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, 2021

OR

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

Commission File Number: 001-39304

XPERI HOLDING CORPORATION
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**84-4734590**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
3025 Orchard Parkway, San Jose, California	**95134**
(Address of Principal Executive Offices)	**(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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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

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

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

The number of shares outstanding of the registrant's common stock as of October 27, 2021 was 104,530,342.

XPERI HOLDING CORPORATION
FORM 10-Q
FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2021
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PART I – FINANCIAL INFORMATION

Item 1. Financial Statements

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

	Three Months Ended		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Revenue:				
Licensing, services and software	$ 214,558	$ 195,319	$ 651,075	$ 448,802
Hardware	4,821	7,478	12,172	9,291
Total revenue	219,379	202,797	663,247	458,093
Operating expenses:				
Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets	26,043	21,854	69,875	31,646
Cost of hardware revenue, excluding depreciation and amortization of intangible assets	6,506	12,216	17,689	13,688
Research, development and other related costs	58,766	57,731	168,369	124,565
Selling, general and administrative	62,627	63,785	197,754	168,586
Depreciation expense	6,796	6,753	17,994	11,815
Amortization expense	52,388	50,894	156,825	105,447
Litigation expense	2,327	8,527	7,162	14,501
Total operating expenses	215,453	221,760	635,668	470,248
Operating income (loss)	3,926	(18,963)	27,579	(12,155)
Interest expense	(8,532)	(13,393)	(30,400)	(24,602)
Other income and expense, net	927	2,305	2,916	3,448
Loss on debt extinguishment	—	—	(8,012)	(8,300)
Loss before taxes	(3,679)	(30,051)	(7,917)	(41,609)
Provision for (benefit from) income taxes	42,698	482	35,807	(6,761)
Net loss	$ (46,377)	$ (30,533)	$ (43,724)	$ (34,848)
Less: net loss attributable to noncontrolling interest	(1,310)	(781)	(2,826)	(1,819)
Net loss attributable to the Company	$ (45,067)	$ (29,752)	$ (40,898)	$ (33,029)
Loss per share attributable to the Company:				
Basic	$ (0.43)	$ (0.28)	$ (0.39)	$ (0.44)
Diluted	$ (0.43)	$ (0.28)	$ (0.39)	$ (0.44)
Weighted average number of shares used in per share calculations-basic	104,849	107,499	104,898	75,441
Weighted average number of shares used in per share calculations-diluted	104,849	107,499	104,898	75,441

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

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

	Three Months Ended		Nine Months Ended	
	September 30, 2021	**September 30, 2020**	**September 30, 2021**	**September 30, 2020**
Net loss	$ (46,377)	$ (30,533)	$ (43,724)	$ (34,848)
Other comprehensive income (loss), net of tax:				
Change in foreign currency translation adjustment	(598)	740	(1,563)	895
Net unrealized gain (loss) on available-for-sale debt securities	2	(91)	2	(23)
Other comprehensive income (loss), net of tax	(596)	649	(1,561)	872
Comprehensive loss	(46,973)	(29,884)	(45,285)	(33,976)
Less: comprehensive loss attributable to noncontrolling interest	(1,310)	(781)	(2,826)	(1,819)
Comprehensive loss attributable to the Company	$ (45,663)	$ (29,103)	$ (42,459)	$ (32,157)

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

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

	September 30, 2021	December 31, 2020
ASSETS		
Current assets:		
Cash and cash equivalents	$ 165,438	$ 170,188
Available-for-sale debt securities	71,863	86,947
Accounts receivable, net of allowance for credit losses of $3,377 and $7,336, respectively	130,291	115,975
Unbilled contracts receivable, net of allowance for credit losses of $2,564 and $2,231, respectively	103,277	132,431
Other current assets	47,838	40,763
Total current assets	518,707	546,304
Long-term unbilled contracts receivable	4,653	6,761
Property and equipment, net	61,265	63,207
Operating lease right-of-use assets	70,858	80,226
Intangible assets, net	864,485	1,004,379
Goodwill	851,088	847,029
Other long-term assets	153,486	153,270
Total assets	$ 2,524,542	$ 2,701,176
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 16,081	$ 13,045
Accrued legal fees	3,582	5,783
Accrued liabilities	108,934	129,035
Current portion of long-term debt, net	36,037	43,689
Deferred revenue	43,989	33,119
Total current liabilities	208,623	224,671
Deferred revenue, less current portion	28,601	39,775
Long-term deferred tax liabilities	19,181	24,754
Long-term debt, net	738,438	795,661
Noncurrent operating lease liabilities	57,124	66,243
Other long-term liabilities	101,421	98,953
Total liabilities	1,153,388	1,250,057
Commitments and contingencies (Note 15)		
Company stockholders' equity:		
Preferred stock: $0.001 par value; (2021: authorized 15,000 shares; 2020: authorized 15,000 shares; and no shares issued and outstanding)	—	—
Common stock: $0.001 par value; (2021: authorized 350,000 shares, issued 113,395 shares, outstanding 104,508 shares; 2020: authorized 350,000 shares, issued 110,182, outstanding 104,775 shares)	113	110
Additional paid-in capital	1,324,763	1,268,471
Treasury stock at cost (2021: 8,887 shares; 2020: 5,407 shares)	(152,453)	(77,218)
Accumulated other comprehensive income (loss)	(297)	1,264
Retained earnings	207,600	264,250
Total Company stockholders' equity	1,379,726	1,456,877
Noncontrolling interest	(8,572)	(5,758)
Total equity	1,371,154	1,451,119
Total liabilities and equity	$ 2,524,542	$ 2,701,176

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

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

	Nine Months Ended	
	September 30, 2021	September 30, 2020
Cash flows from operating activities:		
Net loss	$ (43,724)	$ (34,848)
Adjustments to reconcile net loss to net cash from operating activities:		
Depreciation of property and equipment	17,994	11,815
Amortization of intangible assets	156,825	105,447
Stock-based compensation expense	42,468	26,614
Deferred income taxes	(7,092)	(28,158)
Loss on debt extinguishment	8,012	8,300
Patent assets received in lieu of cash	(8,787)	—
Other	8,474	8,635
Changes in operating assets and liabilities:		
Accounts receivable	(14,327)	14,982
Unbilled contracts receivable	30,708	37,874
Other assets	(3,956)	(21,793)
Accounts payable	3,036	921
Accrued and other liabilities	(23,414)	(6,471)
Deferred revenue	(304)	6,115
Net cash from operating activities	165,913	129,433
Cash flows from investing activities:		
Purchases of property and equipment	(8,298)	(2,975)
Proceeds from sale of property and equipment	19	—
Net cash received (paid) for mergers and acquisitions	(17,400)	117,424
Purchases of intangible assets	(119)	(692)
Purchases of short-term investments	(65,446)	(68,093)
Proceeds from sales of investments	46,248	7,189
Proceeds from maturities of investments	33,436	19,683
Net cash from investing activities	(11,560)	72,536
Cash flows from financing activities:		
Dividends paid	(15,752)	(25,579)
Repayment of debt	(73,923)	(357,125)
Debt refinancing costs	(6,843)	—
Proceeds from debt, net of debt discount and issuance costs	—	1,010,286
Repayment of assumed debt from merger transaction	—	(734,609)
Proceeds from employee stock purchase program and exercise of stock options	13,839	4,765
Repurchases of common stock	(75,235)	(59,291)
Net cash from financing activities	(157,914)	(161,553)
Effect of exchange rate changes on cash and cash equivalents	(1,189)	758
Net increase (decrease) in cash and cash equivalents	(4,750)	41,174
Cash and cash equivalents at beginning of period	170,188	74,551
Cash and cash equivalents at end of period	$ 165,438	$ 115,725
Supplemental disclosure of cash flow information:		
Interest paid	$ 25,030	$ 20,372
Income taxes paid, net of refunds	$ 22,151	$ 30,647
Stock issued in merger transaction	$ —	$ 828,334

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

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

	Total Company Stockholders' Equity								
Three Months Ended September 30, 2021	Common Stock		Additional Paid-In Capital	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Noncontrolling Interest	Total Equity
	Shares	Amount		Shares	Amount				
Balance at July 1, 2021	104,578	$ 112	$ 1,303,768	7,324	$ (120,542)	$ 299	$ 257,905	$ (7,272)	$ 1,434,270
Issuance of subsidiary shares to noncontrolling interest	—	—	(10)	—	—	—	—	10	—
Net loss	—	—	—	—	—	—	(45,067)	(1,310)	(46,377)
Other comprehensive loss	—	—	—	—	—	(596)	—	—	(596)
Cash dividends paid on common stock ($0.05 per share)	—	—	—	—	—	—	(5,238)	—	(5,238)
Issuance of common stock in connection with exercise of stock options	1	—	19	—	—	—	—	—	19
Issuance of common stock in connection with employee stock purchase plan	604	—	6,572	—	—	—	—	—	6,572
Issuance of restricted stock, net of shares canceled	888	1	—	—	—	—	—	—	1
Repurchases of common stock, shares exchanged	(334)	—	—	334	(7,073)	—	—	—	(7,073)
Repurchases of common stock	(1,229)	—	—	1,229	(24,838)	—	—	—	(24,838)
Stock-based compensation expense	—	—	14,414	—	—	—	—	—	14,414
Balance at September 30, 2021	104,508	$ 113	$ 1,324,763	8,887	$ (152,453)	$ (297)	$ 207,600	$ (8,572)	$ 1,371,154

	Total Company Stockholders' Equity								
Nine Months Ended September 30, 2021	Common Stock		Additional Paid-In Capital	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Noncontrolling Interest	Total Equity
	Shares	Amount		Shares	Amount				
Balance at January 1, 2021	104,775	$ 110	$ 1,268,471	5,407	$ (77,218)	$ 1,264	$ 264,250	$ (5,758)	$ 1,451,119
Issuance of subsidiary shares to noncontrolling interest	—	—	(12)	—	—	—	—	12	—
Net loss	—	—	—	—	—	—	(40,898)	(2,826)	(43,724)
Other comprehensive loss	—	—	—	—	—	(1,561)	—	—	(1,561)
Cash dividends paid on common stock ($0.15 per share)	—	—	—	—	—	—	(15,752)	—	(15,752)
Issuance of common stock in connection with exercise of stock options	39	—	779	—	—	—	—	—	779
Issuance of common stock in connection with employee stock purchase plan	1,237	1	13,057	—	—	—	—	—	13,058
Issuance of restricted stock, net of shares canceled	1,937	2	—	—	—	—	—	—	2
Repurchases of common stock, shares exchanged	(726)	—	—	726	(15,417)	—	—	—	(15,417)
Repurchases of common stock	(2,754)	—	—	2,754	(59,818)	—	—	—	(59,818)
Stock-based compensation expense	—	—	42,468	—	—	—	—	—	42,468
Balance at September 30, 2021	104,508	$ 113	$ 1,324,763	8,887	$ (152,453)	$ (297)	$ 207,600	$ (8,572)	$ 1,371,154

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

Three Months Ended September 30, 2020	Total Company Stockholders' Equity								
	Common Stock		Additional Paid-In Capital	Treasury Stock		Accumulated Other Comprehensive Income	Retained Earnings	Noncontrolling Interest	Total Equity
	Shares	Amount		Shares	Amount				
Balance at July 1, 2020	108,148	$ 109	$ 1,245,717	1,277	$ (17,572)	$ 170	$ 124,887	$ (3,844)	$ 1,349,467
Issuance of subsidiary shares to noncontrolling interest	—	—	(18)	—	—	—	—	18	—
Net loss	—	—	—	—	—	—	(29,752)	(781)	(30,533)
Other comprehensive income	—	—	—	—	—	649	—	—	649
Cash dividends paid on common stock ($0.05 per share)	—	—	—	—	—	—	(5,426)	—	(5,426)
Issuance of restricted stock, net of shares canceled	595	1	—	—	—	—	—	—	1
Repurchases of common stock, shares exchanged	(219)	—	—	219	(3,262)	—	—	—	(3,262)
Repurchases of common stock	(2,832)	—	—	2,832	(35,086)	—	—	—	(35,086)
Stock-based compensation expense	—	—	10,157	—	—	—	—	—	10,157
Balance at September 30, 2020	105,692	$ 110	$ 1,255,856	4,328	$ (55,920)	$ 819	$ 89,709	$ (4,607)	$ 1,285,967

Nine Months Ended September 30, 2020	Total Company 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				
Balance at January 1, 2020	49,620	$ 64	$ 768,284	14,002	$ (368,701)	$ (53)	$ 148,317	$ (2,811)	$ 545,100
Issuance of subsidiary shares to noncontrolling interest	—	—	(23)	—	—	—	—	23	—
Net loss	—	—	—	—	—	—	(33,029)	(1,819)	(34,848)
Other comprehensive income	—	—	—	—	—	872	—	—	872
Cash dividends paid on common stock ($0.45 per share)	—	—	—	—	—	—	(25,579)	—	(25,579)
Issuance of common stock in connection with employee stock purchase plan	355	—	4,763	—	—	—	—	—	4,763
Issuance of restricted stock, net of shares canceled	1,929	2	—	—	—	—	—	—	2
Repurchases of common stock, shares exchanged	(602)	—	—	602	(9,206)	—	—	—	(9,206)
Repurchases of common stock	(3,910)	—	—	3,910	(50,085)	—	—	—	(50,085)
Common stock issued in merger transaction	58,300	58	828,276	—	—	—	—	—	828,334
Retirement of treasury stock	—	(14)	(372,058)	(14,186)	372,072	—	—	—	—
Stock-based compensation expense	—	—	26,614	—	—	—	—	—	26,614
Balance at September 30, 2020	105,692	$ 110	$ 1,255,856	4,328	$ (55,920)	$ 819	$ 89,709	$ (4,607)	$ 1,285,967

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

NOTE 1 – THE COMPANY AND BASIS OF PRESENTATION

On December 18, 2019, Xperi Corporation ("Xperi") entered into an Agreement and Plan of Merger and Reorganization with TiVo Corporation ("TiVo") to combine in an all-stock merger of equals transaction (the "Mergers"). Immediately following the consummation of the Mergers on June 1, 2020, (the "Merger Date"), Xperi Holding Corporation (the "Company"), a Delaware corporation founded in December 2019 under the name "XRAY-TWOLF HoldCo Corporation," became the parent company of both Xperi and TiVo. The common stock of Xperi and TiVo were de-registered after completion of the Mergers. On June 2, 2020, Xperi Holding Corporation's common stock, par value $0.001 per share, commenced trading on the Nasdaq Global Select Market ("Nasdaq") under the ticker symbol "XPER."

Xperi was determined to be the accounting acquirer in the Mergers. As a result, the historical financial statements of Xperi for periods prior to the Mergers are considered to be the historical financial statements of Xperi Holding Corporation. As used herein, the "Company" refers to Xperi when referring to periods prior to June 1, 2020 and to Xperi Holding Corporation when referring to periods subsequent to June 1, 2020. The Company's results of operations include the operations of TiVo after June 1, 2020, and TiVo's assets and liabilities were recorded at their estimated fair values in the Company's Condensed Consolidated Balance Sheets as of June 1, 2020.

Xperi Holding Corporation is a leading consumer and entertainment product/solutions licensing company and one of the industry's largest intellectual property (IP) licensing platforms, with a diverse portfolio of media and semiconductor intellectual property and more than 11,000 patents and patent applications worldwide. The Company invents, develops, and delivers technologies that enable extraordinary experiences. The Company's technologies, delivered via its brands (DTS, HD Radio, IMAX Enhanced, Invensas, and TiVo), and by its subsidiary, Perceive Corporation, make entertainment more entertaining, and smart devices smarter. The Company's technologies are integrated into billions of consumer devices, media platforms, and semiconductors worldwide, driving increased value for customers, partners and consumers. The Company shapes how millions of consumers access and experience entertainment content, and the Company's innovations are found in billions of devices and hundreds of millions of interfaces around the globe.

The accompanying interim unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles ("GAAP") in the United States ("U.S.") and the applicable rules and regulations of the Securities and Exchange Commission ("SEC") for interim financial information. The amounts as of December 31, 2020 have been derived from the Company's annual audited financial statements included in its Annual Report on Form 10-K for the year ended December 31, 2020, filed on February 26, 2021 (the "Form 10-K"). 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, 2020, included in the Form 10-K.

The results of operations for the three and nine months ended September 30, 2021 are not necessarily indicative of the results that may be expected for the full year ending December 31, 2021 or any future period and the Company makes no representations related thereto.

In the fourth quarter of 2018, the Company funded a new subsidiary, Perceive Corporation ("Perceive"), which was created to focus on delivering edge inference solutions. As of September 30, 2021, the Company's ownership interest in Perceive was approximately 80%. The operating results of Perceive have been consolidated in the Company's condensed consolidated financial statements for all periods presented.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

There have been no significant changes in the Company's significant accounting policies during the nine months ended September 30, 2021, as compared to the significant accounting policies described in the Form 10-K.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. The accounting estimates and assumptions that require management's most significant, challenging, and subjective judgment include the estimation of licensees' quarterly royalties prior to receiving the royalty reports, the determination of stand-alone selling price and the transaction price in an arrangement with multiple performance obligations, the estimation of variable consideration, judgment used to estimate the progress toward completion in the Company's engineering services, the collectability of accounts receivable, other intangible assets and investments, the assessment of the recoverability of goodwill, the assessment of useful lives and recoverability of other intangible assets and long-lived assets, recognition and measurement of current and deferred income tax assets and liabilities, the assessment of unrecognized tax benefits, and purchase accounting resulting from business combinations, among others. Actual results experienced by the Company may differ from management's estimates.

The COVID-19 pandemic has resulted in a global slowdown of economic activity which has reduced demand for a broad variety of goods and services, while disrupting sales channels, marketing activities and supply chains. The Company's business operations have been negatively impacted by the COVID-19 pandemic and related events, and the Company expects this disruption may continue to have a negative impact on its revenue and results of operations, especially in light of the spread of the highly contagious Delta variant. The full extent of the future impact of the COVID-19 pandemic on the Company's operational and financial performance is currently uncertain and will depend on many factors outside the Company's control, including, without limitation, the timing, extent, trajectory and duration of the pandemic; the availability, distribution and effectiveness of vaccines; the spread of new variants of COVID-19; the continued or renewed imposition of protective public safety measures; the continuing disruption of the global supply chain affecting the Company's industry; and the impact of the pandemic on the global economy and demand for consumer products.

