterclaims for declaratory judgment and breach of the implied warranty of good faith and fair dealing. The counterclaims seek, among other things, judicial determinations about the interpretation of the parties’ agreement, termination of the agreement, an accounting of the amount of alleged overpayments by Toshiba, restitution, and damages. On July 10, 2015, Tessera, Inc. filed its answer and affirmative defenses to Toshiba’s counterclaims. On March 17, 2016, Tessera, Inc. filed an amended complaint adding a claim for declaratory relief regarding a February 12, 2016 letter sent by Toshiba to Tessera, Inc. purporting to terminate the parties’ license agreement. On March 18, 2016, Toshiba filed its amended answer, affirmative defenses, and counterclaims. On April 4, 2016, Tessera, Inc. filed an answer to Toshiba’s amended counterclaims.

An initial summary judgment hearing on contract issues took place on September 22, 2016. On November 7, 2016, the Court entered an order granting Toshiba’s motion regarding the definition of “TCC,” and denying summary judgment on the other issues raised by the parties’ cross-motions. On December 6, 2016, Tessera, Inc. filed a motion pursuant to Federal Rule of Civil Procedure 54(b) seeking authorization to appeal the order and for a stay. On March 6, 2017, the Court granted the Rule 54(b) motion. The Court subsequently vacated the trial date and stayed the remainder of the district court proceedings.

On April 4, 2017, Tessera, Inc. filed a notice of appeal to the U.S. Court of Appeals for the Ninth Circuit. On November 21, 2018, the Ninth Circuit dismissed the appeal for lack of appellate jurisdiction and remanded the case to the district court for further proceedings.

On remand, the parties filed second round motions for summary judgment, and Toshiba filed a motion to strike two of Tessera’s expert reports. On October 8, 2019, the Court granted Tessera’s motion for summary judgment on Toshiba’s counterclaim for a royalty refund. That counterclaim is now dismissed from the case. The Court also denied Toshiba’s motion for summary judgment on all of Tessera’s claims, and denied Toshiba’s motion to strike Tessera’s expert reports except to the extent that the reports contain legal opinions and expert testimony as to intent, motive, and state of mind. Trial is scheduled for October 19, 2020.

Invensas Corp., et al. v. NVIDIA Corp., Case No. 1:19-cv-00861-RGA (D. Del.)

On May 8, 2019, Invensas Corporation and Tessera Advanced Technologies, Inc. filed a complaint against NVIDIA Corporation (“NVIDIA”) in the U.S. District Court for the District of Delaware. The complaint alleges that NVIDIA infringes U.S. Patent Nos. 6,232,231, 6,849,946, 7,064,005, 6,317,333, and 5,666,046 and requests, among other things, that NVIDIA be ordered to pay compensatory damages in an amount no less than a reasonable royalty. NVIDIA answered the complaint on July 1, 2019 and subsequently moved to transfer the case to the U.S. District Court for the Northern District of California. The Court denied NVIDIA’s motion to transfer on September 17, 2019. A *Markman* hearing is scheduled for September 14, 2020, and a jury trial is scheduled to begin on September 20, 2021.

Item 1A. Risk Factors

Our operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock.

Our revenue and billings have been concentrated and we anticipate that our revenue and billings will continue to be concentrated in a limited number of customers. If we lose any of these customers, or these customers do not pay us, our revenue and billings could decrease substantially.

We have earned a significant amount of our revenue from a limited number of customers. For the three months ended September 30, 2019, there was one customer that accounted for 10% or more of total revenue. For the three months ended September 30, 2019, there were two customers that accounted for 10% or more of total billings. We expect that a significant portion of our billings and revenue will continue to come from a limited number of customers for the foreseeable future. If we lose any of these customers, or these customers do not pay us, our billings and revenue could decrease substantially. In addition, historically a significant portion of our recurring billings were the result of structured payment terms in connection with the settlement of litigation matters, including our settlements with Amkor Technology, Inc. and Powertech Technology Inc. which we received our last payments from in the fourth quarter of 2018. If we are unable to replace the billings from an expiring license or at the end of structured payment terms of a settlement agreement with similar billings from other customers, our revenue and billings could be adversely impacted as compared to periods prior to such expiration or the end of such payment terms.

We enter into license agreements that have fixed expiration dates and if, upon expiration or termination, we are unable to renew or replace such license agreements on terms favorable to us, our results of operations could be harmed.

We enter into license agreements that have fixed expiration dates. Upon expiration of such agreements we need to renew or replace these agreements in order to maintain our royalty base. If we are unable to replace the royalties from an expiring license, either through a renewal or with similar royalties from other customers, our results of operations could be adversely impacted as compared to periods prior to such expiration.

Furthermore, we may not be able to continue licensing customers on terms favorable to us, under the existing terms or at all, which would harm our results of operations. While we have expanded our licensable technology portfolio through internal development and patents purchased from third parties, there is no guarantee that these measures will lead to continued royalties. If we fail to continue to do business with our current licensees, our business would be materially adversely affected.

The success of our patent licensing business is dependent on the quality of our patent assets and our ability to create and implement new technologies or expand our licensable technology through acquisitions.

We derive a significant portion of our billings from patent licenses and royalties, including structured settlement payments. The success of our patent licensing business depends on our ability to continue to develop and acquire high quality patents. We devote significant resources to developing new technologies and to sourcing and acquiring patents to address the evolving needs of the semiconductor and the consumer and communication electronics industries, and we must continue to do so in the future to remain competitive. Developments in our technologies are inherently complex and require long development cycles and a substantial investment before we can determine their commercial viability. Moreover, competition for acquiring high quality patents is intense and there is no assurance that we can continue to acquire such patents on favorable terms. We may not be able to develop and market new or improved technologies, or to develop or acquire high quality patents, in a timely or commercially acceptable fashion. Furthermore, our acquired and developed patents will expire in the future. Our current U.S. issued patents expire at various times through 2038. We need to develop or acquire successful innovations and obtain royalty-generating patents on those innovations before our current patents expire, and our failure to do so would significantly harm our business, financial position, results of operations and cash flows.

Our use of cash and substantial long-term borrowing to finance the DTS acquisition could limit future opportunities for our business, and could materially adversely affect our financial condition if we are unable to pay principal or interest on, or to refinance, such indebtedness.

The DTS acquisition was financed with existing cash balances and a \$600 million secured term loan, with \$394 million remaining outstanding under the loan as of September 30, 2019. The combination of reduced cash balances and the incurrence of substantial long-term debt could limit our ability to make future acquisitions, investments and capital expenditures that may be necessary or desirable for the operation or expansion of our business. Moreover, our ability to service the principal and interest payments on such indebtedness will depend on our continuing ability to generate requisite cash flow from our existing and acquired business operations. The terms of the indebtedness include covenants that may limit our operating flexibility and create a risk of default if we are unable to meet financial ratios and other covenant requirements. While we made voluntary prepayments of \$100 million of principal on the indebtedness in both 2018 and so far in 2019, we may be unable to generate sufficient cash flow to make principal and interest payments in future periods, and in any event, we may be required to refinance the remaining indebtedness upon its maturity in 2023. We may be unable to refinance such indebtedness on favorable terms or at all. For example, a downgrade in our credit rating could make any such refinancing more difficult to secure on

favorable terms. A default under, or inability to refinance, our indebtedness could substantially adversely affect our continuing financial viability, and could lead to insolvency, bankruptcy, and the reduction or elimination of stockholders' equity.

Our variable rate indebtedness may expose us to interest rate risk, which could cause our debt costs to increase significantly.

As of September 30, 2019, we had \$394.0 million of outstanding indebtedness that was subject to floating interest rates. Changes in economic conditions outside of our control could result in higher interest rates, thereby increasing our interest expense and reducing the funds available for capital investment, operations or other purposes. At September 30, 2019, a 1% increase in the effective interest rate on our outstanding debt throughout a one-year period would result in an annual increase in our interest expense of approximately \$4.0 million. Any significant increase in our interest expense could negatively impact our results of operations and cash flows and also our ability to pay dividends in the future. If the U.S. Federal Reserve raises its benchmark interest rate, any increases would likely impact the borrowing rate on our outstanding indebtedness, and increase our interest expense, comparably.

We are or may become involved in litigation and administrative proceedings involving some of our patents; any adverse decisions, findings of non-infringement, or invalidation or limitation of the scope of our patents could significantly harm our business.

We are currently involved in litigation involving some of our patents, and may be involved in other such actions in the future. The parties in these legal actions often challenge the infringement, validity, scope, enforceability and/or ownership of our patents. In addition, in the past requests for reexamination or review have been filed in the U.S. Patent and Trademark Office ("PTO") with respect to patent claims at issue in one or more of our litigation proceedings, and oppositions have been filed against us with respect to our patents in the European Patent Office ("EPO"). During a reexamination or review proceeding and upon completion of the proceeding, the PTO or EPO may leave a patent in its present form, narrow the scope of the patent, or cancel or find unpatentable some or all of the claims of the patent. For example, the PTO has issued several Official Actions rejecting or maintaining earlier rejections of many of the claims in some of our patents. From time to time we assert these patents and patent claims in litigation and administrative proceedings. If the PTO's adverse rulings are upheld on appeal and some or all of the claims of the patents that are subject to reexamination are canceled, our business may be significantly harmed. In addition, counterparties to our litigation and administrative proceedings may seek and obtain orders to stay these proceedings based on rejections of claims in PTO reexaminations or review proceedings, and other courts or tribunals reviewing our legal actions could make findings adverse to our interests, even if the PTO actions are not final.

We cannot predict the outcome of any of these proceedings or the myriad procedural and substantive motions in these proceedings. If there is an adverse ruling in any legal or administrative proceeding relating to the infringement, validity, enforceability or ownership of any of our patents, or if a court or an administrative body such as the PTO limits the scope of the claims of any of our patents or concludes that they are unpatentable, we could be prevented from enforcing or earning future royalties from those patents, and the likelihood that customers will take new licenses and that current licensees will continue to agree to pay under their existing licenses could be significantly reduced. The resulting reduction in license fees and royalties could significantly harm our business, consolidated financial position, results of operations and cash flows, as well as the trading price of our common stock.

Regardless of the merits of any claim, the continued maintenance of these legal and administrative proceedings may result in substantial legal expenses and diverts our management's time and attention away from our other business operations, which could significantly harm our business. Our enforcement proceedings have historically been protracted and complex. The time to resolution and complexity of our litigation, its disproportionate importance to our business compared to other companies, the propensity for delay in civil litigation, and the potential that we may lose particular motions as well as the overall litigation could all cause significant volatility in our stock price and have a material adverse effect on our business and consolidated financial position, results of operations, and cash flows.

The timing of billings under our license and settlement agreements may cause fluctuations in our quarterly or annual financial results.

From time to time we enter into license and settlement agreements that include pricing or payment terms that result in quarter-to-quarter or year-over-year fluctuations in our billings and cash flows. The effect of these terms may also cause our aggregate annual billings to grow less rapidly than annual growth in overall unit shipments in the applicable end market. Additionally, our customers may fail to pay, delay payment of or underpay what they owe to us under our license and settlement agreements, which may in turn require us to enforce our contractual rights through litigation, resulting in payment amounts and timing different than expected based on the terms of our license and settlement agreements. This also may cause our revenue, billings and cash flows to fluctuate on a quarter-to-quarter or year-over-year basis.

We expect to continue to be involved in material legal proceedings to enforce or protect our intellectual property and contract rights, including material litigation with existing licensees or strategic partners, that could harm our business.

From time to time, our efforts to obtain a reasonable royalty through our sales efforts do not result in the prospective customer agreeing to license our patents or our technology. In certain cases, we become involved in litigation to enforce our intellectual property rights, enforce the terms of our license agreements, determine the validity and scope of the proprietary rights of others, and defend against claims of infringement or invalidity. Our current legal actions, as described in Part II, Item 1 - *Legal Proceedings*, are examples of disputes and litigation that impact our business. If we are not able to reach agreement with customers or potential customers we may be involved in similar legal proceedings in the future, including proceedings to ensure proper and full payment of royalties by licensees under the terms of their license agreements.

Existing and any future legal actions may harm our business. For example, legal actions could cause an existing customer or strategic partner to cease making royalty or other payments to us, or to challenge the validity and enforceability of our patents or the scope of our license agreements, and could significantly damage our relationship with such customer or strategic partner and, as a result, prevent the adoption of our technologies and intellectual property by such customer or strategic partner. Litigation could also severely disrupt or shut down the business operations of our customers or strategic partners, which in turn would significantly harm our ongoing relations with them and cause us to lose royalties. Moreover, the timing and results of any of our legal proceedings are not predictable and may vary in any individual proceeding. Further, our product licensing business could be subject to greater risk of claims of infringement of third-party intellectual property rights as a result of our IP licensing business. The risks of third-party infringement claims could be heightened by our need to engage in enforcement activities with respect to our existing patents, as our existing or potential licensees may seek to assert infringement claims against our DTS or other product businesses in response to our enforcement activities relating to our existing patents. Competitors of our product licensing business would not be subject to such heightened risk of third-party claims, and such claims could adversely affect our product licensing business as well as impair our enforcement ability and licensing royalties.

The cost of litigation is typically very high and can be difficult to predict, and such high costs and unpredictability may negatively impact our financial results.

From time to time we identify products that we believe infringe our patents. We seek to license the companies that design, make, use, import, sell, or offer for sale those products, but sometimes those companies are unwilling to enter into a license agreement. In those circumstances, we may elect to enforce our patent rights against those companies and products. Litigation stemming from these or other disputes could harm our relationships with those companies or other licensees, or our ability to gain new customers, who may postpone licensing decisions pending the outcome of the litigation or dispute, or who may, as a result of such litigation, choose not to adopt our technologies. In addition, these legal proceedings could be very expensive and may significantly reduce our profits.

In addition, from time to time our customers with existing license agreements dispute their obligations under such agreements, or we may dispute their reporting of royalties due under such agreements. In the past, customers have threatened to initiate litigation against us regarding our licensing royalty rate practices including our adherence to licensing on fair, reasonable, and non-discriminatory terms and potential antitrust claims.

The costs associated with legal proceedings are typically high, relatively unpredictable, and not completely within our control. These costs may be materially higher than expected, which could adversely affect our operating results and lead to volatility in the price of our common stock. Whether or not determined in our favor or ultimately settled, litigation diverts our managerial, technical, legal and financial resources from our business operations. Furthermore, an adverse decision in any of these legal actions could result in a loss of our proprietary rights, subject us to significant liabilities, require us to seek licenses from others, limit the value of our licensed technology or otherwise negatively impact our stock price or our business and consolidated financial position, results of operations and cash flows.

Even if we prevail in our legal actions, significant contingencies may exist to their settlement and final resolution, including the scope of the liability of each party, our ability to enforce judgments against the parties, the ability and willingness of the parties to make any payments owed or agreed upon, and the dismissal of the legal action by the relevant court, none of which are completely within our control. Parties that may be obligated to pay us royalties or damages, or that may otherwise be subject to a judgment, could become insolvent or decide to alter their business activities or corporate structure, which could affect our ability to collect royalties or damages from, or enforce a judgment against, such parties.

Recent and proposed changes to U.S. patent laws, rules, and regulations may adversely impact our business.

Our business relies in part on the uniform and historically consistent application of U.S. patent laws, rules, and regulations. There have been numerous recent administrative, legislative, and judicial changes and proposed changes to patent laws and rules that may have a significant impact on our ability to protect our technology and enforce our intellectual property rights. For example, there have been and may be bills introduced in the U.S. Congress relating to patent law that could adversely

impact our business depending on the scope of any bills that may ultimately be enacted into law. As another example, the U.S. Supreme Court and lower courts have in recent years issued decisions that are not favorable to patent owners. Some of these changes or potential changes may not be advantageous for us and may make it more difficult to obtain adequate patent protection, or to enforce our patents against parties using them without a license or payment of royalties. These changes or potential changes could increase the costs and uncertainties surrounding the prosecution of our patent applications and the enforcement of our patent rights and could have a negative effect on our ability to license our patents and, therefore, on the royalties we can collect.

Some of our license agreements may convert to fully paid-up licenses at the expiration of their terms, or upon certain milestones, and we may not receive royalties after that time.

From time to time we enter into license agreements that automatically convert to fully paid-up licenses upon expiration or upon reaching certain milestones. We may not receive further royalties from customers for any licensed technology under those agreements if they convert to fully paid-up licenses because such customers will be entitled to continue using some, if not all, of the relevant intellectual property or technology under the terms of the license agreements without further payment, even if relevant patents or technologies are still in effect. If we cannot find another source of royalties to replace the royalties from these license agreements converting to fully paid-up licenses, our results of operations following such conversion would be materially adversely affected.

A significant amount of our royalty revenue and billings comes from a few end markets and products, and our business could be harmed if demand for these market segments or products declines.

A significant portion of our royalties comes from the manufacture and sale of packaged semiconductor chips for DRAM, application-specific standard product semiconductors, application-specific integrated circuits, and memory. In addition, we derive substantial royalties from the incorporation of our technology into mobile devices, consumer products and computer hardware. If demand for semiconductors in any one or a combination of these market segments or products declines, our royalties may be reduced significantly and our business would be harmed.