The impact of the COVID-19 pandemic and related events, including actions taken by various government authorities in response, have increased market volatility and make the estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes more difficult. As of the date of issuance of the financial statements, the Company is not aware of any specific event or circumstance that would require it to update its estimates, judgments or revise the carrying value of its assets or liabilities. These estimates may change, as new events occur and additional information is obtained, and are recognized in the consolidated financial statements as soon as they become known.

Recently Adopted Accounting Pronouncements

In December 2019, the Financial Accounting Standards Board ("FASB") issued ASU 2019-12, "Simplifying the Accounting for Income Taxes" ("ASU 2019-12"). The purpose of the update is to reduce the complexity pertaining to certain areas in accounting for income taxes. Key amendments from ASU 2019-12 include, but are not limited to, the accounting for hybrid tax regimes, step-up in tax basis for goodwill in non-business combination transactions, intraperiod tax allocation exception to the incremental approach, and interim period accounting for enacted changes in tax law. The Company adopted the new standard prospectively on January 1, 2021. The adoption did not have an impact on the Company's consolidated financial statements.

Recent Accounting Pronouncements

In March 2020, the FASB issued ASU 2020-04, Reference Rate Reform (Topic 848): *Facilitation of the Effects of Reference Rate Reform on Financial Reporting* ("ASU 2020-04"). ASU 2020-04 provides optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The amendments in ASU 2020-04 apply only to contracts, hedging relationships, and other transactions that reference the London Interbank Offered Rate ("LIBOR") or another reference rate expected to be discontinued because of reference rate reform. In January 2021, the FASB issued ASU 2021-01, Reference Rate Reform (Topic 848), which provides further clarification on the scope of Topic 848 so that derivatives affected by the discounting transition are explicitly eligible for certain optional expedients and exceptions in Topic 848. ASU 2020-04 became effective upon issuance and may be applied prospectively to contract modifications made on or before December 31, 2022. ASU 2021-01 became effective upon issuance and may be applied on a full retrospective basis as of any date from the beginning of an interim period that includes or is subsequent to March 12, 2020 or prospectively for contract modifications made on or before December 31, 2022. The Company currently has debt agreements that reference LIBOR and will apply the amendments prospectively through December 31, 2022 as these contracts are modified to reference other rates.

NOTE 3 – REVENUE

Revenue Recognition

General

Revenue is recognized when control of the promised goods or services is transferred to a customer in an amount that reflects the consideration the Company expects to receive in exchange for those goods or services, which may include various combinations of goods and services which are generally capable of being distinct and accounted for as separate performance obligations. Revenue is recognized net of sales taxes collected from customers which are subsequently remitted to governmental authorities. In situations where foreign withholding taxes are withheld by the Company's licensee, revenue is recognized gross of withholding taxes that are remitted directly by the licensee to a local tax authority.

Some of the Company's contracts with customers contain multiple performance obligations. For these contracts, the individual performance obligations are separately accounted for if they are distinct. In an arrangement with multiple performance obligations, the transaction price is allocated among the separate performance obligations on a relative stand-alone selling price basis. The determination of stand-alone selling price considers market conditions, the size and scope of the contract, customer and geographic information, and other factors. When observable prices are not available, stand-alone selling price for separate performance obligations is based on the cost-plus-margin approach, considering overall pricing objectives. The allocation of transaction price among performance obligations in a contract may impact the amount and timing of revenue recognized in the Consolidated Statements of Operations during a given period.

When a contract with a customer includes a variable transaction price, an estimate of the consideration which the Company expects to be entitled to for transferring the promised goods or services is made at contract inception. The amount of variable consideration is estimated at contract inception by considering all available information (historical, current and forecast) at the time and updated as additional information becomes available. The estimate of variable consideration is included in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. Subsequent changes in the transaction price resulting from changes in the estimate of variable consideration are allocated to the performance obligations in the contract on the same basis as at contract inception.

When variable consideration is in the form of a sales-based or usage-based royalty in exchange for a license of IP, or when a license of IP is the predominant item to which the variable consideration relates, revenue is recognized at the later of when the subsequent sale or usage occurs or the performance obligation to which some or all of the sales-based or usage-based royalty has been allocated has been satisfied or partially satisfied.

Description of Revenue-Generating Activities

The Company operates in two business segments. In its Product segment, the Company derives the majority of its revenue from licensing its technology to customers primarily through Technology License arrangements and Technology Solutions arrangements. For Technology License arrangements, the customer obtains rights to the technology delivered at the commencement of the agreement. For Technology Solutions arrangements, the customer receives access to a platform, media or data that includes frequent updates, where access to such updates is critical to the functionality of the technology. In its IP Licensing segment, the Company licenses its innovations to leading companies in the media and semiconductor industries. IP Licensing arrangements include access to one or more of the Company's foundational patent portfolios and may also include access to some of its industry-leading technologies and proven know-how.

Technology License Arrangements

The Company licenses its audio, digital radio and imaging technology to consumer electronics ("CE") manufacturers, automotive manufacturers or their supply chain partners.

The Company generally recognizes royalty revenue from licenses based on units shipped or manufactured. Revenue is recognized in the period in which the customer's sales or production are estimated to have occurred. This may result in an adjustment to revenue when actual sales or production are subsequently reported by the customer, generally in the month or quarter following sales or production. Estimating customers' quarterly royalties prior to receiving the royalty reports requires the Company to make significant assumptions and judgments related to forecasted trends and growth rates used to estimate quantities shipped or manufactured by customers, which could have a material impact on the amount of revenue it reports on a quarterly basis.

Certain customers enter into fixed fee or minimum guarantee agreements, whereby customers pay a fixed fee for the right to incorporate the Company’s technology in the customer’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. The Company generally recognizes the full fixed fee as revenue at the beginning of the license term when the customer has the right to use the technology and begins to benefit from the license, net of the effect of any significant financing components calculated using customer-specific, risk-adjusted lending rates, with the related interest income being recognized over time on an effective rate basis. For minimum guarantee agreements where the customer exceeds the minimum, the Company recognizes revenue relating to any additional per-unit fees in the periods it believes the customer will exceed the minimum and adjusts the revenue based on actual usage once that is reported by the customer.

Technology Solutions Arrangements

Technology Solutions customers are primarily multi-channel video service providers, CE manufacturers, and end consumers. Technology Solutions revenue is primarily derived from licensing the Company’s pay-TV solutions, Personalized Content Discovery, enriched Metadata, and viewership data; selling TiVo-enabled devices like the Stream 4K; and advertising.

For Technology Solutions, the Company provides on-going media or data delivery, hosting and access to its platform, and software updates. For these solutions, the Company generally receives fees on a per-subscriber per-month basis or as a fixed fee, and revenue is recognized during the month in which the solutions are provided to the customer. For most of the Technology Solutions offerings, substantially all functionality is obtained through the Company’s continuous hosting and/or updating of the data and content. In these instances, the Company typically has a single performance obligation related to these ongoing activities in the underlying arrangement. For those arrangements that include multiple performance obligations, the Company allocates the consideration as described above and recognizes revenue for each distinct performance obligation when control of the promised goods or services is transferred to the customer.

IP License Arrangements

In its IP Licensing segment, the Company licenses (i) its media patent portfolios (“Media IP licensing”) to multichannel video programming distributors, over-the-top video service providers, consumer electronics manufacturers, social media, and other new media companies and (ii) its semiconductor technologies and associated patent portfolios (“Semiconductor IP licensing”) to memory, sensors, radio frequency (“RF”) component, and foundry companies. The Company licenses its IP portfolios under three revenue models: (i) fixed-fee Media IP licensing, (ii) fixed-fee or minimum guarantee Semiconductor IP licensing, and (iii) per-unit or per-subscriber IP licenses.

Fixed-fee Media IP licensing

The Company's long-term fixed-fee Media IP licensing agreements, which are related to the TiVo businesses following the Mergers, provide its customers with rights to future patented technologies over the term of the agreement that are highly interdependent or highly interrelated to the patented technologies provided at the inception of the agreement. The Company treats these rights as a single performance obligation with revenue recognized on a straight-line basis over the term of the fixed-fee license agreement.

At times, the Company enters into license agreements in which a licensee is released from past patent infringement claims or is granted a license to ship an unlimited number of units or for an unlimited number of subscribers over a future period for a fixed fee. In these arrangements, the Company allocates the transaction price between the release for past patent infringement claims and the future license. In determining the stand-alone selling price of the release for past patent infringement claims and the future license, the Company considers such factors as the number of units shipped in the past or the number of past subscribers and the relevant geographies of the shipped units or subscribers, the future number of subscribers or units, as well as the licensing rate the Company generally receives for per-subscriber or units shipped in the same geographies. As the release from past patent infringement claims is generally satisfied at execution of the agreement, the transaction price allocated to the release from past patent infringement claims is generally recognized in the period the agreement is executed and the amount of transaction price allocated to the future license is recognized ratably over the future license term.

Fixed-fee or minimum guarantee Semiconductor IP licensing

The Company enters into Semiconductor IP licenses that have fixed fee or minimum guarantee arrangements, whereby licensees pay a fixed fee for the right to incorporate the Company’s IP technologies 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.

The Company generally recognizes the full fixed fee as revenue at the beginning of the license term when the customer has the right to use the IP and begins to benefit from the license, net of the effect of any significant financing components calculated using customer-specific, risk-adjusted lending rates, with the related interest income being recognized over time on an effective rate basis. For minimum guarantee agreements where the customer exceeds the minimum, the Company recognizes revenue relating to any additional per-unit fees in the periods it believes the customer will exceed the minimum and adjusts the revenue based on actual usage once that is reported by the customer.

Per-unit or per-subscriber IP royalty licenses

The Company recognizes revenue from per-unit or per-subscriber IP royalty licenses in the period in which the licensee's sales or production are estimated to have occurred, which results in an adjustment to revenue when actual sales or production are subsequently reported by the licensee, which is generally in the month or quarter following usage or shipment. Estimating customers' monthly or quarterly royalties prior to receiving the royalty reports requires the Company to make significant assumptions and judgments related to forecasted trends and growth rates used to estimate quantities shipped or manufactured by customers, which could have a material impact on the amount of revenue it reports on a quarterly basis.

The Company also generates revenue from non-recurring engineering ("NRE") services, advertising, and hardware products, each of which was less than 5% of total revenue for all periods presented.

Practical Expedients and Exemptions

The Company applies a practical expedient to not perform an evaluation of whether a contract includes a significant financing component when the timing of revenue recognition differs from the timing of cash collection by one year or less.

The Company applies a practical expedient to expense costs to obtain a contract with a customer as incurred as a component of selling, general and administrative expenses when the amortization period would have been one year or less.

The Company applies a practical expedient when disclosing revenue expected to be recognized from unsatisfied performance obligations to exclude contracts with customers with an original duration of less than one year; amounts attributable to variable consideration arising from (i) a sales-based or usage-based royalty of a technology license or (ii) when variable consideration is allocated entirely to a wholly unsatisfied performance obligation; or to a wholly unsatisfied promise to transfer a distinct good or service that forms part of a single performance obligation.

Revenue Details

The following information depicts how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors by disaggregating revenue by product category/end market and geographic location (presented in "Note 16 - *Segment and Geographic Information*").

Revenue disaggregated by product category/end market was as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Product revenue	$ 117,732	$ 122,552	$ 361,740	$ 242,618
Consumer Experience	46,143	49,141	144,274	117,935
Pay-TV	54,237	54,917	160,591	76,217
Connected Car	17,352	18,494	56,875	48,466
IP Licensing revenue	101,647	80,245	301,507	215,475
Total revenue	$ 219,379	$ 202,797	$ 663,247	$ 458,093

Contract Balances

Contracts Assets

Contract assets primarily consist of unbilled contracts receivable that are expected to be received from customers in future periods, where the revenue recognized to date exceeds the amount billed. The amount of unbilled contracts receivable 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. Contract assets also include the incremental costs of obtaining a contract with a customer, principally sales commissions when the renewal commission is not commensurate with the initial commission, and deferred

engineering costs for significant software customization or modification and set-up services to the extent deemed recoverable. Contract assets were recorded in the Condensed Consolidated Balance Sheets as follows (in thousands):

	September 30, 2021	December 31, 2020
Unbilled contracts receivable	$ 103,277	$ 132,431
Other current assets	1,115	1,208
Long-term unbilled contracts receivable	4,653	6,761
Other long-term assets	2,824	2,591
Total contract assets	$ 111,869	$ 142,991

Contract Liabilities

Contract liabilities are mainly comprised of deferred revenue related to consumer lifetime subscriptions for the TiVo service, multi-period licensing or cloud-based services, and other offerings for which the Company is paid in advance while the promised good or service is transferred to the customer at a future date or over time. Deferred revenue also includes amounts received related to professional services to be performed in the future. Deferred revenue arises when cash payments are received, including amounts which are refundable, in advance of performance obligations being completed.

Allowance for Credit Losses

The allowance for credit losses, which includes the allowance for accounts receivable and unbilled contracts receivable, represents the Company's best estimate of lifetime expected credit losses inherent in those financial assets. The Company's lifetime expected credit losses are determined using relevant information about past events (including historical experience), current conditions, and reasonable and supportable forecasts that affect collectability. The Company monitors its credit exposure through ongoing credit evaluations of its customers' financial condition and limits the amount of credit extended when deemed necessary. In addition, the Company performs routine credit management activities such as timely account reconciliations, dispute resolution, and payment confirmations. The Company may employ collection agencies and legal counsel to pursue recovery of defaulted receivables.

The Company's long-term unbilled contracts receivable is derived from fixed-fee or minimum-guarantee arrangements, primarily with large well-capitalized companies. It is generally considered to be of high credit quality due to past collection history and the nature of the customers.

The following table presents the activity in the allowance for credit losses for the three and nine months ended September 30, 2021 and 2020 (in thousands):

	Three Months Ended September 30, 2021		Nine Months Ended September 30, 2021	
	Accounts Receivable	Unbilled Contracts Receivable	Accounts Receivable	Unbilled Contracts Receivable
Beginning balance	$ 4,131	$ 3,274	$ 7,336	$ 2,231
Provision for credit losses	464	(710)	2,213	(197)
Recoveries	(1,146)	—	(2,202)	—
Charged-off/other adjustments	(72)	—	(3,970) (1)	530
Balance at end of period	$ 3,377	$ 2,564	$ 3,377	$ 2,564

(1) The charge-off of accounts receivable in the nine months ended September 30, 2021 was primarily related to a customer whose account had been substantially reserved for credit losses in 2020 due to its deteriorating financial condition and delinquent payment history.

	Three Months Ended September 30, 2020		Nine Months Ended September 30, 2020	
	Accounts Receivable	Unbilled Contracts Receivable	Accounts Receivable	Unbilled Contracts Receivable
Beginning balance	$ 2,469	$ 357	$ 566	$ —
Provision for credit losses	1,163	232	3,391 (2)	589
Charged-off/other adjustments	(8)	1	(333)	1
Balance at end of period	$ 3,624	$ 590	$ 3,624	$ 590

(2) The increase in provision for credit losses was based on assessment of then current conditions, including the impact of the COVID-19 pandemic and anticipation of delayed or delinquent payments on existing accounts receivable as a result of declining financial health and liquidity positions of certain of the Company's customers.

Additional Disclosures

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Revenue recognized in the period from:				
Amounts included in deferred revenue at the beginning of the period	$ 5,924	$ 12,364	$ 24,076	$ 50
Performance obligations satisfied in previous periods (true ups, licensee reporting adjustments and settlements)*	$ 8,382	$ 12,232	$ 41,298	$ 66,454

*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. Settlements represent resolutions of litigation during the period for past royalties owed pursuant to expired or terminated IP license agreements.

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 certain of the Company's fixed fee arrangements and engineering services contracts. The Company's remaining revenue under contracts with performance obligations was as follows (in thousands):

	As of	
	September 30, 2021	December 31, 2020
Revenue from contracts with performance obligations expected to be satisfied in:		
2021 (remaining 3 months)	$ 50,340	$ 152,008
2022	162,783	102,764
2023	141,706	91,636
2024	114,326	77,989
2025	106,710	76,028
Thereafter	14,125	429
Total	$ 589,990	$ 500,854

NOTE 4 – COMPOSITION OF CERTAIN FINANCIAL STATEMENT CAPTIONS

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

	September 30, 2021	December 31, 2020
Income tax receivable	$ 5,091	$ 4,654
Prepaid expenses	26,042	20,393
Inventory*	9,438	9,819
Other	7,267	5,897
	$ 47,838	$ 40,763

*All inventory is finished goods.

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

	September 30, 2021	December 31, 2020
Equipment, furniture and other	$ 76,340	$ 61,573
Building and improvements	18,309	18,309
Land	5,300	5,300
Leasehold improvements	26,093	25,776
	126,042	110,958
Less: accumulated depreciation and amortization	(64,777)	(47,751)
	$ 61,265	$ 63,207

Other long-term assets consisted of the following (in thousands):

	September 30, 2021	December 31, 2020
Non-current income tax receivable	$ 119,220	$ 122,993
Long-term deferred tax assets	8,561	7,042
Other assets	25,705	23,235
	$ 153,486	$ 153,270

Accrued liabilities consisted of the following (in thousands):

	September 30, 2021	December 31, 2020
Employee compensation and benefits	$ 31,139	$ 55,449
Accrued expenses	28,744	24,809
Accrued income taxes	19,522	4,677
Current portion of operating lease liabilities	16,444	17,893
Accrued severance	1,413	5,332
Third-party royalties	4,832	5,906
Other	6,840	14,969
	$ 108,934	$ 129,035

Other long-term liabilities consisted of the following (in thousands):

	September 30, 2021	December 31, 2020
Long-term income tax payable	$ 96,291	$ 94,397
Other	5,130	4,556
	$ 101,421	$ 98,953

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

	September 30, 2021	December 31, 2020
Foreign currency translation adjustment, net of tax	$ (218)	$ 1,345
Unrealized loss on available-for-sale debt securities, net of tax	(79)	(81)
	$ (297)	$ 1,264

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. The Company classifies its debt securities as available-for-sale ("AFS"), which are accounted for at fair value with credit related losses recognized as a provision for credit loss expense in its Condensed Consolidated Statements of Operations and all non-credit related unrealized gains and losses recognized in accumulated other comprehensive income 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 Statements of Operations.