The long-term success of our business is dependent on a royalty-based business model, which is inherently risky.

The long-term success of our business is dependent on future royalties paid to us by customers. Royalty payments under our licenses may be based, among other things, upon the number of electrical connections to the semiconductor chip in a package covered by our licensed technology, a percent of net sales, a rate per package, a per unit sold basis or a fixed quarterly amount. We are dependent upon our ability to structure, negotiate and enforce agreements for the determination and payment of royalties, as well as upon our customers' compliance with their agreements. We face risks inherent in a royalty-based business model, many of which are outside of our control, such as the following:

- the rate of adoption and incorporation of our technology by semiconductor manufacturers, assemblers, foundries, manufacturers of consumer and communication electronics, and the automotive and surveillance industry;
- the willingness and ability of materials and equipment suppliers to produce materials and equipment that support our licensed technology, in a quantity sufficient to enable volume manufacturing;
- the ability of our customers to purchase such materials and equipment on a cost-effective and timely basis;
- the length of the design cycle and the ability of us and our customers to successfully integrate certain of our imaging technologies into their integrated circuits;
- the demand for products incorporating semiconductors that use our licensed technology;
- the cyclical nature of supply and demand for products using our licensed technology;
- the impact of economic downturns; and
- the impact of poor financial performance of our customers.

It is difficult for us to verify royalty amounts owed to us under our licensing agreements, and this may cause us to lose revenue and billings.

The terms of our license agreements often require our customers to document their use of our technology and report related data to us on a quarterly basis. Although our license terms generally give us the right to audit books and records of our customers to verify this information, audits can be expensive, time consuming, and may not be cost justified based on our understanding of our customers' businesses, especially given the international nature of our customers. Our license compliance program audits certain customers to review the accuracy of the information contained in their royalty reports in an effort to

decrease the likelihood that we will not receive the royalty to which we are entitled under the terms of our license agreements, but we cannot give assurances that such audits will be effective to that end.

The markets for semiconductors and related products are highly concentrated, and we may have limited opportunities to license our technologies or sell our products.

The semiconductor industry is highly concentrated in that a small number of semiconductor designers, foundries, and manufacturers account for a substantial portion of the purchases of semiconductor products generally, including our products and products incorporating our technologies. Continued consolidation in the semiconductor industry may increase this concentration. Accordingly, we expect that licenses of our technologies and sales of our products will be concentrated with a limited number of customers for the foreseeable future. As we develop and acquire new technologies and integrate them into our product line, we will need to establish new relationships to sell these products. Our financial results significantly depend on our success in establishing and maintaining relationships with, and effecting substantial sales to, these customers. Even if we are successful in establishing and maintaining such relationships, our financial results will be dependent in large part on these customers' sales and business results.

We make significant investments in new products and services that may not achieve technological feasibility or profitability or that may limit our growth.

We have made and will continue to make significant investments in research, development, and marketing of new technologies, products and services, including audio, imaging, and advanced semiconductor packaging, bonding, and interconnect technologies. Investments in new technologies are speculative and technological feasibility may not be achieved. Commercial success depends on many factors including demand for innovative technology, availability of materials and equipment, selling price the market is willing to bear, competition and effective licensing or product sales. We may not achieve significant revenue or billings from new product and service investments for a number of years, if at all. Moreover, new technologies, products and services may not be profitable, and even if they are profitable, operating margins for new products and businesses may not be as high as the margins we have experienced historically or originally anticipated.

We may not be able to evolve our audio and imaging technologies, products, and services, or develop new technologies, products, and services, that are acceptable to our customers or the evolving markets, and our customers may use technologies offered at lower cost by others.

The markets for our audio and imaging technologies, products, and services are characterized by:

- rapid technological change and product obsolescence;
- new and improved product introductions;
- changing consumer demands;
- increasingly competitive product landscape; and
- evolving industry standards.

Our future success in our product licensing business depends upon our ability to enhance our existing technologies, products, and services and to develop enhanced and acceptable new technologies, products, and services on a timely basis. The development of enhanced and new audio and imaging technologies, products, and services is a complex and uncertain process requiring high levels of innovation, highly-skilled engineering and development personnel, and the accurate anticipation of technological and market trends. We may not be able to accurately identify, develop, market, or support new or enhanced technologies, products, or services on a timely basis, if at all. Furthermore, our new imaging and audio technologies, products, and services may never gain market acceptance, and we may not be able to respond effectively to evolving consumer demands, technological changes, product announcements by competitors, or emerging industry standards. Any failure to respond to these changes or concerns would likely prevent our imaging and audio technologies, products, and services from gaining market acceptance or maintaining market share and could lead to our imaging and audio technologies, products, and services becoming obsolete.

Furthermore, the decision by a party dominant in the entertainment value chain to provide audio or imaging technology at very low or no cost could cause our customers and other manufacturers not to utilize our technologies or services in the future. Our customers may choose to use technologies that their own in-house audio or imaging engineering teams have developed, or in which they have an interest. Accordingly, our revenue or billings could decline if our customers choose not to incorporate our audio or imaging technologies in their products, or if they sell fewer products incorporating our audio or imaging technologies.

Competing technologies may harm our business.

We expect that our technologies will continue to compete with technologies of internal design groups at semiconductor manufacturers, assemblers, electronic component, foundries and system manufacturers. The internal design groups of these companies create their own semiconductor, packaging, audio and imaging solutions. If these internal design groups design around our patents or introduce unique solutions superior to our technology, they may not need to license our technology. These groups may design technology that is less expensive to implement or that enables products with higher performance or additional features. Many of these groups have substantially greater resources, greater financial strength and lower cost structures which may allow them to undercut our price. They also have the inherent advantage of access to internal corporate strategies, technology roadmaps and technical information. As a result, they may be able to bring alternative solutions to market more easily and quickly.

DTS audio technologies compete with other providers of audio products and services, with Dolby Laboratories as the primary competitor in high-definition audio processing. Dolby Laboratories enjoys certain competitive advantages in selling its digital multi-channel audio technology, having introduced such technology before we did, and having achieved mandatory standard status in product categories that we have not, including terrestrial digital TV broadcasts in the United States.

For our embedded image processing technologies such as Face Detection and our other products, our offerings compete with other image processing software vendors such as ArcSoft, Inc. as well as internal design groups of mobile phone and digital camera manufacturers providing similar technologies by employing different approaches.

In the future, our licensed technologies may also compete with other technologies that emerge. These other technologies may be less expensive and provide higher performance than our solutions. Companies with these competing technologies may also have greater resources. Technological change could render our technologies obsolete, and new, competitive technologies could emerge that achieve broad adoption and adversely affect the use of our technologies and intellectual property.

If we do not successfully further develop and commercialize the technologies we acquire, or cultivate strategic relationships that expand our licensable portfolio, our competitive position could be harmed and our operating results adversely affected.

We attempt to expand our licensable technology portfolio and technical expertise by further developing and acquiring new technologies or developing strategic relationships with others. These strategic relationships may include the right for us to sublicense technology and intellectual property to others. We may not be able to acquire or obtain rights to licensable technology and intellectual property in a timely manner or upon commercially reasonable terms. Even if we do acquire such rights, some of the technologies we invest in may be commercially unproven and may not be adopted or accepted by the industry. Moreover, our research and development efforts, and acquisitions and strategic relationships, may be futile if we do not accurately predict the future needs of the semiconductor, consumer and communication electronics, and consumer imaging and audio processing industries. Our failure to acquire new technologies that are commercially viable in the semiconductor, consumer and communication electronics, and consumer imaging and audio processing industries could significantly harm our business, financial position, results of operations and cash flows.

The way we integrate internally developed and acquired technologies into our products and licensing programs may not be accepted by customers.

We have devoted, and expect to continue to devote, considerable time and resources to developing, acquiring and integrating new and existing technologies into our products and licensing programs. However, if customers do not accept the way we have integrated our technologies, they may adopt competing solutions. In addition, as we introduce new products or licensing programs, we cannot predict with certainty if and when our customers will transition to those new products or licensing programs. Moreover, with respect to certain of our imaging technologies, even after we have signed a license agreement with a customer, we will often not see significant royalties from that customer until after such technologies have been successfully designed into the customer's integrated circuits, which can take 18 months or longer. If customers fail to accept new or upgraded products or licensing programs incorporating our technologies, our financial position, results of operations and cash flows could be adversely impacted.

If we fail to protect and enforce our intellectual property rights, contract rights, and our confidential information, our business will suffer.