The following is a summary of marketable securities at September 30, 2021 and December 31, 2020 (in thousands):

	September 30, 2021				
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Allowance for Credit Losses	Estimated Fair Values
Marketable securities					
Corporate bonds and notes	$ 45,195	$ 6	$ (16)	$ —	$ 45,185
Commercial paper	27,683	1	(6)	—	27,678
Total debt securities	72,878	7	(22)	—	72,863
Money market funds	4,579	—	—	—	4,579
Total equity securities	4,579	—	—	—	4,579
Total marketable securities	$ 77,457	$ 7	$ (22)	$ —	$ 77,442
Reported in:					
Cash and cash equivalents					$ 5,579
Available-for-sale debt securities					71,863
Total marketable securities					$ 77,442

	December 31, 2020				
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Allowance for Credit losses	Estimated Fair Values
Marketable securities					
Corporate bonds and notes	$ 69,973	$ 29	$ (42)	$ —	$ 69,960
Commercial paper	15,991	—	(4)	—	15,987
Treasury and agency notes and bills	32,299	—	—	—	32,299
Total debt securities	118,263	29	(46)	—	118,246
Money market funds	3,849	—	—	—	3,849
Total equity securities	3,849	—	—	—	3,849
Total marketable securities	$ 122,112	$ 29	$ (46)	$ —	$ 122,095
Reported in:					
Cash and cash equivalents					$ 35,148
Available-for-sale debt securities					86,947
Total marketable securities					$ 122,095

At September 30, 2021 and December 31, 2020, the Company had $237.3 million and $257.1 million, respectively, in cash, cash equivalents and short-term investments. A significant portion of these amounts was held in marketable securities, as

shown above. The remaining balance of $159.9 million and $135.0 million at September 30, 2021 and December 31, 2020, respectively, was cash held in operating accounts not included in the tables above.

Debt Securities

The gross realized gains and losses on sales of marketable debt securities were not material during the three and nine months ended September 30, 2021 and 2020, respectively.

Unrealized losses on AFS debt securities were $0.1 million and $0.1 million, net of tax, as of September 30, 2021 and December 31, 2020, respectively. The Company evaluated whether the decline in fair value has resulted from credit losses or other factors and concluded these amounts were related to temporary fluctuations in value of AFS securities and were due primarily to changes in interest rates and market conditions of the underlying securities. In addition, the contractual terms of those investments do not permit the issuer to settle the securities at a price less than the amortized cost bases of the investments. The Company does not intend to sell the debt securities and it is more-likely-than-not that it will not be required to sell the investments before recovery of their amortized cost bases. The Company did not recognize a provision for credit losses related to its AFS debt securities for the three and nine months ended September 30, 2021 and 2020, respectively.

The following table summarizes the fair value and gross unrealized losses related to individual AFS debt securities at September 30, 2021 and December 31, 2020, 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	
September 30, 2021	**Fair Value**	**Gross Unrealized Losses**	**Fair Value**	**Gross Unrealized Losses**	**Fair Value**	**Gross Unrealized Losses**
Corporate bonds and notes	$ 21,765	$ (15)	$ 5,580	$ (1)	$ 27,345	$ (16)
Commercial paper	20,930	(6)	—	—	20,930	(6)
Total	$ 42,695	$ (21)	$ 5,580	$ (1)	$ 48,275	$ (22)

	Less Than 12 Months		12 Months or More		Total	
December 31, 2020	**Fair Value**	**Gross Unrealized Losses**	**Fair Value**	**Gross Unrealized Losses**	**Fair Value**	**Gross Unrealized Losses**
Corporate bonds and notes	$ 53,137	$ (42)	$ —	$ —	$ 53,137	$ (42)
Commercial paper	12,988	(4)	—	—	12,988	(4)
Total	$ 66,125	$ (46)	$ —	$ —	$ 66,125	$ (46)

The estimated fair value of marketable debt securities by contractual maturity at September 30, 2021 is shown below (in thousands). Actual maturities may differ from contractual maturities because issuers may have the right to call or prepay obligations without penalties.

	Estimated Fair Value
Due in one year or less	$ 66,659
Due in one to two years	6,204
Total	$ 72,863

Non-marketable Equity Securities

Investments in entities over which the Company has the ability to exercise significant influence, but does not hold a controlling interest, are accounted for using the equity method. Under the equity method, the Company records its proportionate share of income or loss in other income and expense, net, in the Condensed Consolidated Statements of Operations. Investments in entities over which the Company does not have the ability to exercise significant influence and which do not have readily determinable fair values, are initially recognized at cost and remeasured through earnings when there is an observable transaction involving the same or similar investment of the same issuer, or due to an impairment (referred to as the “measurement alternative”). The fair value of non-marketable equity investments is not estimated if there are no identified events or changes in circumstances that may have a significant adverse effect on the fair value of the investment. The Company monitors its non-marketable securities portfolio for potential impairment. When there is evidence that the expected fair value of the investment has declined to below the recorded cost, the impairment loss is recorded in other income and expense, net, in the Condensed Consolidated Statements of Operations.

Upon merging with TiVo on June 1, 2020, the Company assumed certain investments in non-marketable equity securities. As of September 30, 2021 and December 31, 2020, other long-term assets included equity securities accounted for under the equity method with a carrying amount of $4.8 million and $4.2 million, respectively, and equity securities without a readily determinable fair value with a carrying amount of $0.1 million and $0.1 million, respectively. No impairments or adjustments to the carrying amount of the Company's equity securities without a readily determinable fair value were recognized in the three and nine months ended September 30, 2021 and 2020, respectively.

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, 2020 and September 30, 2021.

The following sets forth the fair value, and classification within the hierarchy, of the Company’s assets required to be measured at fair value on a recurring basis as of September 30, 2021 (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)	$ 4,579	$ 4,579	$ —	$ —
Commercial paper - debt securities (3)	27,678	—	27,678	—
Corporate bonds and notes - debt securities (2)	45,185	—	45,185	—
Total Assets	$ 77,442	$ 4,579	$ 72,863	$ —

(1) Reported as cash and cash equivalents in the Condensed Consolidated Balance Sheets.
(2) Reported as AFS debt securities in the Condensed Consolidated Balance Sheets.
(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 AFS debt securities in the Condensed Consolidated Balance Sheets.

The following sets forth the fair value, and classification within the hierarchy, of the Company's assets required to be measured at fair value on a recurring basis as of December 31, 2020 (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)	$ 3,849	$ 3,849	$ —	$ —
Corporate bonds and notes - debt securities (2)	69,960	—	69,960	—
Treasury and agency notes and bills - debt securities (3)	32,299	—	32,299	—
Commercial paper - debt securities (3)	15,987	—	15,987	—
Total Assets	$ 122,095	$ 3,849	$ 118,246	$ —

(1) Reported as cash and cash equivalents in the Condensed Consolidated Balance Sheets.
(2) Reported as AFS debt securities in the Condensed Consolidated Balance Sheets.
(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 AFS debt securities in the Condensed Consolidated Balance Sheets.

Financial Instruments Not Recorded at Fair Value

The Company's long-term debt is carried at amortized 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, 2021		December 31, 2020	
	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
2020 Term B Loan Facility (1)	$ —	$ —	$ 839,302	$ 842,579
Refinanced Tern B Loans (1)	799,875	797,875	—	—
2021 Convertible Notes	—	—	48	48
Total long-term debt, net	**$ 799,875**	**$ 797,875**	$ 839,350	$ 842,627

(1) Carrying amounts of long-term debt are net of unamortized debt discount and issuance costs of $25.4 million and $34.4 million as of September 30, 2021 and December 31, 2020, respectively. See "Note 9 – *Debt*" for additional information.

If reported at fair value in the Condensed Consolidated Balance Sheets, the Company's debt would be classified within Level 2 of the fair value hierarchy. The fair value of the debt was estimated based on the quoted market prices for the same or similar issues.

Non-recurring Fair Value Measurements

The following table represents the activity in intangible assets that are measured at fair value on a non-recurring basis (in thousands):

	Patents
Balance at December 31, 2020	$ —
Assets acquired (1)	8,787
Balance at September 30, 2021	$ 8,787

(1)This amount represents the value of the patents that were acquired by the Company during the third quarter of 2021. The fair value of these assets was measured using both the market approach – estimating the value of the acquired assets by way of comparison with other comparable transactions, and the cost approach – estimating the value of the acquired assets based on the cost it would take for the Company to create a comparable set of assets through its own research and development ("R&D") and patent prosecution efforts.

NOTE 7 – BUSINESS COMBINATIONS

TiVo

Effective June 1, 2020, Xperi and TiVo completed the merger of equals transaction (the "Merger") contemplated by the Agreement and Plan of Merger and Reorganization, dated as of December 18, 2019, as amended on January 31, 2020, (the "Merger Agreement"), by and among Xperi, TiVo, XRAY-TWOLF HoldCo Corporation ("Xperi Holding"), XRAY Merger Sub Corporation ("Xperi Merger Sub") and TWOLF Merger Sub Corporation ("TiVo Merger Sub"). Immediately prior to the consummation of the Merger, Xperi Holding changed its name to "Xperi Holding Corporation" (the "Company"). Pursuant to the Merger Agreement, (i) Xperi Merger Sub was merged with and into Xperi, with Xperi surviving the merger as a subsidiary of Xperi Holding Corporation (the "Xperi Merger") and (ii) TiVo Merger Sub was merged with and into TiVo, with TiVo surviving the merger as a subsidiary of Xperi Holding Corporation (the "TiVo Merger" and together with the Xperi Merger, the "Mergers"). Immediately following the consummation of the Mergers, each of Xperi and TiVo became wholly-owned subsidiaries of the Company.

The Mergers created a leading consumer and entertainment product/solutions and IP licensing company. The Company's IP business includes one of the industry's largest and most successful IP portfolios licensed to a diverse base of customers. On the product side, the Company offers a seamless end-to-end entertainment experience from creation to consumption, with greater scale, technology depth and breadth, and a platform relevant to one of the biggest challenges consumers of entertainment face today – how to quickly and easily find, watch and enjoy entertainment.

The Company is currently contemplating and may pursue, subject to any required regulatory approvals, a separation of the Company's product business and IP licensing business through a tax-efficient transaction, resulting in two independent, publicly traded companies. The Company continues to evaluate the optimal timing of the contemplated business separation and currently anticipates that such separation will not be completed earlier than the first half of 2022.

Merger Consideration

The consideration of $828.3 million for the Mergers was calculated as follows (amounts in thousands except exchange ratio and share price):

TiVo common shares outstanding as of June 1, 2020		128,132		
TiVo exchange ratio		0.455		
Xperi Holding Corporation common stock issued in exchange		58,300		
Xperi Common Stock closing share price on June 1, 2020	$	14.00		
			$	816,201
Fair value of replaced TiVo equity awards relating to pre-acquisition vesting of the equity award holders' requisite service periods				12,133
Total merger consideration			$	828,334

Purchase Price Allocation

Based on an evaluation of the provisions of ASC 805, "Business Combinations," Xperi was determined to be the accounting acquirer in the Mergers. The Company has applied the acquisition method of accounting that requires, among other things, that identifiable assets acquired and liabilities assumed generally be recognized on the balance sheet at fair value as of the acquisition date. In determining the fair value, the Company utilized various forms of the income, cost and market approaches depending on the asset or liability being fair valued. The estimation of fair value required significant judgment related to future net cash flows (including revenue, operating expenses, and working capital), discount rates reflecting the risk inherent in each cash flow stream, competitive trends, market comparables, and other factors. Inputs were generally determined by taking into account historical data (supplemented by current and anticipated market conditions) and growth rates.

The preliminary fair value estimates and assumptions to measure the assets acquired and liabilities assumed were subject to change as

the Company obtained additional information during the measurement period. During the three months ended June 30, 2021, the Company completed its accounting for the Mergers with no further adjustments made to the fair value. The following table sets forth the purchase price allocation, as well as adjustments made during the measurement period ($ in thousands):

	Estimated Useful Life (years)		Preliminary Fair Value (1)	Measurement Period Adjustments (2)	Final Fair Value
Cash and cash equivalents			$ 117,424	$ —	$ 117,424
Accounts receivable			105,778	—	105,778
Unbilled contracts receivable			69,058	—	69,058
Other current assets			21,690	233	21,923
Long-term unbilled contracts receivable			129	—	129
Property and equipment			41,307	—	41,307
Operating lease right-of-use assets			71,444	—	71,444
Identifiable intangible assets:					
Patents	10	457,400			
Customer contracts and related relationships	4-9	358,200			
Developed technology	5	34,800			
Content database	9	6,200			
Trademarks and tradenames	N/A	21,400			
Total identifiable intangible assets			878,000	—	878,000
Goodwill			461,129	116	461,245
Other long-term assets			43,700	(141)	43,559
Accounts payable			(13,258)	—	(13,258)
Accrued legal fees			(5,619)	—	(5,619)
Accrued liabilities			(79,071)	(530)	(79,601)
Current portion of deferred revenue			(29,291)	—	(29,291)
Current portion of long-term debt			(734,609)	—	(734,609)
Deferred revenue, less current portion			(24,319)	—	(24,319)
Long-term deferred tax liabilities			(27,949)	421	(27,528)
Long-term debt			(48)	—	(48)
Noncurrent operating lease liabilities			(59,291)	—	(59,291)
Other long-term liabilities			(7,870)	(99)	(7,969)
Total purchase price			$ 828,334	$ —	$ 828,334

(1) As previously reported in the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2020.

(2) All adjustments were recorded during the 12-month period following the Merger date. These measurement period adjustments primarily related to current indirect taxes payable, current and non-current income taxes receivable and payable, and deferred taxes as additional information was received and tax returns were finalized. All measurement period adjustments were offset against goodwill.

Supplemental Pro Forma Information

The following unaudited pro forma financial information assumes the companies were combined as of January 1, 2019. The unaudited pro forma financial information as presented below is for informational purposes only and is based on estimates and assumptions that have been made solely for purposes of developing such pro forma information. This is not necessarily indicative of the results of operations that would have been achieved if the Mergers had taken place on January 1, 2019, nor is it necessarily indicative of future results. Consequently, actual results could differ materially from the unaudited pro forma financial information presented below. The following table presents the pro forma operating results as if TiVo had been included in the Company's Consolidated Statements of Operations as of January 1, 2019 (unaudited, in thousands):

	Three Months Ended September 30, 2020	Nine Months Ended September 30, 2020
Revenue	$ 202,797	$ 708,675
Net loss attributable to Xperi Holding Corporation	$ (23,085)	$ (145,649)

MobiTV

On May 31, 2021, the Company completed its acquisition of certain assets and assumption of certain liabilities of MobiTV, Inc. ("MobiTV", and the acquisition, the "MobiTV Acquisition"), a provider of application-based Pay TV video delivery solutions. The acquisition expands the Company's IPTV Managed Service capabilities, which is expected to grow the addressable market for the Company's IPTV products and further secure TiVo's position as a leading provider of Pay TV solutions. The net purchase price for the MobiTV Acquisition was $17.4 million in cash.

Preliminary Purchase Price Allocation

The MobiTV Acquisition has been accounted for as a business combination, using the acquisition method. The following table presents the allocation of the purchase price to the identifiable assets acquired and liabilities assumed based on the fair values at the acquisition date, with any excess of the purchase price over the estimated fair value of the identifiable net assets acquired recorded to goodwill, all of which is expected to be deductible for tax purposes. The allocation of the purchase price was based upon a preliminary valuation and thus the estimates and assumptions used are subject to change. Based upon the fair values acquired, the purchase price allocation is as follows ($ in thousands):

	Estimated Useful Life (years)		Estimated Fair Value
Other current assets			$ 390
Property and equipment			9,223
Operating lease right-of-use assets			1,186
Identifiable intangible assets:			
Patents	10	5,000	
Technology	6	3,260	
Total identifiable intangible assets			8,260
Goodwill			4,059
Other long-term assets			115
Accrued liabilities			(5,288)
Noncurrent operating lease liabilities			(545)
Total purchase price			$ 17,400

The above allocation of the purchase price is provisional and is still subject to change within the measurement period, including potential adjustments relating to income taxes and indirect taxes as additional information is received. The final allocation of the purchase price is expected to be completed as soon as practicable, but no later than one year from the date of the acquisition.

The results of operations and cash flows relating to the business acquired pursuant to the MobiTV Acquisition have been included in the Company's condensed consolidated financial statements for periods subsequent to May 31, 2021, and the related assets and liabilities were recorded at their estimated fair values in the Company's Condensed Consolidated Balance Sheet as of May 31, 2021. For the three and nine months ended September 30, 2021, the acquired MobiTV business contributed $3.4 million and $4.0 million in revenue, respectively, and $1.4 million and $2.5 million in operating losses, respectively, to the operating results of the Company. The operations acquired in the MobiTV Acquisition are included in the Company's Product segment.

Supplemental Pro Form Information

The following unaudited pro forma financial information assumes the MobiTV Acquisition was completed as of January 1, 2020. The unaudited pro forma financial information as presented below is for informational purposes only and is based on estimates and assumptions that have been made solely for purposes of developing such pro forma information. This is not necessarily indicative of the results of operations that would have been achieved if the MobiTV Acquisition had taken place on January 1, 2020, nor is it necessarily indicative of future results. Consequently, actual results could differ materially from the unaudited pro forma financial information presented below. The following table presents the pro forma operating results as if the acquired operations of MobiTV had been included in the Company's Condensed Consolidated Statements of Operations as of January 1, 2020 (unaudited, in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Revenue	$ 219,379	$ 205,055	$ 667,106	$ 462,990
Net loss attributable to Xperi Holding Corporation	$ (44,990)	$ (39,970)	$ (56,628)	$ (65,180)

The unaudited supplemental pro forma information above includes the following pro forma adjustments: removal of certain elements of the historical MobiTV business that were not acquired, elimination of inter-company transactions between MobiTV and TiVo, adjustments for transaction related costs, and adjustments to reflect the impact of purchase accounting adjustments. The unaudited supplemental pro forma information above does not include any cost saving synergies from operating efficiencies.