We rely primarily on a combination of license, development and nondisclosure agreements and other contractual provisions, as well as patent, trademark, trade secret and copyright laws, to protect our technology and intellectual property. If we fail to protect our technology, intellectual property, or contract rights, our customers and others may seek to use our technology and intellectual property without the payment of license fees and royalties, which could weaken our competitive position, reduce our operating results and increase the likelihood of costly litigation. The growth of our business depends in large part on our ability to secure intellectual property rights in a timely manner, our ability to convince third parties of the applicability of our intellectual property rights to their products, and our ability to enforce our intellectual property rights.

In certain instances, we attempt to obtain patent protection for portions of our technology, and our license agreements typically include both issued patents and pending patent applications. If we fail to obtain patents in a timely manner or if the patents issued to us do not cover all of the inventions disclosed in our patent applications, others could use portions of our technology and intellectual property without the payment of license fees and royalties. For example, our business may suffer if we are unable to obtain patent protection in a timely manner from the PTO due to processing delays resulting from examiner turnover and a continuing backlog of patent applications.

We also rely on trade secret laws rather than patent laws to protect other portions of our proprietary technology. Trade secrets can be difficult to protect. The misappropriation of our trade secrets or other proprietary information could seriously harm our business. We protect our proprietary technology and processes, in part, through confidentiality agreements with our employees, consultants, suppliers and customers. We cannot be certain that these contracts have not been and will not be breached, that we will be able to timely detect unauthorized use or transfer of our technology and intellectual property, that we will have adequate remedies for any breach, or that our trade secrets will not otherwise become known or be independently discovered by competitors. If we fail to use adequate mechanisms to protect our technology and intellectual property, or if a court fails to enforce our intellectual property rights, our business will suffer. We cannot be certain that these protection mechanisms can be successfully asserted in the future or will not be invalidated or challenged.

Further, the laws and enforcement regimes of certain countries may not protect our technology and intellectual property to the same extent as do the laws and enforcement regimes of the U.S. In certain jurisdictions we may be unable to protect our technology and intellectual property adequately against unauthorized use, which could adversely affect our business.

Our business may suffer if third parties assert that we violate their intellectual property rights.

Third parties may claim that either we or our customers are infringing upon their intellectual property rights. Even if we believe that such claims are without merit, they can be time-consuming and costly to defend against and will divert management's attention and resources away from our business. Furthermore, third parties making such claims may be able to obtain injunctive or other equitable relief that could block our ability to further develop or commercialize some or all of our products or services in the U.S. and abroad. Claims of intellectual property infringement also might require us to enter into costly settlement or license agreements, pay costly damage awards, or defend or indemnify our customers against judgments, damages, or other losses. Even if we have an agreement that provides for a third party to indemnify us against such costs, the indemnifying party may be unable to perform its contractual obligations under the agreement. If we cannot or do not license the allegedly infringed intellectual property on reasonable terms, or need to substitute similar technology from another source, our business, financial position, results of operations and cash flows could suffer.

Our licensing cycle is lengthy and costly, and our marketing, legal and sales efforts may be unsuccessful.

We generally incur significant marketing, legal and sales expenses prior to entering into our license agreements, generating a license fee and establishing a royalty stream from each licensee. The length of time it takes to establish a new licensing relationship, and/or for our customers to incorporate certain of our technologies in their integrated circuits, can be 18 months or longer. As such, we may incur significant expenses in any particular period before any associated royalty or cash flow stream begins.

Our business incurs significant reverse engineering expenditures on products of potential licensees in order to prepare sales and marketing collateral. We employ intensive marketing and sales efforts to educate licensees, potential licensees and original equipment manufacturers about the benefits of our technologies. In addition, even if these companies adopt our technologies, they must devote significant resources to integrate fully our technologies into their operations. If our marketing and sales efforts are unsuccessful, then we may not be able to achieve widespread acceptance of our technology. In addition, ongoing litigation could impact our ability to gain new licensees which could have an adverse effect on our financial condition, results of operations and cash flows.

If our licensees delay, refuse to or are unable to make payments to us due to financial difficulties or otherwise, or shift their licensed products to other companies to lower their royalties to us, our operating results and cash flows could be adversely affected.

A number of companies in the semiconductor and consumer electronics industries face severe financial difficulties from time to time. As a result, there have been bankruptcies and restructuring of companies in these industries. Customers may face financial difficulties which may result in their inability to make payments to us in a timely manner, or at all. In addition, we have had a history of, and we may in the future experience, customers that delay or refuse to make payments owed to us under license or settlement agreements. Our customers may also merge with or may shift the manufacture of licensed products to companies that are not currently licensees to us. This could make the collection process complex and difficult, which could adversely impact our business, financial condition, results of operations and cash flows.

Failure by the semiconductor industry to adopt our technology for the next generation high performance chips used in consumer electronics would significantly harm our business.

To date, our technology has been used by several companies in high performance semiconductor chips, including DRAM. For example, semiconductor packaging, circuitry and processing using our technology is used for DDR3 and DDR4 DRAM and we currently have customers who are paying royalties for DRAM chips in advanced packages.

We anticipate that royalties from shipments of next-generation semiconductor chips using our technology may account for a significant percentage of our future royalties. If semiconductor manufacturers do not continue to use our technology for the next-generation chips and find viable alternative technologies for use with next-generation chips, or if we do not receive royalties from the next-generation chips that use our technology, our future financial performance and cash flows could be adversely affected.

Our technology may be too expensive for certain next-generation semiconductor manufacturers, which could significantly reduce the adoption rate of our technology in next-generation chips. Even if our technology is selected for at least some of these next-generation chips, there could be delays in the introduction of products utilizing these chips that could materially affect the amount and timing of any royalty payments that we receive. Other factors that could affect adoption of our technology for next-generation semiconductor products include delays or shortages of materials and equipment and the availability of testing services.

Similarly, our audio licensing royalties from consumer electronics product manufacturers depend, in large part, upon the availability of ICs that implement our technologies. IC manufacturers incorporate our audio technologies into these ICs, which are then incorporated into consumer electronics products. We do not manufacture these ICs, but rather depend upon IC manufacturers to develop, produce and then sell them to licensed consumer electronics product manufacturers. We do not control the IC manufacturers' decisions whether or not to incorporate our technologies into their ICs, and we do not control their product development or commercialization efforts. If these IC manufacturers are unable or unwilling to implement our technologies into their ICs, production is delayed, or if they sell fewer ICs incorporating our technologies, our operating results and cash flows could be adversely affected.

The investment of our cash, cash equivalents and investments in marketable debt and equity securities is subject to risks which may cause losses and affect the liquidity of these investments.

At September 30, 2019, we held approximately \$75.7 million in cash and cash equivalents and \$46.8 million in short-term investments. These investments include various financial securities such as corporate bonds and notes, municipal bonds and notes, commercial paper, treasury and agency notes and bills, and money market funds. Although we invest in high quality securities, ongoing financial events have at times adversely impacted the general credit, liquidity, market and interest rates for these and other types of debt securities. Changes in monetary policy by the Federal Reserve, government fiscal policies, and global economic and market conditions may adversely affect the value of our investment portfolio. While we have historically held our debt investments to maturity, we may in the future have a need to sell investments before their maturity dates, which could result in losses on the sale of those investments. For example, the DTS acquisition resulted in us liquidating a significant portion of our investments. In the third quarter of 2018, we initiated an equity position in Onkyo Corporation, a publicly traded company listed on the JASDAQ market of the Tokyo Stock Exchange. Upon making the investment, we held a 6.3% ownership interest in Onkyo, and as of September 30, 2019, we held a 2.7% ownership interest. As of September 30, 2019, the market value of our remaining equity investment in Onkyo had decreased by approximately \$1.7 million since our initial investment. The financial market and monetary risks associated with our investment portfolio have and may in the future have a material adverse effect on our financial condition, results of operations or cash flows.

Our intellectual property business operates in a highly cyclical industry, which is subject to significant downturns.

The semiconductor and electronics industries in which our intellectual property business primarily operates have historically been cyclical and are characterized by wide fluctuations in product supply and demand. From time to time, these industries have experienced significant downturns, often in connection with, or in anticipation of, declining economic conditions, maturing product and technology cycles, and excess inventories. This cyclical nature could cause our operating results to decline from one period to the next. Our business depends, in part, upon the volume of production by our customers, which, in turn, depends upon the current and anticipated market demand for semiconductors and products that use semiconductors. Semiconductor manufacturers, foundries, and package assembly companies generally sharply curtail their spending during industry downturns, and historically have lowered their spending more than the decline in their revenue. As a result, our financial results have been, and will continue to be, impacted by the cyclical nature of the electronics industry. If we are unable to control our expenses adequately in response to lower royalties from our customers in such downturns, our results of operations and cash flows will be materially and adversely impacted.

If we are unable to maintain a sufficient amount of content released in the DTS audio format, demand for the technologies, products, and services that we offer to consumer electronics product manufacturers may significantly decline, which would adversely impact our business and prospects.

We expect to derive a significant percentage of our billings from the technologies, products, and services that we offer to manufacturers of consumer electronics products. We believe that demand for our audio technologies in growing markets for multi-channel and/or high resolution audio, including TVs, tablets, mobile phones, video game consoles, automobiles, and soundbars, will be based on the amount, quality, and popularity of content (such as movies, TV shows, music, and games) either released in the DTS audio format or capable of being coded and played in the DTS format. In particular, our ability to penetrate the growing markets in the network-connected space depends on the presence of streaming and downloadable content released in the DTS audio format. We generally do not have contracts that require providers of streaming and downloadable content to develop and release such content in a DTS audio format. Accordingly, our billings could decline if these providers elect not to incorporate DTS audio into their content or if they sell less content that incorporates DTS audio.

In addition, we may not be successful in maintaining existing relationships or developing new relationships with other existing or new content providers. As a result, we cannot assure you that a sufficient amount of content will be released in a DTS audio format to ensure that manufacturers continue offering DTS decoders in the consumer electronics products that they sell.

Demand for our HD Radio technology may be insufficient to sustain projected growth.

Demand for and adoption of HD Radio technology may not be sufficient for us to continue to increase the number of customers of our HD Radio system, which include IC manufacturers, manufacturers of broadcast transmission equipment, consumer electronics products manufacturers, component manufacturers, data service providers, manufacturers of specialized and test equipment and radio broadcasters.

Among other things, continuing and increased consumer acceptance of HD Radio technology will depend upon:

- the number of radio stations broadcasting digitally using HD Radio technology;
- the willingness of automobile manufacturers to include HD Radio receivers in their vehicles;
- the willingness of manufacturers to incorporate HD Radio technology into their products;
- the cost and availability of HD Radio enabled products; and
- the marketing and pricing strategies that we employ and that are employed by our customers and retailers.

Demand for HD Radio also may be impacted by declines in the automotive industry which historically has been cyclical and experienced downturns during declining economic conditions.

If demand for HD Radio technology does not continue to increase as expected, we may not be able to increase our DTS royalties as projected.

Our HD Radio technology may not remain competitive if we do not respond to changes in technology, standards and services that affect the radio broadcasting industry.

The radio broadcasting industry is subject to technological change, evolving industry standards, regulatory restrictions and the emergence of other media technologies and services. Our HD Radio technology may not gain market acceptance over these other technologies. Various other audio technologies and services that have been developed and introduced include:

- internet streaming, cable-based audio programming and other digital audio broadcast formats;
- satellite delivered digital audio radio services that offer numerous programming channels;
- other digital radio competitors, such as Digital Radio Mondiale, or DAB; and
- growth in use of portable devices for storage and playback of audio content.

Competition arising from these or other technologies or potential regulatory change may have an adverse effect on the radio broadcasting industry or on our company and our financial condition and results of operations.

If we are unable to further penetrate the streaming and downloadable content delivery markets and adapt our technologies for those markets, our royalties and ability to grow our audio business could be adversely impacted.

Until recently, video and audio content was purchased and consumed primarily via optical disc-based media. The growth of the internet and network-connected device usage, along with the rapid advancement of online and mobile content delivery, has resulted in download and streaming services becoming mainstream with consumers in various parts of the world. We expect the shift away from optical disc-based media to streaming and downloadable content consumption to continue. If we fail to continue to penetrate the streaming and downloadable content delivery market, our audio business could suffer.

The services that provide content from the cloud are not generally governed by international or national standards and are thus free to choose any media format(s) to deliver their products and services. This freedom of choice on the part of online content providers could limit our ability to grow if such content providers do not incorporate our technologies into their services, which could affect demand for our technologies.

Furthermore, our inclusion in mobile and other network-connected devices may be less profitable for us than optical disc players. The online and mobile markets are characterized by intense competition, evolving industry standards and business and distribution models, disruptive software and hardware technology developments, frequent new product and service introductions, short product and service life cycles, and price sensitivity on the part of consumers, all of which may result in downward pressure on pricing. If we are unable to adequately and timely respond to the foregoing, our business and operating results could be adversely affected.

Changes in financial accounting or taxation standards, rules, practices or interpretations may cause adverse unexpected revenue and expense fluctuations which may impact our reported results of operations.

We prepare our consolidated financial statements in accordance with U.S. generally accepted accounting principles (GAAP). These principles are subject to interpretations by the SEC and various accounting bodies. In addition, we are subject to various taxation rules in many jurisdictions. The existing taxation rules are generally complex, frequently changing and subject to interpretation. Changes to taxation rules, changes to financial accounting standards, or any changes to the interpretations of these standards or rules may adversely affect our reported financial results or the way in which we conduct business. Recent accounting pronouncements and their estimated potential impact on our business are addressed in Note 2 - "*Summary of Significant Accounting Policies*" in the Notes to Condensed Consolidated Financial Statements.

In May 2014, the Financial Accounting Standards Board ("FASB") issued ASU 2014-09, "Revenue from Contracts with Customers" ("ASU 2014-09"), and since May 2014 the FASB has issued amendments to this new guidance, which collectively provide guidance for revenue recognition. ASU 2014-09 became effective for us beginning January 1, 2018 and we adopted the new standard under the modified retrospective approach. Under the new standard, the historical practice of many licensing companies of reporting revenue from per-unit royalty-based agreements one quarter in arrears is no longer accepted and instead companies must now estimate royalty-based revenue. This guidance significantly impacts our revenue recognition. First, we are no longer allowed to follow our past practice of recording per unit license revenue on a quarter lag basis, a practice precipitated by the lack of reliable estimates for such revenue. Estimating per unit royalty revenue prior to receiving the licensee's royalty report requires us to make significant assumptions and judgments and could cause significant fluctuations of royalty revenue on a quarterly basis. Second, we are now required to record all or a significant majority of revenue under our fixed fee and minimum guarantee license agreements when such agreements are effective rather than recording them over time as was our past practice and which generally aligned revenue more closely with the billing cycle and cash flows from such agreements. While the changes in revenue recognition do not impact our cash flows, the impact on our Statement of Operations

under the new accounting standard may impact how investors perceive our business which could materially impact the value of our common stock.

On December 22, 2017, the Tax Cuts and Jobs Act (“Tax Act”) was signed into law. The Tax Act introduced a broad range of tax reform measures that significantly changed the federal income tax laws. Many provisions in the Tax Act are generally effective in tax years beginning after December 31, 2017. We continue to analyze additional information and new guidance issued by relevant authorities related to the Tax Act. The prospects of supplemental legislation or regulatory processes to address uncertainties that arise because of the Tax Act, or evolving technical interpretations of the tax law, may cause our financial statements to be impacted in the future. We will continue to analyze the effects of the Tax Act as subsequent guidance continues to emerge.

Our future effective tax rate may be affected by such factors as changes in tax laws, changing interpretation and new guidance related to the Tax Act, withholding tax determinations by foreign tax authorities, the impact of accounting for stock-based compensation, the impact of accounting for business combinations, changes in the composition of global earnings, the expiration of statute of limitations, settlements of audits, changes in our domestic and international organization and changes in overall levels of income before tax.

In order to measure our financial performance, we place greater emphasis on billings and operating cash flows rather than revenue and net operating results, and this emphasis may be misunderstood by investors or create a conflict with the financial measures typically used by investors.

The adoption of ASU 2014-09 had a material impact on the timing of revenue recognition in our business. However, it had no impact on customer billings or the cash flow from our contracts with customers. Our management places greater emphasis on billings and operating cash flows rather than revenue and net operating results to evaluate our financial performance. Our financial performance may appear significantly different when measured by operating cash flows rather than net operating results. Because performance bonuses are earned based on billings based metrics, such bonuses may be higher in years with lower net operating results, or lower in years with higher net operating results, which may confuse investors and analysts. Investors and analysts may place greater emphasis on measures of revenue and net operating results in evaluating the Company’s financial performance, notwithstanding management’s focus on billings and operating cash flows. Differences in perception of the Company’s financial performance could materially impact the price and volatility in the price of our common stock.

Our effective tax rate depends on our ability to secure the tax benefits of our international corporate structure, on the application of the tax laws of various jurisdictions and on how we operate our business.