NOTE 8 – GOODWILL AND IDENTIFIED INTANGIBLE ASSETS

Goodwill

The changes to the carrying value of goodwill from January 1, 2021 through September 30, 2021 are reflected below (in thousands):

December 31, 2020	$ 847,029	
Goodwill acquired through a business acquisition (1)	4,059	
September 30, 2021	$ 851,088	(2)

(1) Related to the MobiTV Acquisition completed in June 2021. For more information regarding the transaction, see “Note 7 - Business Combinations.”

(2) The Company’s reporting units include the Product segment and the IP Licensing segment (defined further in “Note 16 - *Segment and Geographic Information*”). Of the carrying value of goodwill, approximately $527.8 million was allocated to the Product segment and approximately $323.3 million was allocated to the IP Licensing segment as of September 30, 2021.

Goodwill at each reporting unit is evaluated for potential impairment annually, as of the beginning of the fourth quarter, and whenever events or changes in circumstances indicate the carrying amount of goodwill may not be recoverable. As part of its annual goodwill impairment test, the Company elected to proceed with a quantitative interim goodwill impairment test as of September 30, 2021. Based on the quantitative assessment, the Company concluded that the fair value of the reporting units exceeded the carrying amount for both the Product and IP Licensing reporting units. As a result, no goodwill impairment charges were recognized in the three months ended September 30, 2021.

Identified Intangible Assets

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

	Average Life (Years)	September 30, 2021			December 31, 2020		
		Gross Assets	Accumulated Amortization	Net	Gross Assets	Accumulated Amortization	Net
Finite-lived intangible assets							
Acquired patents / core technology (1) (3)	3-15	$ 672,872	$ (210,188)	$ 462,684	$ 659,085	$ (167,916)	$ 491,169
Existing technology / content database (2)	5-10	251,402	(198,803)	52,599	248,110	(169,326)	78,784
Customer contracts and related relationships	3-9	649,977	(337,687)	312,290	650,171	(256,199)	393,972
Trademarks/trade name	4-10	40,083	(24,571)	15,512	40,083	(21,029)	19,054
Non-competition agreements	1	2,231	(2,231)	—	2,231	(2,231)	—
Total finite-lived intangible assets		1,616,565	(773,480)	843,085	1,599,680	(616,701)	982,979
Indefinite-lived intangible assets							
TiVo Tradename/trademarks	N/A	21,400	—	21,400	21,400	—	21,400
Total intangible assets		$ 1,637,965	$ (773,480)	$ 864,485	$ 1,621,080	$ (616,701)	$ 1,004,379

(1) In May 2021, patents were acquired through the MobiTV Acquisition with a purchase price value equal to $5.0 million. See “Note 7 – Business Combinations.”

(2) In May 2021, existing technology was acquired through the MobiTV Acquisition with a purchase price value equal to $3.3 million. See “Note 7 – Business Combinations.”
(3) In September 2021, patents were acquired by the Company with a fair value measured at $8.8 million. See “Note 6 – Fair Value” for additional information.

As of September 30, 2021, the estimated future amortization expense of total finite-lived intangible assets was as follows (in thousands):

2021 (remaining 3 months)	$	46,576
2022		156,022
2023		145,052
2024		106,138
2025		81,723
Thereafter		307,574
	$	843,085

NOTE 9 – DEBT

The outstanding amounts of debt were as follows (in thousands):

	September 30, 2021	December 31, 2020
2020 Term B Loan Facility	$ —	$ 873,750
Refinanced Term B Loans	799,875	—
2021 Convertible Notes	—	48
Unamortized debt discount and issuance costs	(25,400)	(34,448)
	774,475	839,350
Less: current portion, net of debt discount and issuance costs	(36,037)	(43,689)
Total long-term debt, net of current portion	$ 738,438	$ 795,661

2020 Term B Loan Facility

On June 1, 2020, in connection with the consummation of the Mergers with TiVo, the Company entered into a Credit Agreement (the “2020 Credit Agreement”) by and among the Company, the lenders party thereto and Bank of America, N.A., as administrative agent and collateral agent. The 2020 Credit Agreement provided for a five-year senior secured term B loan facility in an aggregate principal amount of $1,050 million (the “2020 Term B Loan Facility”). The interest rate applicable to loans outstanding under the 2020 Term B Loan Facility was equal to, at the Company’s option, either (i) a base rate plus a margin of 3.00% per annum or (ii) LIBOR plus a margin of 4.00% per annum. Commencing on September 30, 2020, the 2020 Term B Loan Facility was amortized in aggregate quarterly amounts equal to (i) with respect to repayments occurring on or prior to June 1, 2023, 1.25% of the original principal amount of the 2020 Term B Loan Facility and (ii) with respect to repayments occurring after June 1, 2023 and prior to June 1, 2025, 1.875% of the original principal amount of the 2020 Term B Loan Facility, with the balance payable on the maturity date of the 2020 Term B Loan Facility (in each case subject to adjustment for prepayments). The 2020 Term B Loan Facility was scheduled to mature on June 1, 2025. Upon the closing of the 2020 Credit Agreement, the Company borrowed $1,050 million under the 2020 Term B Loan Facility. Net proceeds were used on June 1, 2020, together with cash and cash equivalents, to refinance the existing indebtedness of the combined Company, including paydown of the TiVo 2019 Term Loan of $734.6 million. See “Note 7 – Business Combinations” for additional information relating to the Mergers. Additionally, debt discount and issuance costs of approximately $39.7 million were incurred and capitalized in connection with the 2020 Term B Loan Facility in June 2020. The Company commenced repaying quarterly installments under the 2020 Term B Loan Facility in the third quarter of 2020, and also elected to make a voluntary principal payment of $150.0 million on December 31, 2020.

Refinanced Term B Loans

On June 8, 2021, the Company and the loan parties entered into Amendment No. 1 to the 2020 Credit Agreement (the “Amendment”). In connection with the Amendment, the Company made a voluntary prepayment of $50.6 million of the term loan outstanding under the 2020 Credit Agreement using cash on hand. The Amendment provided for, among other things, (i) a replacement of the outstanding term loans with a new tranche of term loans (the “Refinanced Term B Loans”) in an aggregate

principal amount of $810.0 million, (ii) a reduction of the interest rate margin applicable to such loans to (x) in the case of base rate loans, 2.50% per annum and (y) in the case of Eurodollar loans, LIBOR plus a margin of 3.50% per annum, (iii) a prepayment premium of 1.00% in connection with any repricing transaction with respect to the Refinanced Term B Loans within six months of the closing date of the Amendment, (iv) an extension of the maturity to June 8, 2028, and (v) certain additional amendments, including amendments to provide the Company with additional flexibility under the covenant governing restricted payments. The Company commenced repaying quarterly installments under the Refinanced Term B Loans in the third quarter of 2021.

The obligations under the 2020 Credit Agreement, inclusive of any changes by the Amendment, continue to be guaranteed by Xperi, TiVo and certain other of the Company's wholly-owned material domestic subsidiaries (collectively, the "Guarantors") and continue to be secured by a lien on substantially all of the assets of the Company and the Guarantors.

The 2020 Credit Agreement, as amended, contains customary events of default, upon the occurrence of which, after any applicable cure period, the lenders will have the ability to accelerate all outstanding loans thereunder. The 2020 Credit Agreement, as amended, also contains customary representations and warranties and affirmative and negative covenants that, among other things and subject to certain exceptions, restrict the ability of the Company and its subsidiaries 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 as of September 30, 2021. The 2020 Credit Agreement, as amended, also requires the Company to make additional cash payments on an annual basis beginning in March 2023 based on certain leverage ratios and excess cash flow generated for the immediately preceding fiscal year.

Certain lenders of the 2020 Term B Loan Facility participated in the Amendment and the changes in terms were not considered substantial. Accordingly, the Company accounted for the refinancing event for these lenders as a debt modification under ASC 470-50, "Debt — Modifications and Extinguishments." Under its policy, the Company elected to continue to defer the unamortized debt discount and issuance costs for these continuing lenders related to the partial pay-down of the debt. Certain lenders of the 2020 Term B Loan Facility did not participate in the Amendment. Accordingly, the Company accounted for the refinancing event for these lenders as a debt extinguishment. As a result, the Company recorded an $8.0 million loss on debt extinguishment in the second quarter of 2021, related to the write-off of unamortized debt discount and issuance costs for the portions of the 2020 Term B Loan Facility considered to be extinguished.

In connection with its entry into the Amendment, the Company incurred $6.8 million in debt financing costs, of which $4.2 million were capitalized in accordance with ASC 835-30 "Debt Issuance Costs" and, together with a portion of the unamortized debt discount and issuance costs from the 2020 Term B Loan Facility, are being amortized into interest expense over the term of the Amendment. Under ASC 470-50, the remaining $2.6 million, primarily related to third-party fees, were recorded as selling, general and administrative expense in the second quarter of 2021.

2018 Amended Term B Loan

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 would mature on November 30, 2023.

On January 23, 2018, the Company and the loan parties entered into an amendment to the Credit Agreement (the 2018 "Amendment"). In connection with the 2018 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 2018 Amendment provided for, among other things, a replacement of the outstanding initial term loan with the new tranche term B-1 loan in a principal amount of $494.0 million. On June 1, 2020, the entire remaining balance of $344.0 million was paid off using proceeds from the 2020 Term B Loan Facility in connection with the Mergers. As a result of the refinancing transaction, the Company recorded a loss on early extinguishment of debt of $8.3 million, which consisted of unamortized debt discount and issuance costs, in its Condensed Consolidated Statements of Operations during the second quarter of 2020.

2019 Term Loan Facility

In connection with the Mergers, the Company paid off the outstanding balance under TiVo's 2019 Term Loan. The 2019 Term Loan Facility Agreement was entered into on November 22, 2019 between TiVo, as borrower, and the lenders party thereto and HPS Investment Partners, LLC as administrative agent and collateral agent. Under the 2019 Term Loan, TiVo borrowed $715.0 million, which was scheduled to mature on November 22, 2024.

Under the 2019 Term Loan Facility Agreement, TiVo was required to pay a 3.0% prepayment premium if the loan was prepaid on or prior to November 22, 2020. Further, under the same Loan Facility Agreement, the Mergers triggered certain change of control conditions that constituted an event of default, thus requiring the debt to be repaid immediately following the consummation of the Mergers. Using the proceeds from the aforementioned 2020 Term B Loan Facility, the Company, on June 1, 2020, made a full repayment of the 2019 Term Loan along with the prepayment penalty for a total payoff amount of $734.6 million.

2021 Convertible Notes

Upon consummation of the TiVo Merger on June 1, 2020, the Company assumed $48.0 thousand of Convertible Senior Notes that were issued by TiVo Solutions Inc. in September 2014 and matured on October 1, 2021 (the “2021 Convertible Notes”). The 2021 Convertible Notes bore interest at an annual rate of 2.0%, payable semi-annually in arrears on April 1 and October 1 of each year. On September 24, 2021, the entire balance of $48.0 thousand was paid off.

Interest Expense and Expected Principal Payments

At September 30, 2021, $799.9 million in total debt was outstanding. There were also $25.4 million of unamortized debt discount and issuance costs recorded as a reduction from the carrying amount of the debt. Interest rate on the Refinanced Term B Loans, including the amortization of debt discount and issuance costs, was 4.2% and interest is payable monthly. Interest expense was $8.5 million and $30.4 million for the three and nine months ended September 30, 2021, respectively. Interest expense was $13.4 million and $24.6 million for the three and nine months ended September 30, 2020, respectively. Amortized debt discount and issuance costs, which were included in interest expense, amounted to $1.2 million and $5.3 million for the three and nine months ended September 30, 2021, respectively, and $2.3 million and $4.0 million for the three and nine months ended September 30, 2020, respectively.

As of September 30, 2021, future minimum principal payments for long-term debt are summarized as follows (in thousands):

2021 (remaining 3 months)	$ 10,125
2022	40,500
2023	40,500
2024	40,500
2025	40,500
Thereafter	627,750
Total	$ 799,875

NOTE 10 – NET LOSS PER SHARE

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

	Three Months Ended		Nine Months Ended	
	September 30, 2021	**September 30, 2020**	**September 30, 2021**	**September 30, 2020**
Denominator:				
Weighted average shares of common stock outstanding	104,849	107,499	104,898	75,441
Less: shares of restricted stock subject to repurchase	—	—	—	—
Total common shares-basic	104,849	107,499	104,898	75,441
Effect of dilutive securities:				
Options	—	—	—	—
Restricted stock awards and units	—	—	—	—
Total common shares-diluted	104,849	107,499	104,898	75,441

Basic net loss per share is computed using the weighted average number of shares of common stock outstanding during the period, excluding any unvested restricted stock awards that are subject to repurchase. Diluted net income per share is computed using the treasury stock method to calculate the weighted average number of shares of common stock and, if dilutive, potential common shares outstanding during the period. Potentially dilutive common shares include unvested restricted stock awards and units and incremental common shares issuable upon the exercise of stock options, less shares repurchased 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, 2021, 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 5.5 million and 5.3 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, 2021, respectively, because including them would have been anti-dilutive.

For the three and nine months ended September 30, 2020, 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 5.6 million and 4.0 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, 2020, respectively, because including them would have been anti-dilutive.

NOTE 11 – STOCKHOLDERS' EQUITY

As described in Note 7, Xperi and TiVo completed the Mergers on June 1, 2020 to form Xperi Holding Corporation. Upon completion of the Mergers, each share of common stock of Xperi was converted into the right to receive one fully paid and non-assessable share of Company Common Stock. Further upon completion of the Mergers, each share of TiVo Common Stock was converted into the right to receive 0.455 fully paid and non-assessable shares of the Company Common Stock (the "Exchange Ratio"), in addition to cash in lieu of any fractional shares of the Company Common Stock. Following the Mergers, Xperi Common Stock and TiVo Common Stock were delisted from Nasdaq. Since June 2, 2020, the shares of Company Common Stock have been listed for trading on Nasdaq under ticker symbol "XPER."

Equity Incentive Plans

Prior to the Merger Date, the Company had implemented and granted equity awards under the Xperi Corporation Seventh Amended and Restated 2003 Equity Incentive Plan. As of the effective date of the Mergers, no future grants will be made under the plan.

The 2020 EIP

In connection with the Mergers and immediately prior to June 1, 2020, the Company adopted the Xperi Holding Corporation 2020 Equity Incentive Plan (the "2020 EIP").

Under the 2020 EIP, the Company may grant equity-based awards to employees, non-employee directors, and consultants for services rendered to the Company (or any parent or subsidiary) in the form of stock options, stock awards, restricted stock awards, restricted stock units, stock appreciation rights, dividend equivalents and performance awards (or any combination thereof). A total of 8,000,000 shares have been reserved for issuance under the 2020 EIP provided that each share issued pursuant to "full value" awards (i.e., stock awards, restricted stock awards, restricted stock units, performance awards and dividend equivalents) are counted against shares available for issuance under the 2020 EIP on a 1.5 to 1 ratio.

The 2020 EIP provides for option grants designed as either incentive stock options or nonstatutory options. Options generally are granted with an exercise price not less than the value of the common stock on the grant date and have a term of ten years from the date of grant and vest over a four-year period. The vesting criteria for restricted stock awards and restricted stock units is generally the passage of time or meeting certain performance-based objectives, and continued employment through the vesting period generally over four years for time-based awards.

Assumed Plans

On June 1, 2020, the Company assumed all then-outstanding stock options, awards, and shares available and reserved for issuance under all legacy Equity Incentive Plans of TiVo (collectively, the "Assumed Plans"). Stock options assumed from the Assumed Plans generally have vesting periods of four years and a contractual term of seven years. Awards of restricted stock and restricted stock units assumed from the Assumed Plans are generally subject to a four-year vesting period. The number of shares subject to stock options and restricted stock unit awards outstanding under these plans are included in the tables below. Shares reserved under the Assumed Plans will be available for future grants.

As of September 30, 2021, there were 4.8 million shares reserved for future grants under both the 2020 EIP and the Assumed Plans.

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, 2020	637	$ 29.59
Options granted	—	—
Options exercised	(39)	$ 20.03
Options canceled / forfeited / expired	(145)	$ 45.14
Balance at September 30, 2021	453	$ 25.43

Restricted Stock Awards and Units

Information with respect to outstanding restricted stock awards and units as of September 30, 2021 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, 2020	5,662	1,061	6,723	$ 16.63
Awards and units granted	3,577	650	4,227	$ 23.10
Awards and units vested / earned	(1,861)	(76)	(1,937)	$ 17.82
Awards and units canceled / forfeited	(746)	(99)	(845)	$ 17.68
Balance at September 30, 2021	6,632	1,536	8,168	$ 19.59

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 certain market conditions determined by the Company, in each case on a specified date or dates or over any period or periods determined by the Company, and may range from zero to 200 percent of the grant. For performance awards subject to a market vesting condition ("market-based PSUs"), the fair value per award is fixed at the grant date and the amount of compensation expense is not adjusted during the performance period regardless of changes in the level of achievement of the market condition.

Employee Stock Purchase Plans

Prior to the Mergers, the Company had implemented the Xperi Corporation 2003 Employee Stock Purchase Plan and the International Employee Stock Purchase Plan, both of which were terminated immediately prior to the effective time of the Mergers.

In connection with the Mergers and immediately prior to June 1, 2020, the Company adopted the Xperi Holding Corporation 2020 Employee Stock Purchase Plan (the "2020 ESPP"). The 2020 ESPP is implemented through consecutive overlapping 24-month offering periods, each of which is comprised of four six-month purchase periods. The first offering period commenced on September 1, 2020 and will end on August 31, 2022. Each subsequent offering period under the 2020 ESPP will be twenty-four (24) months long and will commence on each September 1 and March 1 during the term of the plan. Participants may contribute up to 100% of their base earnings and commissions through payroll deductions, and the accumulated deductions will be applied to the purchase of shares on each semi-annual purchase date. The purchase price per share will equal 85% of the fair market value per share on the start date of the offering period or, if lower, 85% of the fair market value per share on the semi-annual purchase date.

An eligible employee's right to buy the Company's common stock under the 2020 ESPP may not accrue at a rate in excess of $25,000 of the fair market value of such shares per calendar year for each calendar year of an offering period. If the fair market value per share of the Company's common stock on any purchase date during an offering period is less than the fair market value per share on the start date of the 24-month offering period, then that offering period will automatically terminate and a

new 24-month offering period will begin on the next business day. All participants in the terminated offering will be transferred to the new offering period.

As of September 30, 2021, there were 0.8 million shares reserved for grant under the Company's 2020 ESPP.

Stock Repurchase Programs

Following the termination of Xperi's prior stock repurchase program after the closing of the Mergers, on June 12, 2020 the Board of Directors (the "Board") of the Company authorized a new stock repurchase program providing for the repurchase of up to $150.0 million of the Company's Common Stock dependent on market conditions, share prices and other factors. On April 22, 2021, the Board authorized an additional $100.0 million of purchases under the existing stock repurchase plan. As of September 30, 2021, the Company has repurchased a total of approximately 7.7 million shares of common stock, since inception of the plan, at an average price of $16.93 per share for a total cost of $129.9 million. As of December 31, 2020, the Company had repurchased a total of approximately 4.9 million shares of common stock, since inception of the plan, at an average price of $14.25 per share for a total cost of $70.1 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, 2021, the total remaining amount available for repurchase under this plan was $120.1 million. The Company expects to continue to execute authorized repurchases from time to time under the plan.

The Company issues restricted stock units as part of the equity incentive plans described above. For the majority of restricted awards, shares are withheld to satisfy required withholding taxes at the vesting date. Shares withheld to satisfy required withholding taxes in connection with the vesting of restricted awards are treated as common stock repurchases in the condensed consolidated financial statements because they reduce the number of shares that would have been issued on vesting. However, these withheld shares are not included in common stock repurchases under the Company's authorized share repurchase plan. During the three months ended September 30, 2021 and 2020, the Company withheld 0.3 million and 0.2 million shares of common stock to satisfy $7.1 million and $3.3 million of required withholding taxes, respectively. During the nine months ended September 30, 2021 and 2020, the Company withheld 0.7 million and 0.6 million shares of common stock to satisfy $15.4 million and $9.2 million of required withholding taxes, respectively.

NOTE 12 – STOCK-BASED COMPENSATION EXPENSE

The effect of recording stock-based compensation ("SBC") expense for the three and nine months ended September 30, 2021 and 2020 is as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Cost of licensing, services and software revenue	$ 525	$ 258	$ 1,377	$ 332
Research, development and other related costs	5,110	3,580	14,267	9,454
Selling, general and administrative	8,779	6,319	26,824	16,828
Total stock-based compensation expense	14,414	10,157	42,468	26,614
Tax effect on stock-based compensation expense	(174)	(55)	(507)	(1,550)
Net effect on net loss	$ 14,240	$ 10,102	$ 41,961	$ 25,064

SBC expense categorized by various equity components for the three and nine months ended September 30, 2021 and 2020 is summarized in the table below (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Restricted stock awards and units	$ 12,876	$ 9,734	$ 38,206	$ 25,175
Employee stock purchase plan	1,516	401	4,200	1,387
Employee stock options	22	22	62	52
Total stock-based compensation expense	$ 14,414	$ 10,157	$ 42,468	$ 26,614

There were no options granted in the three and nine months ended September 30, 2021 and 2020.

The following assumptions were used to value the restricted stock units subject to market conditions granted during the period:

	March 2021	July 2020*
Expected life (years)	3.0	3.0
Risk-free interest rate	0.3%	0.2%
Dividend yield	1.0%	1.4%
Expected volatility	47.9%	51.3%

*There were no market-based PSUs granted prior to July 2020.

ESPP grants occur in March and September. Prior to the Mergers, the final ESPP grant under the legacy ESPP program was in February 2020. The following assumptions were used to value the ESPP shares for these grants:

	September 2021	March 2021	September 2020	February 2020
Expected life (years)	2.0	2.0	2.0	2.0
Risk-free interest rate	0.2%	0.1%	0.1%	1.4%
Dividend yield	0.9%	1.2%	1.4%	4.0%
Expected volatility	52.0%	52.0%	57.5%	45.8%

NOTE 13 – INCOME TAXES

For the three months ended September 30, 2021, the Company recorded an income tax expense of $42.7 million on pretax loss of $3.7 million. For the nine months ended September 30, 2021, the Company recorded an income tax expense of $35.8 million on a pretax loss of $7.9 million, which resulted in a year-to-date effective tax rate of (452.3)%. The income tax expense for the three and nine months ended September 30, 2021 was primarily related to foreign withholding taxes, base erosion and anti-abuse tax (“BEAT”) and unrealized foreign exchange loss from the prior year South Korea refund claims, which have remained relatively fixed on a forecast basis quarter over quarter. The negative tax rate is the result of the relatively fixed tax expense recorded against a small pre-tax loss. The Company’s effective tax rate was based on a projected 2021 U.S. GAAP pretax loss and varies significantly from the 21% U.S. federal tax rate.

For the three months ended September 30, 2020, the Company recorded an income tax expense of $0.5 million on a pretax loss of $30.1 million and for the nine months ended September 30, 2020, the Company recorded an income tax benefit of $6.8 million on a pretax loss of $41.6 million, which resulted in an effective tax rate of 16.3% for the nine months ended September 30, 2020. The tax benefit of $6.8 million is comprised of a $12.2 million tax benefit related to the five month pre-merger period and a tax expense of $5.4 million related to the four month post-merger period. The five month pre-merger income tax benefit of $12.2 million was primarily related to a net decrease in valuation allowance as a result of the Mergers, deduction from foreign-derived intangible income, releases of unrecognized tax benefits due to the lapse of applicable statutes of limitation, and deduction from transaction expenses, offset by tax expense from operating income, shortfalls from stock-based compensation, certain non-deductible expenses, and unrealized foreign exchange losses from the prior period South Korea refund claim. The four-month post-merger income tax expense of $5.4 million was primarily related to income tax expense from foreign operations, foreign withholding taxes and U.S. federal minimum tax offset by unrealized foreign exchange gains from the current period South Korean refund claim.

As of September 30, 2021, gross unrecognized tax benefits increased $1.9 million to $229.1 million compared to $227.2 million as of December 31, 2020. This was included in long-term deferred tax and other long-term liabilities on the Condensed Consolidated Balance Sheets. Of this amount, $96.3 million would affect the effective tax rate if recognized. As of September 30, 2020, gross unrecognized tax benefits of $181.7 million were included in long-term deferred tax and other long-term liabilities on the Condensed Consolidated Balance Sheets. Of this amount, $97.3 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. The Company recognized interest and penalties related to unrecognized tax benefits of $1.1 million and an insignificant amount for the nine months ended September 30, 2021 and 2020, respectively. Accrued interest and penalties were $3.6 million and $2.5 million as of September 30, 2021 and December 31, 2020, respectively.

As of September 30, 2021, the Company’s 2016 through 2020 tax years are generally open and subject to potential examination in one or more jurisdictions. Earlier tax years for the Company and its subsidiaries are also open in certain jurisdictions which

are currently subject to examination. 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 Company has submitted withholding tax refund claims with the South Korean authorities, and the final outcome is not anticipated to be settled within the next twelve months.

NOTE 14 – LEASES

The Company leases office and research facilities, data centers and office equipment under operating leases which expire through 2029. The Company's leases have remaining lease terms of one year to eight 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 the next 6 years or less. Leases with an initial term of 12 months or less are not recorded on the balance sheets; expense for these leases is recognized on a straight-line basis over the lease term. Variable lease payments are expensed as incurred and are not included within the lease liability and right-of-use assets calculation. 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. As most of the leases do not provide an implicit rate, the Company generally, for purposes of discounting lease payments, uses its incremental borrowing rate based on the estimated rate of interest for collateralized borrowing over a similar term of the lease payments at commencement date.

The Company subleases certain real estate to third parties. The sublease portfolio consists of operating leases for previously exited office space. Certain subleases include variable payments for operating costs. The subleases are generally co-terminus with the head lease, or shorter. Subleases do not include any residual value guarantees or restrictions or covenants imposed by the leases. Income from subleases is recognized as a reduction to selling, general and administrative expenses.

The components of operating lease costs were as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Fixed lease cost [1]	$ 5,701	$ 6,184	$ 16,695	$ 11,340
Variable lease cost	1,347	1,374	3,899	2,315
Less: sublease income	(2,051)	(2,452)	(7,397)	(3,295)
Total operating lease cost	$ 4,997	$ 5,106	$ 13,197	$ 10,360

(1) Includes short-term leases, which were immaterial.

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

	Three Months Ended,		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash flows from operating leases	$ 5,692	$ 6,041	$ 17,008	$ 10,767
ROU assets obtained in exchange for new lease liabilities:				
Operating leases	$ 78	$ 461	$ 3,556	$ 4,312

	September 30, 2021	December 31, 2020
Weighted-average remaining lease term (years):		
Operating leases	4.6	5.1
Weighted-average discount rate:		
Operating leases	5.1%	5.2%

Future minimum lease payments and related lease liabilities as of September 30, 2021 were as follows (in thousands):

	Operating Lease Payments (1)	Sublease Income	Net Operating Lease Payments
2021 (remaining 3 months)	$ 4,566	$ (1,803)	$ 2,763
2022	19,676	(7,487)	12,189
2023	17,645	(7,618)	10,027
2024	16,589	(7,610)	8,979
2025	15,009	(7,386)	7,623
Thereafter	9,499	(935)	8,564
Total lease payments	82,984	(32,839)	50,145
Less: imputed interest	(9,416)	—	(9,416)
Present value of lease liabilities:	$ 73,568	$ (32,839)	$ 40,729
Less: current obligations under leases (accrued liabilities)	16,444		
Noncurrent operating lease liabilities	$ 57,124		

(1) 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, 2020, future minimum lease payments were as follows (in thousands):

	Operating Lease Payments	Sublease Income	Net Operating Lease Payments
2021	$ 21,825	$ (6,257)	$ 15,568
2022	18,420	(6,117)	12,303
2023	16,776	(6,231)	10,545
2024	15,719	(6,293)	9,426
2025	14,635	(6,279)	8,356
Thereafter	8,966	(935)	8,031
Total lease payments	96,341	(32,112)	64,229
Less: imputed interest	(12,205)	—	(12,205)
Present value of lease liabilities:	$ 84,136	$ (32,112)	$ 52,024
Less: current obligations under leases (accrued liabilities)	17,893		
Noncurrent operating lease liabilities	$ 66,243		

NOTE 15 – COMMITMENTS AND CONTINGENCIES

Purchase and Other Contractual Obligations

In the ordinary course of business, the Company enters into contractual agreements with third parties that include non-cancelable payment obligations, for which it is liable in future periods. These arrangements primarily include unconditional purchase obligations to service providers. As of September 30, 2021, the Company's total future unconditional purchase obligations were approximately $127.2 million.

Inventory Purchase Commitment

The Company uses contract manufacturers to provide manufacturing services for its products. During the normal course of business, in order to manage manufacturing lead times and help ensure adequate supply, the Company enters into agreements with its contract manufacturers that either allow them to procure inventory based on criteria as defined by the Company or that establish the parameters defining the Company's requirements. A significant portion of the Company's purchase commitments arising from these agreements consist of firm, non-cancelable and unconditional purchase commitments. In certain instances, these agreements allow the Company the option to cancel, reschedule or adjust the Company's requirements based on its

business needs prior to firm orders being placed. As of September 30, 2021, the Company had total purchase commitments for inventory of $10.8 million, of which $1.3 million was accrued in the Condensed Consolidated Balance Sheet.

Indemnifications

In the normal course of business, the Company provides indemnifications of varying scopes and amounts to certain of its licensees, customers, and business partners against claims made by third parties arising from the use of the Company's products, intellectual property, services or technologies. The Company cannot reasonably estimate the possible range of losses that may be incurred pursuant to its indemnification obligations, if any. Variables affecting any such assessment include, but are not limited to: the nature of the claim asserted; the relative merits of the claim; the financial ability of the party suing the indemnified party to engage in protracted litigation; the number of parties seeking indemnification; the nature and amount of damages claimed by the party suing the indemnified party; and the willingness of such party to engage in settlement negotiations. To date, no such claims have been filed against the Company and no liability has been recorded in the Company’s financial statements.

As permitted under Delaware law, the Company has agreements whereby it indemnifies its officers and directors for certain events or occurrences while the officer or director is, or was, serving at the Company’s request in such capacity. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited; however, the Company believes, given the absence of any such payments in the Company’s history, and the estimated low probability of such payments in the future, that the estimated fair value of these indemnification agreements is immaterial. In addition, the Company has directors’ and officers’ liability insurance coverage that is intended to reduce its financial exposure and may enable the Company to recover any payments under the indemnification agreements, should they occur.

Contingencies

At each reporting period, the Company evaluates whether or not a potential loss amount or a potential range of losses 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 losses. 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.

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, or 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 results.

NOTE 16 – SEGMENT AND GEOGRAPHIC INFORMATION

The Company reports its financial results within two reportable segments: (1) Product and (2) Intellectual Property ("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.

Reportable segments are identified based on the Company's organizational structure and information reviewed by the Company's chief operating decision maker ("CODM") to evaluate performance and allocate resources. The Company's Chief Executive Officer is also the CODM as defined by the authoritative guidance on segment reporting.

The Product segment consists primarily of licensing Company-developed audio, digital radio, imaging, edge-based machine learning and multi-channel video user experience ("UX") solutions. Audio, digital radio, imaging solutions and edge-based machine learning include the delivery of software and/or hardware-based solutions to the Company's consumer electronics ("CE") customers, automotive manufacturers or their supply chain partners. UX products and services revenue is primarily derived from multi-channel video service providers and CE manufacturers, licensing the TiVo service and selling TiVo-enabled devices like the Stream 4K, Personalized Content Discovery, enriched Metadata, viewership data and advertising.

The IP Licensing segment consists primarily of licensing the Company's innovations to leading companies in the media and semiconductor industries. Licensing arrangements include access to one or more of the Company's foundational patent portfolios and may also include access to some of its industry-leading technologies and proven know-how. In media, the Company's licensees include multichannel video programming distributors, OTT video service providers, consumer electronics manufacturers, social media, and other new media companies. In semiconductor, the Company's licensees include memory, sensors, RF component, and foundry companies.

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, 2021 and 2020 (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Revenue:				
Product segment	$ 117,732	$ 122,552	$ 361,740	$ 242,618
IP Licensing segment	101,647	80,245	301,507	215,475
Total revenue	219,379	202,797	663,247	458,093
Operating expenses:				
Product segment	116,813	116,149	330,395	228,941
IP Licensing segment	34,676	40,020	103,116	70,765
Unallocated operating expenses (1)	63,964	65,591	202,157	170,542
Total operating expenses	215,453	221,760	635,668	470,248
Operating income (loss):				
Product segment	919	6,403	31,345	13,677
IP Licensing segment	66,971	40,225	198,391	144,710
Unallocated operating expenses (1)	(63,964)	(65,591)	(202,157)	(170,542)
Total operating income (loss)	$ 3,926	$ (18,963)	$ 27,579	$ (12,155)

(1) Unallocated operating expenses consist primarily of selling, marketing, 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., 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, 2021		September 30, 2020		September 30, 2021		September 30, 2020	
U.S.	$ 139,964	64%	$ 125,753	62%	$ 412,972	62%	$ 191,847	42%
Japan	20,151	9	19,107	10	70,854	11	84,461	18
South Korea	14,313	7	14,402	7	48,098	7	102,959	23
Europe and Middle East	16,090	7	10,606	5	47,360	7	22,035	5
Other	28,861	13	32,929	16	83,963	13	56,791	12
	$ 219,379	100%	$ 202,797	100%	$ 663,247	100%	$ 458,093	100%

For both the three months ended September 30, 2021 and 2020, there were no customers that individually accounted for 10% or more of total revenue. For the nine months ended September 30, 2021 and 2020, there were no customers and one customer, respectively, that each accounted for 10% or more of total revenue. As of September 30, 2021 and December 31, 2020, there were no customers and two customers, respectively, that each accounted for 10% or more of total accounts receivable.

NOTE 17 - SUBSEQUENT EVENTS

On October 29, 2021, the Board declared a cash dividend of $0.05 per share of common stock, payable on December 20, 2021 to the stockholders of record at the close of business on November 29, 2021.

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, 2020 found in the Form 10-K filed by Xperi Holding Corporation on February 26, 2021 (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 rights, 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, the impact of the COVID-19 pandemic and related events, the impact of the Mergers (as defined below) and other acquisitions on our financial condition and results of operations, our plans to separate our product and IP licensing businesses, 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 under the heading "Risk Factors" in our annual report on Form 10-K and other documents we file from time to time with the Securities and Exchange Commission (the "SEC"), such as 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, other than as required by law. 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.

Business Overview

Following consummation of the mergers between Xperi Corporation ("Xperi") and TiVo Corporation ("TiVo") on June 1, 2020 (the "Mergers"), Xperi Holding Corporation became the parent company of both Xperi and TiVo. On June 2, 2020, Xperi Holding Corporation's common stock, par value $0.001 per share, commenced trading on the Nasdaq Global Select Market ("Nasdaq") under the ticker symbol "XPER." Xperi was determined to be the accounting acquirer in the Mergers. As a result, the historical financial statements of Xperi for periods prior to the Mergers are considered to be the historical financial statements of Xperi Holding Corporation. Our results of operations include the operations of TiVo after June 1, 2020.

As used herein, the "Company," "we," "us" and "our" refer to Xperi when referring to periods prior to June 1, 2020 and Xperi Holding Corporation when referring to periods subsequent to June 1, 2020. Unless specified otherwise, the financial results in this Quarterly Report are those of the Company and its subsidiaries on a consolidated basis.

We are a leading consumer and entertainment product/solutions licensing company and one of the industry's largest intellectual property (IP) licensing platforms, with a diverse portfolio of media and semiconductor intellectual property and more than 11,000 patents and patent applications worldwide. We invent, develop, and deliver technologies that enable extraordinary experiences. Xperi technologies, delivered via our brands (DTS, HD Radio, IMAX Enhanced, Invensas, TiVo), and by our subsidiary, Perceive Corporation ("Perceive"), make entertainment more entertaining, and smart devices smarter. Our technologies are integrated into billions of consumer devices, media platforms, and semiconductors worldwide, driving increased value for partners, customers and consumers. We shape how millions of consumers access and experience entertainment content, and our innovations are found in billions of devices and hundreds of millions of interfaces around the globe. Headquartered in Silicon Valley with operations around the world, we have approximately 1,850 employees and over 35 years of operating experience.