Our international corporate structure and intercompany arrangements, including the manner in which we market, develop, use and license our intellectual property, fund our operations and structure transactions with our international subsidiaries, may result in the increase or reduction of our worldwide effective tax rate. Such international corporate structure and intercompany arrangements are subject to examination by the tax authorities of the jurisdictions in which we operate, including the United States. The application of the tax laws of these jurisdictions to our international business activities is subject to interpretation and depends on our ability to operate our business in a manner consistent with our corporate structure and intercompany arrangements. Moreover, such tax laws are subject to change. Tax authorities may disagree with our intercompany transfer pricing arrangements, including our transfer of intangibles, or determine that the manner in which we operate our business does not achieve the intended tax consequences. Additionally, current and future changes in the tax laws or interpretations may have an adverse effect on our international corporate structure and operations. The result of an adverse determination of any of the above items could increase our worldwide effective tax rate and harm our financial position and results of operations.

We have in the past recorded, and may in the future record, significant valuation allowances on our deferred tax assets, and the recording and release of such allowances may have a material impact on our results of operations.

The need for a valuation allowance requires an assessment of both positive and negative evidence on a jurisdiction-by-jurisdiction basis when determining whether it is more likely than not that deferred tax assets are recoverable. In making such assessment, significant weight is given to evidence that can be objectively verified. In the future, new facts and circumstances and new guidance related to the Tax Act may require us to reevaluate our valuation allowance positions which could potentially affect our effective tax rate.

We continue to monitor the likelihood that we will be able to recover our deferred tax assets, including those for which a valuation allowance is recorded. There can be no assurance that we will generate profits in future periods enabling us to fully realize our deferred tax assets. The timing of recording a valuation allowance or the reversal of such valuation allowance is subject to objective and subjective factors that cannot be readily predicted in advance. Both the establishment of a valuation allowance and the reversal of a previously recorded valuation allowance may have a material impact on our financial results.

The international nature of our business exposes us to financial and regulatory risks that may have a negative impact on our consolidated financial position, results of operations and cash flows, and we may have difficulty protecting our intellectual property in some foreign countries.

We derive a significant portion of our royalties from licensees headquartered outside of the U.S. We also have operations outside of the U.S., including our research and development facilities in Ireland, Romania and the United Kingdom, to design, develop, test or market certain technologies. International operations are subject to a number of risks, including but not limited to the following:

- changes in trade protection laws, policies and measures, and other regulatory requirements affecting trade and investment;
- regulatory requirements and prohibitions that differ between jurisdictions;
- laws and business practices favoring local companies;
- withholding tax obligations on license royalties that we may not be able to offset fully against our U.S. tax obligations, including the further risk that foreign tax authorities may re-characterize license fees or increase tax rates, which could result in increased tax withholdings and penalties;
- security concerns, including crime, political instability, terrorist activity, armed conflict and civil or military unrest;
- differing employment practices, labor issues and business and cultural factors;
- less effective protection of intellectual property than is afforded to us in the U.S. or other developed countries; and
- limited infrastructure and disruptions, such as large-scale outages or interruptions of service from utilities or telecommunications providers.

Our intellectual property is also used in a large number of foreign countries. There are many countries in which we currently have no issued patents. In addition, effective intellectual property enforcement may be unavailable or limited in some foreign countries. It may be difficult for us to protect our intellectual property from misuse or infringement by other companies in these countries. We expect this to become a greater problem for us as our licensees increase their manufacturing and sales in countries which provide less protection for intellectual property. Our inability to enforce our intellectual property rights in some countries may harm our business, financial position, results of operations and cash flows.

Deteriorating trade relations between the United States and China, other trade conflicts and barriers, economic sanctions, and national security protection policies could limit or prevent us from licensing our technology to certain existing or potential customers, or prevent such customers from doing business with us.

The increased trade conflicts between the United States and its major trading partners, evidenced by trade restrictions such as tariffs, taxes, export controls, economic sanctions, and enhanced policies designed to protect national security, could adversely impact our revenue and billings. In particular, we have begun to see impacts on our business due to the increase in trade conflicts between the United States and China, although to date this impact has not been material. In the future, trade restrictions could limit or prevent us from licensing our technology to existing or potential customers. In May 2019, the United States Department of Commerce designated Huawei Technologies, a current customer of ours, to its “entity list,” which limits the ability of U.S. companies to export products and license technologies to Huawei. These export controls, as well as retaliatory controls and tariffs that China has imposed and is considering, could restrict our ability to do business with Huawei and other Chinese customers. Further United States government actions to protect domestic economic and security interests could lead to further restrictions. Moreover, growing trade conflicts and uncertainties can be expected to lead to decreased use of foreign-owned technologies in China and other countries, due to efforts by foreign governments and enterprises to find alternative sources of supply, to develop proprietary domestic technologies, and otherwise to reduce reliance on foreign technology sources. These trends could have a material adverse impact on our revenue and billings.

Our business and operating results may be harmed if we are unable to manage growth in our business, if we undertake any restructuring activities or if we dispose of a business division or dispose of or discontinue any product lines.

We have in the past expanded our operations, domestically and internationally, and may continue to do so through both internal growth and acquisitions. In December 2016, we acquired DTS, resulting in our headcount more than doubling year over year. If our growth continues, it may place a significant strain on our management team and on our operational and financial systems, procedures, and controls. Our future success will depend, in part, upon the ability of our management team to manage any growth effectively, requiring our management to:

- recruit, hire, and train additional personnel;
- implement and improve our operational and financial systems, procedures, and controls;

- maintain our cost structure at an appropriate level based on the royalties, billings and cash we forecast and generate;
- manage multiple concurrent development projects; and
- manage operations in multiple time zones with different cultures and languages.

If we are unable to effectively manage our growth or we are unsuccessful in recruiting and retaining personnel, our business and operating results will be harmed. Moreover, if our acquisitions or other growth initiatives do not prove to be profitable, we may undertake to restructure our business, including the disposition of a business division, or the disposition or discontinuance of a product line. Any restructuring, disposition or discontinuance would require substantial management time and attention and may divert management from other important work, and may result in significant liabilities and costs as described earlier.

Disputes regarding our intellectual property may require us to defend or indemnify certain customers or licensees, the cost of which could adversely affect our business operations and financial condition.

While we generally do not defend or indemnify our customers, some of our license agreements in our imaging and audio businesses provide limited defense and indemnities for certain actions brought by third parties against our customers, and some require us to provide technical support and information to a customer that is involved in litigation for using our technology. Our defense, indemnity and support obligations could result in substantial expenses. In addition to the time and expense required for us to defend, indemnify or supply such support to our customers, a customer's development, marketing and sales of licensed image or audio products could be severely disrupted or shut down as a result of litigation, which in turn could have a material adverse effect on our business operations, consolidated financial position, results of operations and cash flows.

If we lose any of our key personnel or are unable to attract, train and retain qualified personnel, we may not be able to execute our business strategy effectively.

Our success depends, in large part, on the continued contributions of our key management, engineering, sales, marketing, intellectual property, legal and finance personnel, many of whom are highly skilled and would be difficult to replace. None of our senior management, key technical personnel or key sales personnel are bound by written employment contracts to remain with us for a specified period. In addition, we do not currently maintain key-person life insurance covering our key personnel or have restrictions on their post-employment ability to solicit our employees, contractors or customers if key personnel voluntarily terminate their employment. The loss of any of our senior management or other key personnel could harm our ability to implement our business strategy and respond to the rapidly changing market conditions in which we operate. Our future success will depend to a significant extent on the ability of these executives to effectively drive execution of our business strategy, and on the ability of our management team to work together effectively.

Our success also depends on our ability to attract, train and retain highly skilled managerial, engineering, sales, marketing, legal and finance personnel and on the abilities of new personnel to function effectively, both individually and as a group. Competition for qualified senior employees can be intense. We have also experienced difficulty in hiring and retaining highly skilled engineers with appropriate qualifications to support our growth and expansion. Further, we must train our new personnel, especially our technical support personnel, to respond to and support our licensees and customers. If we fail to do this, it could lead to dissatisfaction among our licensees or customers, which could slow our growth or result in a loss of business.

Our business operations could suffer in the event of information technology system failures or security breaches.

Despite system redundancy and the implementation of security measures within our internal and external information technology and networking systems, our information technology systems may be subject to security breaches, unauthorized access (malicious or accidental), misuse of information by authorized users, data leaks or unintentional exposure of information, failed process, loss of data, damages from computer viruses or malware, natural disasters, terrorism, telecommunication failures or disruption of service. Any system failure or security breach could cause interruptions in our operations in addition to the possibility of losing proprietary information and trade secrets. To the extent that any disruption or security breach results in inappropriate disclosure of our confidential information, we may incur liability or additional costs to remedy the damages caused by these disruptions or security breaches.

Decreased effectiveness of share-based compensation could adversely affect our ability to attract and retain employees.