We are currently contemplating and may pursue, subject to any required regulatory approvals, a separation of our Product business and IP Licensing business through a tax-efficient transaction, resulting in two independent, publicly traded companies. We continue to evaluate the optimal timing of the contemplated business separation and currently anticipate that such separation will not be completed earlier than the first half of 2022.

COVID-19 Impact

Our business and results of operations have been adversely affected by the global COVID-19 pandemic and related events and we expect its impact to continue. The impact to date has included periods of significant volatility in various markets and industries. The volatility has had, and we anticipate it will continue to have, an adverse effect on our customers and on our business, financial condition and results of operations, and may result in an impairment of our long-lived assets, including goodwill, increased credit losses and impairments of investments in other companies. In particular, the automotive market, as well as the broad consumer electronics industry, has been and may continue to be impacted by the pandemic and/or other events beyond our control, and further volatility could have an additional negative impact on these industries, customers, and our business. In addition, the COVID-19 pandemic and, to a lesser extent, U.S. restrictions on trade with certain Chinese customers, have impacted and may continue to impact the financial conditions of our customers.

In addition, actions by United States federal, state and foreign governments to address the COVID-19 pandemic, including travel bans, stay-at-home orders and school, business and entertainment venue closures, also had a significant adverse effect on the markets in which we conduct our businesses. COVID-19 poses the risk that our workforce, suppliers, and other partners may be prevented from conducting normal business activities for an extended period of time, including due to shutdowns or stay-at-home orders that may be requested or mandated by governmental authorities. We have implemented policies to allow our employees to work remotely as a result of the pandemic as we reviewed processes related to workplace safety, including social distancing and sanitation practices recommended by the Centers for Disease Control and Prevention. The COVID-19 pandemic could also cause delays in acquiring new customers and executing renewals and could also impact our business as consumer behavior changes in response to the pandemic.

Since the start of the summer of 2021, there has been rapid spread of the highly contagious Delta variant of COVID-19, particularly in the regions and among the age groups with low vaccination rates, leading to a resurgence in cases, hospitalizations and deaths. Businesses and consumers have been adjusting their plans to comply with renewed mask and vaccine mandates, travel restrictions, event cancellations and delayed office reopenings. Our operations and those of our customers have also been negatively impacted by certain trends arising from the COVID-19 pandemic, including labor market constraints, shortage of semiconductor components and manufacturing capacities, delays in shipments, product development and product launches and rising inflation. In addition, the widespread supply chain disruption is expected to impede global and regional economic activities, such as consumer spending and product availabilities, which may adversely affect our business operations and financial results. We have been closely monitoring the COVID-19 pandemic and its impact on our business, including legislation to mitigate the impact of COVID-19 such as the Coronavirus Aid, Relief, and Economic Security (CARES) Act which was enacted in March 2020, and the American Rescue Plan Act of 2021 which was enacted in March 2021. Although a significant portion of our anticipated revenue for 2021 is derived from fixed-fee and minimum-guarantee arrangements, primarily from large, well-capitalized customers which we believe somewhat mitigates the risks to our business, our per-unit and variable-fee based revenue will continue to be susceptible to the volatility, labor shortages, supply chain disruptions, microchip shortages, and potential market downturns induced by the COVID-19 pandemic.

The full extent of the future impact of the COVID-19 pandemic on the Company's operational and financial performance is uncertain and will depend on many factors outside the Company's control, including, without limitation, the timing, extent, trajectory and duration of the pandemic; the availability, distribution and effectiveness of vaccines; the spread of new variants of COVID-19; the continued and renewed imposition of protective public safety measures; the continuing global disruption in supply chains in our industries; and the impact of the pandemic on the global economy and demand for consumer products. Although we are unable to predict the full impact and duration of the COVID-19 pandemic on our business, we are actively managing our financial expenditures in response to continued uncertainty. Further discussion of the potential impacts on our business from the COVID-19 pandemic is provided under Part I, Item 1A – Risk Factors of the Form 10-K.

Results of Operations

Revenue

We operate in two business segments. In our Product segment, we derive the majority of the revenue from licensing our technology to customers primarily through Technology License arrangements and Technology Solutions arrangements. For Technology License arrangements, the customer obtains rights to the technology delivered at the commencement of the agreement. For Technology Solutions arrangements, the customer receives access to a platform, media or data that includes frequent updates, where access to such updates is critical to the functionality of the technology. In our IP Licensing segment,

we license our innovations to leading companies in the media and semiconductor industries. IP Licensing arrangements include access to one or more of our foundational patent portfolios and may also include access to some of our industry-leading technologies and proven know-how.

Technology License Arrangements

We license our audio, digital radio and imaging technology to consumer electronics ("CE") manufacturers, automotive manufacturers or their supply chain partners.

We generally recognize royalty revenue from licenses based on units shipped or manufactured. Revenue is recognized in the period in which the customer's sales or production are estimated to have occurred. This may result in an adjustment to revenue when actual sales or production are subsequently reported by the customer, generally in the month or quarter following sales or production. Estimating customers' quarterly royalties prior to receiving the royalty reports requires us to make significant assumptions and judgments related to forecasted trends and growth rates used to estimate quantities shipped or manufactured by customers, which could have a material impact on the amount of revenue we report on a quarterly basis.

Certain customers enter into fixed fee or minimum guarantee agreements, whereby customers pay a fixed fee for the right to incorporate our technology in the customer'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. We generally recognize the full fixed fee as revenue at the beginning of the license term when the customer has the right to use the technology and begins to benefit from the license, net of the effect of any significant financing components calculated using customer-specific, risk-adjusted lending rates, with the related interest income being recognized over time on an effective rate basis. For minimum guarantee agreements where the customer exceeds the minimum, we recognize revenue relating to any additional per-unit fees in the periods we believe the customer will exceed the minimum and adjusts the revenue based on actual usage once that is reported by the customer.

Technology Solutions Arrangements

Technology Solutions customers are primarily multi-channel video service providers, CE manufacturers, and end consumers. Technology Solutions revenue is primarily derived from licensing our pay-TV solutions, Personalized Content Discovery, enriched Metadata, and viewership data; selling TiVo-enabled devices like the Stream 4K; and advertising.

For Technology Solutions, we provide on-going media or data delivery, hosting and access to our platform, and software updates. For these solutions, we generally receive fees on a per-subscriber per-month basis or as a fixed fee, and revenue is recognized during the month in which the solutions are provided to the customer. For most of the Technology Solutions offerings, substantially all functionality is obtained through our continuous hosting and/or updating of the data and content. In these instances, we typically have a single performance obligation related to these ongoing activities in the underlying arrangement. For those arrangements that include multiple performance obligations, we allocate the consideration and recognize revenue for each distinct performance obligation when control of the promised goods or services is transferred to the customer.

IP License Arrangements

In our IP Licensing segment, we license (i) our media patent portfolios ("Media IP licensing") to multichannel video programming distributors, over-the-top video service providers, consumer electronics manufacturers, social media, and other new media companies and (ii) our semiconductor technologies and associated patent portfolios ("Semiconductor IP licensing") to memory, sensors, radio frequency ("RF") component, and foundry companies. We license our IP portfolios under three revenue models: (i) fixed-fee Media IP licensing, (ii) fixed-fee or minimum guarantee Semiconductor IP licensing, and (iii) per-unit or per-subscriber IP licenses.

Fixed-fee Media IP licensing

Our long-term fixed-fee Media IP licensing agreements, which are related to the TiVo businesses following the Mergers, provide our customers with rights to future patented technologies over the term of the agreement that are highly interdependent or highly interrelated to the patented technologies provided at the inception of the agreement. We treat these rights as a single performance obligation with revenue recognized on a straight-line basis over the term of the fixed-fee license agreement.

At times, we enter into license agreements in which a licensee is released from past patent infringement claims or is granted a license to ship an unlimited number of units or for an unlimited number of subscribers over a future period for a fixed fee. In these arrangements, we allocate the transaction price between the release for past patent infringement claims and the future

license. In determining the stand-alone selling price of the release for past patent infringement claims and the future license, we consider such factors as the number of units shipped in the past or the number of past subscribers and the relevant geographies of the shipped units or subscribers, the future number of subscribers or units, as well as the licensing rate we generally receive for per-subscriber or units shipped in the same geographies. As the release from past patent infringement claims is generally satisfied at execution of the agreement, the transaction price allocated to the release from past patent infringement claims is generally recognized in the period the agreement is executed and the amount of transaction price allocated to the future license is recognized ratably over the future license term.

Fixed-fee or minimum guarantee Semiconductor IP licensing

We enter into Semiconductor IP licenses that have fixed fee or minimum guarantee arrangements, whereby licensees pay a fixed fee for the right to incorporate our IP technologies 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. We generally recognize the full fixed fee as revenue at the beginning of the license term when the customer has the right to use the IP and begins to benefit from the license, net of the effect of any significant financing components calculated using customer-specific, risk-adjusted lending rates, with the related interest income being recognized over time on an effective rate basis. For minimum guarantee agreements where the customer exceeds the minimum, we recognize revenue relating to any additional per-unit fees in the periods we believe the customer will exceed the minimum and adjusts the revenue based on actual usage once that is reported by the customer.

Per-unit or per-subscriber IP royalty licenses

We recognize revenue from per-unit or per-subscriber IP royalty licenses in the period in which the licensee's sales or production are estimated to have occurred, which results in an adjustment to revenue when actual sales or production are subsequently reported by the licensee, which is generally in the month or quarter following usage or shipment. Estimating customers' monthly or quarterly royalties prior to receiving the royalty reports requires us to make significant assumptions and judgments related to forecasted trends and growth rates used to estimate quantities shipped or manufactured by customers, which could have a material impact on the amount of revenue we report on a quarterly basis.

We also generate revenue from non-recurring engineering ("NRE") services, advertising, and hardware products, each of which was less than 5% of total revenue for all periods presented.

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, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Revenue:				
Licensing, services and software	98%	96%	98%	98%
Hardware	2	4	2	2
Total revenue	100	100	100	100
Operating expenses:				
Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets	12	11	10	7
Cost of hardware revenue, excluding depreciation and amortization of intangible assets	3	6	3	3
Research, development and other related costs	27	28	25	27
Selling, general and administrative	28	32	30	37
Depreciation expense	3	3	3	3
Amortization expense	24	25	24	23
Litigation expense	1	4	1	3
Total operating expenses	98	109	96	103
Operating income (loss)	2	(9)	4	(3)
Interest expense	4	7	5	5
Other income and expense, net	—	(1)	(1)	(1)
Loss on debt extinguishment	—	—	1	2
Loss before taxes	(2)	(15)	(1)	(9)
Provision for (benefit from) income taxes	19	—	6	(1)
Net loss	(21)%	(15)%	(7)%	(8)%

Total Revenue (in thousands, except for percentages):

	Three Months Ended			
	September 30, 2021	September 30, 2020	Increase/ (Decrease)	% Change
Total revenue	$ 219,379	$ 202,797	$ 16,582	8%

The $16.6 million, or 8% increase in total revenue for the three months ended September 30, 2021, compared to the same period in the prior year, was primarily attributable to an increase of $21.4 million in IP Licensing revenue, driven by revenue from the Comcast license executed in the fourth quarter of 2020, and the timing and conclusion of renewals and new executed licenses prior to and in the third quarter of 2021, and certain catch-up payments for past royalties due, partially offset by a decrease in Product revenue.

	Nine Months Ended			
	September 30, 2021	September 30, 2020	Increase/ (Decrease)	% Change
Total revenue	$ 663,247	$ 458,093	$ 205,154	45%

The $205.2 million, or 45% increase in total revenue for the nine months ended September 30, 2021, compared to the same period in the prior year, was primarily due to the inclusion of a full nine months of post-merger revenue from TiVo in the nine months ended September 30, 2021 and revenue from the Comcast license executed in the fourth quarter of 2020. These increases were partially offset by a decline in revenue from the Semiconductor IP licensing business.

Cost of Licensing, Services and Software Revenue, Excluding Depreciation and Amortization of Intangible Assets

Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets, consists primarily of employee-related costs, royalties paid to third parties, maintenance costs and an allocation of facilities costs, as

well as service center and other expenses related to providing the Pay-TV and platform solutions, NRE services and our metadata offering.

Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets, for the three months ended September 30, 2021 was $26.0 million, as compared to $21.9 million for the three months ended September 30, 2020, an increase of $4.1 million. The increase was primarily due to higher third-party royalties paid as well as increases in other delivery costs related to higher revenue in the third quarter of 2021.

Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets, for the nine months ended September 30, 2021 was $69.9 million, as compared to $31.6 million for the nine months ended September 30, 2020, an increase of $38.3 million. The increase was primarily due to the inclusion of a full nine months of post-merger TiVo expenses in the nine months ended September 30, 2021.

We anticipate cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets, will increase in 2021 on an annual basis when compared to 2020 primarily due to the inclusion of a full year of TiVo operations in our consolidated results.

Cost of Hardware Revenue, Excluding Depreciation and Amortization of Intangible Assets

Cost of hardware revenue, excluding depreciation and amortization of intangible assets, includes all product-related costs associated primarily with TiVo-enabled devices, including employee-related costs, warranty costs, order fulfillment costs, certain licensing costs, and an allocation of facilities costs.

Cost of hardware revenue, excluding depreciation and amortization of intangible assets, for the three months ended September 30, 2021 was $6.5 million, as compared to $12.2 million for the three months ended September 30, 2020, a decrease of $5.7 million. The decrease was primarily related to decreased hardware product sales in the third quarter of 2021 as well as certain hardware product costs incurred in the third quarter of 2020 from new product launches.

Cost of hardware revenue, excluding depreciation and amortization of intangible assets, for the nine months ended September 30, 2021 was $17.7 million, as compared to $13.7 million for the nine months ended September 30, 2020, an increase of $4.0 million. The increase was primarily due to the inclusion of a full nine months of post-merger TiVo expenses in the nine months ended September 30, 2021, partially offset by certain hardware product costs incurred when the product was launched in the third quarter of 2020.

We anticipate cost of hardware revenue, excluding depreciation and amortization of intangible assets, will increase in 2021 on an annual basis when compared to 2020 primarily due to the inclusion of a full year of TiVo operations in our consolidated results as well as expected growth in sales of hardware products.

Research, Development and Other Related Costs

Research, development and other related costs (“R&D expense”) are comprised primarily of employee-related costs, stock-based compensation expense, 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, reverse engineering, materials, supplies, and an allocation of facilities costs. All research, development and other related costs are expensed as incurred.

R&D expense for the three months ended September 30, 2021 was $58.8 million, as compared to $57.7 million for the three months ended September 30, 2020, an increase of $1.1 million. The increase was primarily due to employees hired in connection with the acquisition of certain assets of MobiTV in May 2021, partially offset by a decrease in personnel related costs resulting from cost synergies implemented subsequent to the Mergers.

R&D expense for the nine months ended September 30, 2021 was $168.4 million, as compared to $124.6 million for the nine months ended September 30, 2020, an increase of $43.8 million. The increase was due to the inclusion of a full nine months of post-merger TiVo R&D expenses in the nine months ended September 30, 2021, as well as employees hired in connection with the acquisition of certain assets of MobiTV in May 2021, partially offset by a decrease in personnel related costs resulting from cost synergies implemented subsequent to the Mergers.

We believe that a significant level of R&D expense will be required for us to remain competitive in the future. We also anticipate that R&D expense will increase in 2021 on annual basis when compared to 2020 primarily due to the inclusion of a full year of TiVo operations in our consolidated results.

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 ("SG&A") expenses for the three months ended September 30, 2021 were $62.6 million, as compared to $63.8 million for the three months ended September 30, 2020, a decrease of $1.2 million. The decrease was due principally to decreases in merger related severance and retention expenses, and a reduction in the provision for credit losses in the three months ended September 30, 2021, partially offset by an increase in stock-based compensation expense.

SG&A expenses for the nine months ended September 30, 2021 were $197.8 million, as compared to $168.6 million for the nine months ended September 30, 2020, an increase of $29.2 million. The increase was due principally to the inclusion of a full nine months of post-merger TiVo SG&A expenses, partially offset by decreases in merger related transaction costs, severance and retention, and provision for credit losses in the nine months ended September 30, 2021.

We anticipate SG&A expenses will increase in 2021 when compared to 2020 primarily due to the inclusion of a full year of TiVo operations in our consolidated results.

Depreciation Expense

Depreciation expense for the three months ended September 30, 2021 was $6.8 million and remains flat as compared to the same period in the prior year.

Depreciation expense for the nine months ended September 30, 2021 was $18.0 million, as compared to $11.8 million for the nine months ended September 30, 2020, an increase of $6.2 million. The increase was primarily attributable to depreciation expense on TiVo fixed assets added through the Mergers in June 2020.

We anticipate depreciation expense will continue to increase in 2021 as compared to 2020 as a result of the inclusion of the full year effect of TiVo's assets after the Mergers.

Amortization Expense

Amortization expense for the three months ended September 30, 2021 was $52.4 million, as compared to $50.9 million for the three months ended September 30, 2020, an increase of $1.5 million. The increase was primarily attributable to a significant amount of intangible assets acquired in the fourth quarter of 2020.

Amortization expense for the nine months ended September 30, 2021 was $156.8 million, as compared to $105.4 million for the nine months ended September 30, 2020, an increase of $51.4 million. The increase was primarily attributable to amortization of intangible assets recorded in connection with the Mergers in June 2020, and secondarily due to a significant amount of intangible assets acquired in the fourth quarter of 2020.

With the Mergers, we anticipate that amortization expense will continue to be a significant expense since we acquired approximately $878 million in intangible assets in the Mergers which will be amortized over the next several years. See "Note 8 – *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, 2021 was $2.3 million, as compared to $8.5 million for the three months ended September 30, 2020, a decrease of $6.2 million. The decrease was due to the resolution of prior litigation and reduced case activity.

Litigation expense for the nine months ended September 30, 2021 was $7.2 million, as compared to $14.5 million for the nine months ended September 30, 2020, a decrease of $7.3 million. The decrease was primarily due to the resolution of prior litigation and reduced case activity, partially offset by inclusion of post-merger TiVo litigation expenses.

We expect that litigation expense will continue to be a material portion of our operating expenses. Litigation expense 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 ("SBC") expense for the three and nine months ended September 30, 2021 and 2020 (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Cost of licensing, services and software revenue	$ 525	$ 258	$ 1,377	$ 332
Research, development and other related costs	5,110	3,580	14,267	9,454
Selling, general and administrative	8,779	6,319	26,824	16,828
Total stock-based compensation expense	$ 14,414	$ 10,157	$ 42,468	$ 26,614

Stock-based compensation awards include restricted stock awards and units, employee stock plan purchases, and employee stock options. The increases in SBC expense for the three and nine months ended September 30, 2021, compared to the corresponding periods in 2020, were primarily a result of including incremental expense from assumed TiVo stock awards from the Mergers and increases in stock award grants as a result of the Mergers.

Interest Expense

Interest expense for the three months ended September 30, 2021 was $8.5 million, as compared to $13.4 million for the three months ended September 30, 2020. The decrease in interest expense was primarily due to a lower average debt balance as compared to the same period in 2020 as we paid down $250.1 million of principal balance during the intervening period, and secondly a reduction in interest rate as a result of the debt refinancing in June 2021 described below.

Interest expense for the nine months ended September 30, 2021 was $30.4 million, as compared to $24.6 million for the nine months ended September 30, 2020. The increase in interest expense was primarily a result of a higher average debt balance as compared to the same period in 2020 as we entered into a new term loan of $1,050 million on June 1, 2020 to refinance the indebtedness of the combined companies in connection with the Mergers.

We anticipate interest expense will increase in 2021 when compared to 2020 as a result of a full year of the higher debt balance and amortization of debt discount and issuance costs following the Mergers, partially offset by the impact of the debt refinancing in June 2021 described below.

Other Income and expense, Net

Other income and expense, net, was $0.9 million for the three months ended September 30, 2021, as compared to $2.3 million for the three months ended September 30, 2020. Other income and expense, net, for the nine months ended September 30, 2021 was $2.9 million, as compared to $3.4 million for the nine months ended September 30, 2020. Other income and expense, net, was lower in the three and nine months ended September 30, 2021, as compared to the corresponding periods in the prior year, principally due to a decrease in interest income from significant financing components from revenue contracts, and secondarily from a decline in interest income from our short-term investments.

Loss on Debt Extinguishment

In June 2021, we refinanced the 2020 Term B Loan Facility by, among other things, lowering the interest rate on the debt. Certain lenders of the original loan syndication did not participate in the refinancing. Accordingly, we accounted for the refinancing event for these lenders as a debt extinguishment and recorded, in the second quarter of 2021, a loss on debt extinguishment of $8.0 million related to the write-off of unamortized debt discount and issuance costs for the portions of the 2020 Term B Loan Facility considered to be extinguished.

In connection with the Mergers and in June 2020, we refinanced the indebtedness of the combined companies by entering into the 2020 Term B Loan Facility, and consequently recognized a loss on early debt extinguishment on the legacy debt of $8.3 million in the second quarter of 2020.

Provision for Income Taxes

Our provision for income taxes is based on our worldwide estimated annualized effective tax rate. For jurisdictions in which a loss is forecast but no benefit can be realized for those losses, the tax is estimated separately. In certain circumstances we also record the income tax effects of discrete transactions in the quarter in which the transaction has occurred. Due to our significant net operating loss carryforwards and a valuation allowance applied against a significant portion of our deferred tax assets, foreign withholding taxes, base erosion and anti-abuse tax ("BEAT"), and unrealized foreign exchange loss from the prior year South Korea refund claims are the primary drivers of income tax expense and the primary reasons for cash tax payments of income taxes. For the three months ended September 30, 2021, our effective tax rate was based on a projected 2021 U.S. GAAP pretax loss and varies significantly from the 21% U.S. federal tax rate.

For the three months ended September 30, 2021, we recorded an income tax expense of $42.7 million on pretax loss of $3.7 million. For the nine months ended September 30, 2021, we recorded an income tax expense of $35.8 million on a pretax loss of $7.9 million, which resulted in a year-to-date effective tax rate of (452.3)%. The income tax expense for the three and nine months ended September 30, 2021 was primarily related to foreign withholding taxes, BEAT and unrealized foreign exchange loss from the prior year South Korea refund claims, which have remained relatively fixed on a forecast basis quarter over quarter. The negative tax rate is the result of the relatively fixed tax expense recorded against a small pre-tax loss.

For the three months ended September 30, 2020, we recorded an income tax expense of $0.5 million on a pretax loss of $30.1 million. For the nine months ended September 30, 2020, we recorded an income tax benefit of $6.8 million on a pretax loss of $41.6 million, which resulted in an effective tax rate of 16.3% for the nine months ended September 30, 2020. The tax benefit of $6.8 million is comprised of a $12.2 million tax benefit related to the five month pre-merger period and a tax expense of $5.4 million related to the four month post-merger period. The five month pre-merger income tax benefit of $12.2 million was primarily related to a net decrease in valuation allowance as a result of the Mergers, deduction from foreign-derived intangible income, and the release of unrecognized tax benefits due to the lapse of applicable statutes of limitation offset by tax expense from operating income, shortfalls from stock-based compensation, certain non-deductible expenses, and unrealized foreign exchange losses from the prior period South Korea refund claim. The four month post-merger income tax expense of $5.4 million was primarily related to income tax expense from foreign operations, foreign withholding taxes and U.S. federal minimum tax offset by unrealized foreign exchange gains from the current period South Korean refund claim. As a result of the Mergers, a valuation allowance was recorded on the net deferred tax assets of the U.S. federal consolidated group.

The year-over-year increase in income tax expense is largely attributable to the inclusion of nine months of TiVo activity in the current year.

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 not more-likely-than-not that we would realize our federal, certain state and certain 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 our deferred tax asset valuation allowance associated with our federal, state or foreign deferred tax assets depending on achievement of future profitability in relevant jurisdictions, or implementing tax planning strategies that enable us to utilize deferred tax assets. 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 deferred tax asset valuation allowance or the reversal of such valuation allowance is subject to objective and subjective factors that cannot be known in advance. We intend to continue maintaining a full valuation allowance on our federal deferred tax assets until there is sufficient evidence to support the reversal of all or a portion of these allowances. However, given our current earning and anticipated future earnings, we believe that there is a reasonable possibility that within the next 12 months, sufficient positive evidence may become available to allow us to reach a conclusion that a significant portion of our federal valuation allowance will no longer be needed. Release of the valuation allowance would result in the recognition of certain federal deferred tax assets and a decrease to income tax expense for the period the release is recorded.

Segment Operating Results

We operate in two reportable segments: (1) Product and (2) 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.

Our Chief Executive Officer has been determined to be the Chief Operating Decision Maker ("CODM") in consideration with the authoritative guidance on segment reporting.

The Product segment consists primarily of licensing our internally-developed audio, digital radio, imaging, edge-based machine learning and multi-channel video user experience ("UX") solutions. Audio, digital radio, imaging solutions and edge-based machine learning include the delivery of software and/or hardware-based solutions to our consumer electronics ("CE") customers, automotive manufacturers or their supply chain partners. UX products and services revenue is primarily derived from multi-channel video service providers and CE manufacturers, licensing the TiVo service and selling TiVo-enabled devices like the Stream 4K, Personalized Content Discovery, enriched Metadata, viewership data and advertising.

The IP Licensing segment consists primarily of licensing our innovations to leading companies in the media and semiconductor industries. Licensing arrangements include access to one or more of our foundational patent portfolios and may also include access to some of our industry-leading technologies and proven know-how. In media, our licensees include multichannel video programming distributors, OTT video service providers, consumer electronics manufacturers, social media and other new media companies. In semiconductor, our licensees include memory, sensors, RF component, and foundry companies.

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, 2021	**September 30, 2020**	**September 30, 2021**	**September 30, 2020**
Revenue:				
Product segment	$ 117,732	$ 122,552	$ 361,740	$ 242,618
IP Licensing segment	101,647	80,245	301,507	215,475
Total revenue	219,379	202,797	663,247	458,093
Operating expenses:				
Product segment	116,813	116,149	330,395	228,941
IP Licensing segment	34,676	40,020	103,116	70,765
Unallocated operating expenses (1)	63,964	65,591	202,157	170,542
Total operating expenses	215,453	221,760	635,668	470,248
Operating income (loss):				
Product segment	919	6,403	31,345	13,677
IP Licensing segment	66,971	40,225	198,391	144,710
Unallocated operating expenses (1)	(63,964)	(65,591)	(202,157)	(170,542)
Total operating income (loss)	$ 3,926	$ (18,963)	$ 27,579	$ (12,155)

(1) Unallocated operating expenses consist primarily of selling, marketing, general and administrative expenses, including 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.

For the three months ended September 30, 2021, the unallocated operating expenses were $64.0 million, compared to $65.6 million for the three months ended September 30, 2020. The decrease of $1.6 million was due principally to a decrease in merger related severance and retention expenses, and a reduction in the provision for credit losses, partially offset by an increase in stock-based compensation expense in the three months ended September 30, 2021.

For the nine months ended September 30, 2021, the unallocated operating expenses were $202.2 million compared to $170.5 million for the nine months ended September 30, 2020. The increase of $31.7 million was due principally to the inclusion of a full nine months of post-merger TiVo expenses, partially offset by decreases in merger related transaction costs, severance and retention, and provision for credit losses in the nine months ended September 30, 2021.

The revenue and operating income (loss) amounts in this section have been presented on a basis consistent with GAAP applied at the segment level. Of our $851.1 million in goodwill at September 30, 2021, approximately $527.8 million was allocated to our Product segment and approximately $323.3 million was allocated to our IP Licensing segment.

Product Segment

	Three Months Ended		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Total revenue	$ 117,732	$ 122,552	$ 361,740	$ 242,618
Operating expenses:				
Total cost of revenue	32,301	33,881	86,769	45,145
Research, development and other related costs	49,975	48,850	144,370	102,479
Litigation	1,483	936	3,139	1,674
Depreciation	5,225	4,671	12,851	8,840
Amortization	27,829	27,811	83,266	70,803
Total operating expenses	116,813	116,149	330,395	228,941
Total operating income (loss)	$ 919	$ 6,403	$ 31,345	$ 13,677

Product revenue for the three months ended September 30, 2021 was $117.7 million as compared to $122.5 million for the three months ended September 30, 2020, a decrease of $4.8 million. The decrease was primarily due to supply chain constraints that impacted our customers' shipment volumes in Consumer Experience and Connected Car in the three months ended September 30, 2021.

Product revenue for the nine months ended September 30, 2021 was $361.7 million as compared to $242.6 million for the nine months ended September 30, 2020, an increase of $119.1 million. The increase was primarily attributable to the inclusion of a full nine months of post-merger Product revenue from TiVo.

Operating expenses for the three months ended September 30, 2021 were $116.8 million, as compared to $116.1 million for the three months ended September 30, 2020, an increase of $0.7 million. The increase was primarily due to costs of headcount added in connection with the acquisition of certain MobiTV assets in May 2021, partially offset by decreases in hardware product costs and personnel related costs resulting from cost synergies implemented subsequent to the Mergers.

Operating expenses for the nine months ended September 30, 2021 were $330.4 million, as compared to $228.9 million for the nine months ended September 30, 2020, an increase of $101.5 million. The increase was primarily due to the inclusion of a full nine months of post-merger TiVo Product expenses, and costs of headcount added in connection with the acquisition of certain MobiTV assets in May 2021, partially offset by a decrease in personnel related costs resulting from cost synergies implemented subsequent to the Mergers.

Operating income in the three months ended September 30, 2021 was $0.9 million compared to operating income of $6.4 million in the three months ended September 30, 2020, with the variance due to the reasons stated above.

Operating income in the nine months ended September 30, 2021 was $31.3 million compared to operating income of $13.7 million in the nine months ended September 30, 2020, with the variance due to the reasons stated above.

IP Licensing Segment

	Three Months Ended		Nine Months Ended	
	September 30, 2021	September 30, 2020	September 30, 2021	September 30, 2020
Total revenue	$ 101,647	$ 80,245	$ 301,507	$ 215,475
Operating expenses:				
Total cost of revenue	248	189	795	189
Research, development and other related costs	8,791	8,881	23,999	22,086
Litigation	844	7,580	4,023	12,815
Depreciation	234	287	740	1,031
Amortization	24,559	23,083	73,559	34,644
Total operating expenses	34,676	40,020	103,116	70,765
Total operating income	$ 66,971	$ 40,225	$ 198,391	$ 144,710

IP Licensing revenue for the three months ended September 30, 2021 was $101.6 million as compared to $80.2 million for the three months ended September 30, 2020, an increase of $21.4 million. The increase was primarily due to revenue from the Comcast license executed in the fourth quarter of 2020, and the timing and conclusion of renewals and new executed licenses prior to and in the third quarter of 2021, and certain catch-up payments for past royalties due in the three months ended September 30, 2021.

IP Licensing revenue for the nine months ended September 30, 2021 was $301.5 million as compared to $215.5 million for the nine months ended September 30, 2020, an increase of $86.0 million. The increase was primarily attributable to the inclusion of a full nine months of post-merger IP Licensing revenue from TiVo and revenue from the Comcast license executed in the fourth quarter of 2020, partially offset by a decline in revenue from the Semiconductor IP licensing business in the nine months ended September 30, 2021.

Operating expenses for the three months ended September 30, 2021 were $34.7 million, as compared to $40.0 million for the three months ended September 30, 2020, a decrease of $5.3 million. The decrease was primarily due to a decrease in litigation expenses as we successfully concluded the Comcast litigation activity during the fourth quarter of 2020, partially offset by an increase in amortization expense which was primarily attributable to a significant amount of intangible assets acquired in the fourth quarter of 2020.

Operating expenses for the nine months ended September 30, 2021 were $103.1 million, as compared to $70.8 million for the nine months ended September 30, 2020, an increase of $32.3 million. The increase was primarily due to the inclusion of a full nine months of post-merger TiVo IP Licensing expenses, partially offset by a decrease in litigation expenses, and lower personnel related costs resulting from cost synergies implemented subsequent to the Mergers.

We expect that litigation expense will continue to be a material portion of our operating expenses and may fluctuate between periods because of planned or ongoing litigation, as described in Part II, Item 1 – *Legal Proceedings*, in this report, 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.

Operating income for the three months ended September 30, 2021 was $67.0 million compared to operating income of $40.2 million for the three months ended September 30, 2020, with the variance due to the reasons stated above.

Operating income for the nine months ended September 30, 2021 was $198.4 million compared to operating income of $144.7 million for the nine months ended September 30, 2020, with the variance due to the reasons stated above.

Liquidity and Capital Resources

	As of	
(in thousands, except for percentages)	**September 30, 2021**	**December 31, 2020**
Cash and cash equivalents	$ 165,438	$ 170,188
Short-term investments	71,863	86,947
Total cash, cash equivalents and short-term investments	$ 237,301	$ 257,135
Percentage of total assets	9%	10%

	Nine Months Ended	
	September 30, 2021	**September 30, 2020**
Net cash from operating activities	$ 165,913	$ 129,433
Net cash from investing activities	$ (11,560)	$ 72,536
Net cash from financing activities	$ (157,914)	$ (161,553)

Our primary sources of liquidity and capital resources are our operating cash flows and our cash and short-term investments. Cash, cash equivalents and short-term investments were $237.3 million as of September 30, 2021, a decrease of $19.8 million from $257.1 million at December 31, 2020. This decrease resulted primarily from $15.8 million in dividends paid, $75.2 million in repurchases of common stock, $73.9 million in repayment of long-term debt, $17.4 million in cash used to acquire certain assets and liabilities of MobiTV, Inc. (the "MobiTV Acquisition"), $8.3 million of capital expenditures and $6.8 million in debt refinancing costs, which was partially offset by $165.9 million in cash generated from operations and $13.8 million in proceeds from the issuance of common stock under our employee stock grant programs and employee stock purchase plans. Cash and cash equivalents totaled $165.4 million as of September 30, 2021, a decrease of $4.8 million from $170.2 million at December 31, 2020.

Cash flows provided by operations were $165.9 million for the nine months ended September 30, 2021, primarily due to our net loss of $43.7 million being adjusted for non-cash items of depreciation of $18.0 million, amortization of intangible assets of $156.8 million, stock-based compensation expense of $42.5 million and a loss on debt extinguishment of $8.0 million. These increases were partially offset by a reduction of $7.1 million in deferred income taxes and $8.3 million in changes in operating assets and liabilities.

Cash flows provided by operations were $129.4 million for the nine months ended September 30, 2020, primarily due to our net loss of $34.8 million being adjusted for non-cash items of depreciation of $11.8 million, amortization of intangible assets of $105.4 million, stock-based compensation expense of $26.6 million, loss on debt extinguishment of $8.3 million and $31.6 million in changes in operating assets and liabilities. These increases were partially offset by a reduction of $28.2 million in deferred income taxes.

Net cash used in investing activities was $11.6 million for the nine months ended September 30, 2021, primarily related to purchases of short-term investments of $65.4 million, cash used in the MobiTV Acquisition of $17.4 million and capital expenditures of $8.3 million, partially offset by maturities and sales of securities of $79.7 million.

Net cash provided by investing activities was $72.5 million for the nine months ended September 30, 2020, primarily related to maturities and sales of securities of $26.9 million and net cash acquired in the Mergers of $117.4 million, partially offset by purchase of short-term investment of $68.1 million and capital expenditures of $3.0 million.

Net cash used in financing activities was $157.9 million for the nine months ended September 30, 2021 principally due to $73.9 million in repayment of indebtedness, $6.8 million in debt refinancing costs, $15.8 million in dividends paid, and $75.2 million in repurchases of common stock, partially offset by $13.8 million in proceeds from the issuance of common stock under our employee stock grant programs and employee stock purchase plans.

Net cash used in financing activities was $161.6 million for the nine months ended September 30, 2020 principally due to $1,091.7 million in repayment of indebtedness, $25.6 million in dividends paid, and $59.3 million in repurchases of common stock, partially offset by $1,010.3 million in net long-term debt proceeds and $4.8 million in proceeds from the issuance of common stock under our employee stock grant programs and employee stock purchase plans.