We have historically used stock options, restricted stock grants and other forms of stock-based compensation as key components of employee compensation in order to align employees' interests with the interests of our stockholders, encourage employee retention and provide competitive compensation and benefit packages. We incur significant compensation costs associated with our stock-based compensation programs. Failure to obtain stockholder approval of equity compensation plans or changes to the plans could make it harder or more expensive for us to grant stock-based compensation to employees in the future. As a result, we may find it difficult to attract, retain and motivate employees, and any such difficulty could have a materially adverse impact on our business.

Failure to comply with environmental regulations could harm our business.

We use hazardous substances in the manufacturing and testing of prototype products and in the development of technologies in our research and development laboratories. We are subject to a variety of local, state and federal regulations relating to the storage, discharge, handling, emission, generation, manufacture and disposal of toxic or other hazardous substances. Our past, present or future failure to comply with environmental regulations could result in the imposition of substantial fines, suspension of production, and alteration of our manufacturing processes or cessation of operations. Compliance with such regulations could require us to acquire expensive remediation equipment or to incur other substantial expenses. Any failure to control the use, disposal, removal or storage of, or to adequately restrict the discharge of, or assist in the cleanup of, hazardous or toxic substances, could subject us to significant liabilities, including joint and several liabilities under certain statutes. The imposition of such liabilities could significantly harm our business, financial position, results of operations and cash flows.

We have business operations located in places that are subject to natural disasters.

Our business operations depend on our ability to maintain and protect our facilities, computer systems and personnel. Our corporate headquarters are located in the San Francisco Bay Area and we have engineering activities in several locations throughout California, which in the past have experienced severe earthquakes. We do not carry earthquake insurance for any of our facilities except for our office in Calabasas, California. Earthquakes or other natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects.

We have made and may continue to make or to pursue acquisitions which could divert management's attention, cause ownership dilution to our stockholders, or be difficult to integrate, which may adversely affect our financial results.

We have made several acquisitions, and it is our current plan to continue to acquire assets, patents, technologies or companies that we believe are strategic to our future business. For example, in the fourth quarter of 2016, we acquired DTS, Inc., for approximately \$955 million. Investigating businesses, assets, patents or technologies and integrating newly acquired businesses, assets, patents or technologies could put a strain on our resources, could be costly and time consuming, and might not be successful. Such activities divert our management's attention from other business concerns. In addition, we might lose key employees while integrating new organizations or operations. Acquisitions could also result in customer dissatisfaction, performance problems with an acquired company or technology, potentially dilutive issuances of equity securities or the incurrence of debt, the assumption or incurrence of contingent liabilities, impairment charges related to goodwill and possible impairment charges related to other intangible assets or other unanticipated events or circumstances, any of which could harm our business.

Our plans to integrate and expand upon research and development programs and technologies obtained through acquisitions may result in products or technologies that are not adopted by the market. The market may adopt competitive solutions to our products or technologies. Consequently, we might not be successful in integrating any acquired businesses, assets, products or technologies, and might not achieve anticipated revenue and cost benefits.

There are numerous risks associated with our acquisitions of businesses, technologies and patents.

We have made a number of acquisitions of businesses, technologies and patents in recent years. These acquisitions are subject to a number of risks, including but not limited to the following:

- these acquisitions could fail to produce anticipated benefits or could have other adverse effects that we currently do not foresee. As a result, these acquisitions could result in a reduction of net income per share as compared to the net income per share we would have achieved if these acquisitions had not occurred. We may also be required to recognize impairment charges of acquired assets or goodwill, and if we decide to restructure acquired businesses, we may incur other restructuring charges;
- the purchase price for each acquisition is determined based on significant judgment on factors such as projected cash flow, quality and availability of the business, technology or patent. In addition, if other companies have similar interests in the same business, technology or patent, our ability to negotiate these acquisitions at favorable terms may be limited and the purchase price may be artificially inflated;
- following completion of these acquisitions, we may uncover additional liabilities, patent validity, infringement or enforcement issues or unforeseen expenses not discovered during our diligence process;
- any such additional liabilities, patent validity, infringement or enforcement issues or expenses could result in significant unanticipated costs not originally estimated, such as impairment charges of acquired assets and goodwill, and may harm our financial results;
- the integration of technologies, patent assets and personnel, if any, will be a time consuming and expensive process that may disrupt our operations if it is not completed in a timely and efficient manner. If our integration efforts are not successful, our results of operations could be harmed, employee morale could decline, key employees could leave, and

customer relations could be damaged. In addition, we may not achieve anticipated synergies or other benefits from any of these acquisitions;

- we have incurred substantial direct transaction and integration costs as a result of past acquisitions. In future acquisitions, the total direct transaction costs and the costs of integration may exceed our expectations;
- sales by the acquired businesses may be subject to different accounting treatment than our existing businesses, especially related to the recognition of revenue. This may lead to the loss or deferral of revenue under current and emerging accounting standards;
- there may be a significant time lag between acquiring patent assets and recognizing royalties from those patent assets. During that time lag, material costs are likely to be incurred in preparing licensing or litigation efforts and amortization of acquired patent assets that would have a negative effect on our results of operations, cash flows and financial position;
- we may require external financing that is dilutive or presents risks of debt; and
- we are required to estimate and record fair values of contingent assets, liabilities, deferred tax assets and liabilities at the time of an acquisition. Even though these estimates are based on management's best judgment, the actual results may differ. Under the current accounting guidance, differences between actual results and management's estimate could cause our operating results to fluctuate or could adversely affect our results of operations.

If our amortizable intangible assets (such as acquired patents) become impaired, we may be required to record a significant charge to earnings.

In addition to internal development, we intend to broaden our intellectual property portfolio through strategic relationships and acquisitions such as the acquisitions of DTS, Inc. in the fourth quarter of 2016. We believe these strategic relationships and acquisitions will enhance the competitiveness and size of our current businesses and provide diversification into markets and technologies that complement our current businesses. Future acquisitions could be in the form of asset purchases, equity investments, or business combinations. As a result, we may have intangible assets which are amortized over their estimated useful lives. We review our amortizable intangible assets (such as our patent portfolio) for impairment when events or changes in circumstances indicate the carrying value may not be recoverable or the useful life is shorter than originally estimated. Factors that may be considered a change in circumstances indicating that the carrying value of our amortizable or other intangible assets may not be recoverable include a decline in future cash flows, fluctuations in market capitalization, slower growth rates in our industry or slower than anticipated adoption of our products by our customers. As we continue to review for factors that may affect our business which may not be in our control, we may be required to record a significant charge to earnings in our financial statements during the period in which any impairment of our amortizable intangible assets or equity investments is determined, resulting in an adverse impact on our business, financial position, or results of operations.

Current and future governmental and industry standards may significantly limit our business opportunities.

Technology standards are important in the audio and video industry as they help to assure compatibility across a system or series of products. Generally, standards adoption occurs on either a mandatory basis, requiring a particular technology to be available in a particular product or medium, or an optional basis, meaning that a particular technology may be, but is not required to be, utilized. If standards are re-examined or a new standard is developed in which we are not included, our growth in that area of our business could be significantly lower than expected.

As new technologies and entertainment media emerge, new standards relating to these technologies or media may develop. New standards may also emerge in existing markets that are currently characterized by competing formats, such as the market for PCs. We may not be successful in our efforts to include our technology in any such standards.

Changes in or failure to comply with FCC requirements could adversely impact our HD Radio revenue and royalties.

In October 2002, the Federal Communications Commission, or the FCC, selected our "In-Band, On-Channel" ("IBOC") technology, also known as "HD Radio technology," as the exclusive technology for introduction of terrestrial digital operations by AM and FM radio stations. In the United States, the FCC regulates the broadcast radio industry, interprets laws enacted by Congress and establishes and enforces regulations governing radio broadcasting. It is unclear what rules and regulations the FCC may adopt regarding digital audio broadcasting and what effect, if any, such rules and regulations will have on our Product Licensing segment, the operations of stations using our HD Radio technology or consumer electronics manufacturers. Any additional rules and regulations imposed on digital audio broadcasting could adversely impact the attractiveness of HD Radio technology and negatively impact our business. Also, non-compliance by us, or by radio stations offering HD Radio broadcasts, with any FCC requirements or conditions could result in fines, additional license conditions, license revocation or other detrimental FCC actions.

Our licensing of industry standard technologies can be subject to limitations that could adversely affect our business and prospects.

When a standards-setting body adopts our technologies as explicit industry standards, we generally must agree to license such technologies on a fair, reasonable and non-discriminatory basis, which we believe means that we treat similarly situated customers similarly. In these situations, we may be required to limit the royalty rates we charge for these technologies, which could adversely affect our business. Furthermore, we may have limited control over whom we license such technologies to and may be unable to restrict many terms of the license. From time to time, we may be subject to claims that our licenses of our industry standard technologies may not conform to the requirements of the standards-setting body. Claimants in such cases could seek to restrict or change our licensing practices or our ability to license our technologies in ways that could harm our reputation and otherwise materially and adversely affect our business, operating results and prospects.

Our financial and operating results may vary, which may cause the price of our common stock to decline.

Our quarterly operating results have fluctuated in the past and are likely to do so in the future. Because our operating results are difficult to predict, one should not rely on quarterly or annual comparisons of our results of operations as an indication of our future performance. Factors that could cause our operating results to fluctuate during any period or that could adversely affect our ability to achieve our strategic objectives include those listed in this “*Risk Factors*” section of this report and the following:

- the timing of, and compliance with license or service agreements and the terms and conditions for payment to us of license or service fees under these agreements;
- fluctuations in our royalties caused by the pricing terms of certain of our license agreements;
- the amount of our product and service revenue;
- changes in the level of our operating expenses;
- delays in our introduction of new technologies or market acceptance of these new technologies through new license agreements;
- our ability to protect or enforce our intellectual property rights or the terms of our agreements;
- legal proceedings affecting our patents, patent applications or license agreements;
- the timing of the introduction by others of competing technologies;
- changes in demand for semiconductor chips in the specific end markets in which we concentrate;
- changes in demand for camera-enabled devices including cell phones, security systems and personal computers;
- the timing of the conclusion of license agreements;
- the length of time it takes to establish new licensing arrangements;
- meeting the requirements for revenue recognition under generally accepted accounting principles;
- changes in generally accepted accounting principles including new accounting standards which may materially affect our revenue recognition and the comparability between revenue recognition and cash flow from customer royalties; and
- cyclical fluctuations in semiconductor and consumer electronics markets generally.

Due to fluctuations in our operating results, reports from market and security analysts, litigation-related developments, and other factors, the price at which our common stock will trade is likely to continue to be highly volatile. In future periods, if our revenue, royalties, billings, cash flows or operating results are below the estimates or expectations of public market analysts and investors, our stock price could decline.

We may not continue to pay dividends at the same rate we are currently paying them, or at all, and any decrease in or suspension of the dividend could cause our stock price to decline.

We currently pay a quarterly dividend of \$0.20 per share. We also have returned capital to shareholders through stock repurchases. We anticipate that all quarterly dividends and stock repurchases will be paid out of cash, cash equivalents and short-term investments. The payment of future cash dividends is subject to the final determination each quarter by our Board of Directors that the dividend remains in our best interests, which determination will be based on a number of factors, including our earnings, financial condition, actual and forecasted cash flows, capital resources and capital requirements, alternative uses of capital, economic condition and other factors considered relevant by management and the Board of Directors. Any decrease

in the amount of the dividend, or suspension or discontinuance of payment of a dividend, could cause our stock price to decline.

Our stock repurchase program could increase the volatility of the price of our common stock, and the program may be suspended or terminated at any time, which may cause the trading price of our common stock to decline.

In August 2007, we authorized a plan to repurchase our outstanding shares of common stock dependent on market conditions, share price and other factors. As of September 30, 2019, the total amount available for repurchase under the plan was \$101.4 million.

The amount of repurchases under our stock repurchase program will vary. In 2016, we repurchased approximately 2,300,000 shares for an aggregate amount of \$67.7 million. In 2017, we repurchased approximately 654,000 shares for an aggregate amount of \$15.3 million. In 2018, we repurchased approximately 2,137,000 shares for an aggregate amount of \$41.4 million. In the first three quarters of 2019, we did not repurchase any shares. Additionally, the timing of repurchases is at our discretion and the program may be suspended or discontinued at any time. Any suspension or discontinuation could cause the market price of our stock to decline. The timing of repurchases pursuant to our stock repurchase program could affect our stock price and increase its volatility. There can be no assurance that any stock repurchases will enhance stockholder value because the market price of our common stock may decline below the levels at which we effected repurchases. Furthermore, we may engage in mergers, acquisitions, or other activity that could result in us reducing or discontinuing share repurchases for a period of time. For example, the DTS acquisition resulted in a significant decrease in cash, cash equivalents and short-term investments, as well as the issuance of approximately \$600 million in debt. The terms of our current or future debt agreements could limit our ability to repurchase shares.

Provisions of our certificate of incorporation and bylaws or Delaware law might delay or prevent a change of control transaction and depress the market price of our stock.

Various provisions of our certificate of incorporation and bylaws might have the effect of making it more difficult for a third party to acquire, or discouraging a third party from attempting to acquire, control of our company. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our common stock. Certain of these provisions eliminate cumulative voting in the election of directors, authorize the board to issue “blank check” preferred stock, prohibit stockholder action by written consent, eliminate the right of stockholders to call special meetings, and establish advance notice procedures for director nominations by stockholders and the submission of other proposals for consideration at stockholder meetings. We are also subject to provisions of Delaware law that could delay or make more difficult a merger, tender offer or proxy contest involving our company. In particular, Section 203 of the Delaware General Corporation Law prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years unless specific conditions are met. Any of these provisions could have the effect of delaying, deferring or preventing a change in control, including without limitation, discouraging a proxy contest or making more difficult the acquisition of a substantial block of our common stock.

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

Items 2(a) and 2(b) are not applicable.

(c) Stock Repurchases

In August 2007, the Company’s Board of Directors authorized a plan to repurchase the Company’s outstanding shares of common stock dependent on market conditions, share price and other factors. No expiration date has been specified for this plan. We made no stock repurchases during the third quarter of 2019. At September 30, 2019, the total amount available for repurchase under our stock repurchase program was \$101.4 million.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Not applicable.

Item 6. Exhibits

Exhibit Number	Exhibit Title
3.1	<u>Restated Certificate of Incorporation (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed December 1, 2016, and incorporated herein by reference)</u>
3.2	<u>Certificate of Amendment of the Restated Certificate of Incorporation dated as of February 22, 2017 (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed February 27, 2017, and incorporated herein by reference)</u>
3.3	<u>Amended and Restated Bylaws, dated as of December 1, 2016 (filed as Exhibit 3.2 to the Registrant's Current Report on Form 8-K, filed December 1, 2016, and incorporated herein by reference)</u>
3.4	<u>Amendment to the Amended and Restated Bylaws, dated as of December 6, 2016 (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed December 7, 2016, and incorporated herein by reference)</u>
3.5	<u>Amendment to the Amended and Restated Bylaws, dated as of April 27, 2017 (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed May 3, 2017, and incorporated herein by reference)</u>
3.6	<u>Amendment to the Amended and Restated Bylaws, dated as of February 1, 2018 (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed February 7, 2018, and incorporated herein by reference)</u>
3.7	<u>Amendment to the Amended and Restated Bylaws, dated as of April 27, 2018 (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed May 3, 2018, and incorporated herein by reference)</u>
3.8	<u>Amendment to the Amended and Restated Bylaws, effective as of December 15, 2018 (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed October 30, 2018, and incorporated herein by reference)</u>
31.1	<u>Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934</u>
31.2	<u>Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934</u>
32.1	<u>Certification of the Chief Executive Officer and Chief Financial Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

Certification of the Chief Executive Officer
Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934

I, Jon Kirchner, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Xperi Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (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 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/ Jon Kirchner

Jon Kirchner
Chief Executive Officer

Certification of the Chief Financial Officer
Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934

I, Robert Andersen, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Xperi Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (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 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/ Robert Andersen

Robert Andersen

Executive Vice President and Chief Financial Officer

**CERTIFICATION PURSUANT TO
RULE 13a-14(b) OF THE SECURITIES EXCHANGE ACT OF 1934
AND 18 U.S.C. SECTION 1350**

In connection with the Quarterly Report of Xperi Corporation, a Delaware corporation (the "Company"), on Form 10-Q for the three months ended September 30, 2019 as filed with the Securities and Exchange Commission (the "Report"), I, Jon Kirchner, Chief Executive Officer, certify, pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

/s/ Jon Kirchner

Jon Kirchner
Chief Executive Officer
November 6, 2019

**CERTIFICATION PURSUANT TO
RULE 13a-14(b) OF THE SECURITIES EXCHANGE ACT OF 1934
AND 18 U.S.C. SECTION 1350**

In connection with the Quarterly Report of Xperi Corporation, a Delaware corporation (the "Company"), on Form 10-Q for the three months ended September 30, 2019 as filed with the Securities and Exchange Commission (the "Report"), I, Robert Andersen, Chief Financial Officer of the Company, certify, pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

/s/ Robert Andersen

Robert Andersen
Executive Vice President and Chief Financial Officer
November 6, 2019

A signed original of this written statement required by Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350 has been provided to the Registrant and will be retained by the Registrant and furnished to the Securities and Exchange Commission or its staff upon request.