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 ("AFS") with credit losses recognized as a credit loss expense and non-credit related unrealized gains and losses, net of tax, recorded in accumulated other comprehensive income or loss. The fair values for our securities are determined based on quoted market prices as of the valuation date or observable prices for similar assets.

For AFS debt securities in an unrealized loss position, we first assess whether we intend to sell, or it is more-likely-than-not that we will be required to sell the security before recovery of its amortized cost basis. If either of the criteria regarding intent or requirement to sell is met, the security's amortized cost basis is written down to fair value through income. For AFS debt securities that do not meet the aforementioned criteria, we evaluate whether the decline in fair value has resulted from credit losses or other factors. In making this assessment, we consider the extent to which fair value is less than amortized cost, any changes to the credit rating of the security by a rating agency and adverse conditions specifically related to the security, among other factors. If this assessment indicates that a credit loss exists, the present value of cash flows expected to be collected from the security are compared to the amortized cost basis of the security. If the present value of cash flows expected to be collected is less than the amortized cost basis, a credit loss exists and an allowance for credit losses is recorded for the credit loss, limited by the amount that the fair value is less than the amortized cost basis. Any impairment that has not been recorded through an allowance for credit losses is recognized in accumulated other comprehensive income or loss. We did not recognize a provision for credit losses related to our AFS debt securities in the three and nine months ended September 30, 2021 and 2020, respectively.

On December 1, 2016, we entered into a Credit Agreement with Royal Bank of Canada ("RBC") which provided for a $600.0 million seven-year term B loan facility. The Term B Loan Facility was scheduled to mature on November 30, 2023. During 2019 we made three voluntary principal payments totaling $150.0 million, and upon consummation of the Mergers on June 1, 2020, we repaid the full remaining balance of $344.0 million under the Credit Agreement. In addition, upon consummation of the Mergers on June 1, 2020, we repaid $734.6 million of assumed TiVo debt with the proceeds from a new borrowing of $1,050 million discussed below.

On June 1, 2020, in connection with the consummation of the Mergers, we entered into a Credit Agreement (the “2020 Credit Agreement”) by and among us, the lenders party thereto and Bank of America, N.A., as administrative agent and collateral agent. The 2020 Credit Agreement provided for a five-year senior secured term B loan facility in an aggregate principal amount of $1,050 million (the “2020 Term B Loan Facility”). The interest rate applicable to loans outstanding under the 2020 Term B Loan Facility was equal to, at our option, either (i) a base rate plus a margin of 3.00% per annum or (ii) LIBOR plus a margin of 4.00% per annum. Commencing on September 30, 2020, the 2020 Term B Loan Facility was amortized in quarterly installments equal to (i) with respect to repayments occurring on or prior to June 1, 2023, 1.25% of the original principal amount of the 2020 Term B Loan Facility and (ii) with respect to repayments occurring after June 1, 2023 and prior to June 1, 2025, 1.875% of the original principal amount of the 2020 Term B Loan Facility, with the balance payable on the maturity date of the 2020 Term B Loan Facility (in each case subject to adjustment for prepayments). The 2020 Term B Loan Facility was scheduled to mature on June 1, 2025. Upon the closing of the 2020 Credit Agreement, we borrowed $1,050 million under the 2020 Term B Loan Facility. Net proceeds were used on June 1, 2020, together with cash and cash equivalents, to repay existing indebtedness of the combined Company, including the aforementioned Term B Loan Facility with RBC. We commenced repaying quarterly installments under the 2020 Term B Loan Facility in the third quarter of 2020. The agreement permitted prepayment of principal without penalty and on December 31, 2020, we elected to make a voluntary principal payment of $150.0 million. On June 8, 2021, we paid down $50.6 million in principal balance and completed a refinancing of the 2020 Term B Loan Facility by entering into an amendment to the 2020 Term B Loan Facility (the “Refinanced Term B Loans”) to provide a new loan facility in the amount of $810.0 million, reducing the borrowing rate by 50 basis points and extending the loan maturity date to June 2028. We commenced repaying quarterly installments under the Refinanced Term B Loans in the third quarter of 2021.

At September 30, 2021, $799.9 million was outstanding under the Refinanced Term B Loans with an interest rate, including amortization of debt discount and issuance costs, of 4.2%. Interest is payable monthly. Under the existing loan agreements, we have future minimum principal payments for our debt of $10.1 million for the remainder of 2021, $40.5 million in each year from 2022 through 2027, with the remaining principal balance of $546.8 million due in 2028. We are obligated to pay a portion of excess cash flow on an annual basis beginning in March 2023 based on certain leverage ratios and our excess cash flow generated for the immediately preceding calendar year. The Refinanced Term B Loans contain customary covenants, and as of September 30, 2021, we were in full compliance with such covenants.

Following the closing of the Mergers, on June 12, 2020, our Board of Directors terminated a prior stock repurchase program and approved a new stock repurchase plan (the “Plan”) providing for the repurchase of up to $150.0 million of our common stock dependent on market conditions, share price and other factors. No expiration has been specified for this Plan. On April 22, 2021, our Board of Directors authorized an additional $100.0 million of purchases under the Plan. The stock repurchases may be made from time to time, through solicited or unsolicited transactions in the open market, in privately negotiated transactions, or pursuant to a Rule 10b5-1 plan. Since the inception of the Plan, and through September 30, 2021, we have repurchased an aggregate of approximately 7.7 million shares of common stock at a total cost of $129.9 million at an average price of $16.93. During the nine months ended September 30, 2021, we repurchased an aggregate of approximately 2.8 million shares of common stock at a total cost of $59.8 million at an average price of $21.72. As of September 30, 2021, the total remaining amount available for repurchase under the Plan was $120.1 million. We may continue to execute authorized repurchases from time to time under the Plan. The amount and timing of any repurchases under the Plan depend on a number of factors, including but not limited to, the trading price, volume and availability of our common shares. There is no guarantee that such repurchases under the Plan will enhance the value of our common stock.

On October 29, 2021, the Board declared a cash dividend of $0.05 per share of common stock, payable on December 20, 2021 to the stockholders of record at the close of business on November 29, 2021. We anticipate that all quarterly dividends will be paid out of cash, cash equivalents and short-term investments.

From 2018 through the third quarter of 2021, we generated approximately $898 million of cash flows from operating activities. While we expect to continue to generate cash flows from operating activities for the remainder of 2021, the COVID-19 pandemic continues to present uncertainties to the level of such cash flows as compared to prior years. Additionally, integration of the two legacy business operations of Xperi and TiVo post-merger and transaction costs relating to the contemplated separation of our two business segments are expected to impact operating cash flow for the next 12 months. We have taken actions to manage cash flows by reducing discretionary spending and other variable costs, delaying employee hiring, and closely monitoring receivables and payables.

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, 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. The sale of additional equity securities could

result in dilution to our stockholders. The incurrence of indebtedness would result in increased debt service obligations and may include covenants that would restrict our operations.

Contractual Obligations

For information about our contractual obligations, see "Contractual Obligations" in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2020. Other than the principal payment of $73.9 million made by us under our long-term debt in the first nine months of 2021, our contractual obligations have not changed materially since December 31, 2020.

As of September 30, 2021, we had accrued $96.3 million of unrecognized tax benefits in long-term income taxes payable related to uncertain tax positions, which includes $3.6 million of accrued interest and penalties. 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. If we are successful in receiving our South Korean withholding tax refunds of $119.2 million, including interest and foreign exchange gain, then $63.0 million of unrecognized tax benefit would be payable to the U.S. tax authorities.

Refer to "Note 15 – Commitments and Contingencies" of the Notes to Condensed Consolidated Financial Statements for additional information.

Critical Accounting Policies and Estimates

During the nine months ended September 30, 2021, there were no significant changes in our critical accounting policies. See "Note 2 – Summary of Significant Accounting Policies" of the Notes to the Condensed Consolidated Financial Statements for additional detail. 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 Part II, 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 Holding 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

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in our reports filed or submitted 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 Chief Executive Officer and Chief 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, because of the material weaknesses in internal control over financial reporting described below, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were not effective at the reasonable assurance level as of September 30, 2021.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis. As described in our annual report on Form 10-K for the year ended December 31, 2020, management determined that the following control deficiencies that constituted material weaknesses in our internal control over financial reporting existed as of December 31, 2020 and continue to exist as of September 30, 2021.

The Company did not design and maintain effective controls related to the review of cash flow forecasts used in the valuation of intangible assets acquired in a business combination and the goodwill impairment analyses. Specifically, the control activities related to the review of the inputs and assumptions used in the development of the cash flow forecast used in the valuation of intangible assets acquired in a business combination and goodwill impairment analyses were not designed at an appropriate level of precision to prevent or detect a material misstatement. These control deficiencies did not result in a misstatement to our annual or interim consolidated financial statements. However, these control deficiencies could result in a misstatement to the annual or interim consolidated financial statements which would result in a material misstatement of the annual or interim consolidated financial statements that would not be prevented or detected. Accordingly, our management has determined that these control deficiencies constitute material weaknesses.

Remediation Plan

Our management, with oversight from our Audit Committee, has developed and is in process of implementing a remediation plan in response to the identified material weaknesses described above. We engaged a third-party firm that assisted us in evaluating our current processes through interviews with employees involved in those processes and review of the related work product for controls related to the valuation of intangible assets acquired in a business combination and goodwill impairment calculations. During the third quarter of 2021, we conducted training and designed and implemented control activities over the review of the inputs and assumptions in our cash flow forecasts. We expect to continue to design and implement additional control activities and implement the control activities during the fourth quarter of 2021. Additionally, we expect to perform operating effectiveness testing of the newly designed control activities during the fourth quarter of 2021.

These material weaknesses will not be considered remediated until the newly designed and implemented controls operate for a sufficient period of time and management has concluded, through testing, that these controls are operating effectively. We believe the measures described above will remediate the material weaknesses we have identified and strengthen our internal control over financial reporting. We are committed to continuing to improve our internal control processes and will continue to review, optimize and enhance our financial reporting controls and procedures.

The process of designing and implementing an effective financial reporting system is a continuous effort that requires us to anticipate and react to changes in our business and the economic and regulatory environments, and to expend significant resources to maintain a financial reporting system that is adequate to satisfy our reporting obligations. As we continue to evaluate and take actions to improve our internal control over financial reporting, we may determine to take additional actions to address control deficiencies or determine to modify certain of the remediation measures described above.

Changes in Internal Control over Financial Reporting

As described above under the Remediation Plan, there were changes in our internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act, during the fiscal quarter covered by this Quarterly Report on Form 10-Q that materially affected or are reasonably likely to materially affect our internal control over financial reporting.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings

In the normal course of our business we are involved in legal proceedings. In the past, we have litigated to enforce our 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 ourselves or our customers against claims of infringement or invalidity. We expect to continue to be involved in similar legal proceedings in the future, including proceedings regarding infringement of our patents, and proceedings to ensure proper and full payment of royalties by licensees under the terms of our license agreements.

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.

Patent Infringement Litigation

From time-to-time in the ordinary course of our patent licensing business, we are required to engage in litigation to protect our intellectual property from infringement. While litigation is never our preference and we prefer to reach mutually agreeable commercial licensing arrangements with third parties, it is sometimes a necessary step to effectively protect our investment in patented technology. As a result of these lawsuits, defendants have often filed *Inter Partes* Review ("IPR") petitions with the U.S. Patent Office's Patent Trial and Appeal Board (and other similar post-grant proceedings outside of the U.S.) seeking to invalidate one or more of the patents-in-suit. We are currently engaged in multiple lawsuits with several third parties.

Videotron Patent Infringement Litigation

On June 23, 2017, Rovi Guides, Inc. ("Rovi") and TiVo Solutions Inc. (together with Rovi, "TiVo") filed a patent infringement complaint against Videotron Ltd. and Videotron G.P. (together, "Videotron") in Toronto, Canada, alleging infringement of six patents. Videotron was a prior licensee under the Rovi patent portfolio. The first week of trial on four patents was held the week of March 9, 2020. The Federal Court of Canada closed due to the COVID-19 pandemic on March 16, 2020, and the trial was temporarily stayed. The trial resumed on May 25, 2020, conducted remotely by video, and concluded on June 17, 2020. The parties filed their written closing submissions on September 30, 2020. The closing arguments were held in January 2021. No date is set by the Court to issue its judgement.

On May 21, 2021, Rovi filed a patent infringement complaint against Videotron in Toronto, Canada, alleging infringement of four patents. On July 21, 2021, the Federal Court of Canada held a case management conference, shortly before which Videotron filed a motion to strike various portions of the statement of claim. On October 22, 2021, the Court held a hearing on Videotron's motion to strike. To date, the Court has not ruled on the motion. No further dates have been set.

Bell and Telus Patent Infringement Litigation

On January 19, 2018, TiVo filed a patent infringement complaint against Bell Canada (and four of its affiliates) in Toronto, Canada, alleging infringement of six patents. On February 2, 2018, TiVo filed a patent infringement complaint against Telus Corporation (and two of its affiliates) in Toronto, Canada, alleging infringement of the same six patents. Bell Canada and Telus Corporation were previously indirectly licensed to some of Rovi's patents through a prior agreement between Rovi and one of their suppliers. The Bell Canada and Telus Corporation cases are being heard together for purposes of pre-trial and trial proceedings. On August 27, 2019, the Federal Court of Canada issued an order bifurcating the liability phase from the damages phase of the case. There is no set trial date or procedural schedule for the damages phase of the cases. The liability and injunction trial on four patents was held from July 13 – August 6, 2020. The closing arguments were held in January 2021. No date is set by the Court to issue its judgement.

On July 27, 2021, Rovi filed a patent infringement complaint against Bell Canada and four of its affiliates, Telefonaktiebolaget L M Ericsson and Ericsson Canada Inc., and MK Systems USA Inc. and MK Mediatech Canada Inc. (collectively, "Defendants") in Toronto, Canada, alleging infringement of four patents. The Defendants filed a motion to strike various portions of the statement of claim. On October 22, 2021, the Federal Court of Canada held a hearing on the Defendants motion to strike. To date, the Court has not ruled on the motion. No further dates have been set.

NVIDIA Patent Infringement Litigation

On May 8, 2019, Invensas Corporation and Tessera Advanced Technologies, Inc. filed a complaint against NVIDIA Corporation ("NVIDIA") in the United States District Court for the District of Delaware, alleging infringement of five patents, and requesting, 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 United States District Court for the Northern District of California. The Court denied NVIDIA's motion to transfer on September 17, 2019.

In September 2020, the Patent Trial and Appeal Board ("PTAB") instituted IPRs of several patents-in-suit. The parties stipulated to an order staying the litigation pending resolution of the IPR proceedings, and to dismissal of claims relating to two patents. As a result, there are three patents-in-suit remaining. One patent has no IPRs pending against it. Two patents are subject to IPRs. On June 9, 2021, the PTAB held oral arguments in the IPRs. On September 1, 2021, the PTAB issued final written decisions in the IPRs in which it found all challenged claims of the two patents invalid. On November 1, 2021, Invensas filed appeals of each of the IPR decisions with the United States Court of Appeals for the Federal Circuit. No dates in the appeals have been set yet. The district Court litigation will remain stayed pending the outcome of the IPR appeals.

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. Management believes that except as set forth below, there have been no material changes to the risk factors associated with our business as compared to those disclosed in Part 1, Item 1A. of our Annual Report on Form 10-K for the year ended December 31, 2020, which is incorporated by reference herein.

Our business and results of operations have been, and are expected to continue to be, impacted by the global COVID-19 pandemic.

Our business and results of operations have been adversely affected by the global COVID-19 pandemic and related events and we expect its impact to continue. The impact to date has included periods of significant volatility in various markets and industries. The volatility has had, and we anticipate it will continue to have, an adverse effect on our customers and on our business, financial condition and results of operations, and may result in an impairment of our long-lived assets, including goodwill, increased credit losses and impairments of investments in other companies. In particular, the automotive market, as well as the broad consumer electronics industry, has been and may continue to be impacted by the pandemic and/or other events beyond our control, and further volatility could have an additional negative impact on these industries, customers, and on our business operations, which may lead to reduced royalty revenue. In addition, the COVID-19 pandemic and, to a lesser extent, U.S. restrictions on trade with certain customers based on China, have impacted and may continue to impact the financial conditions of our customers who may not be able to satisfy their obligations under our agreements timely or at all.

In addition, actions by United States federal, state and foreign governments to address the COVID-19 pandemic, including travel bans, stay-at-home orders and school, business and entertainment venue closures, also had a significant adverse effect on the markets in which we conduct our businesses. COVID-19 poses the risk that our workforce, suppliers, and other partners may be prevented from conducting normal business activities for an extended period of time, including due to shutdowns or stay-at-home orders that may be requested or mandated by governmental authorities. We also implemented policies to allow our employees to work remotely as a result of the pandemic as we reviewed processes related to workplace safety, including social distancing and sanitation practices recommended by the Centers for Disease Control and Prevention. The impacts of the COVID-19 pandemic could also cause delays in obtaining new customers and executing renewals and could also impact our business as consumer behavior changes in response to the slowed economic conditions.

Since the start of the summer of 2021, there has been a rapid spread of the highly contagious Delta variant of COVID-19, particularly in the regions and among the age groups with low vaccination rates, leading to a resurgence in cases, hospitalizations and deaths in various jurisdictions in which we operate. Businesses and consumers have been adjusting their plans to comply with renewed and evolving mask and vaccine mandates, travel restrictions, event cancellations and delayed office reopenings. Our operations and those of our customers have also been negatively impacted by certain trends arising from the COVID-19 pandemic, including labor market constraints, shortage of semiconductor components and manufacturing capacities, delays in shipments, product development and product launches and rising inflation. In addition, the widespread supply chain disruption is expected to impede global and regional economic activities, such as consumer spending and product availabilities, which may adversely affect our business operations and financial results.

The full extent of the future impact of the COVID-19 pandemic on our operational and financial performance is uncertain and will depend on many factors beyond our control, including, without limitation, the timing, extent, trajectory and duration of the pandemic; the availability, distribution and effectiveness of vaccines; the spread of new variants of COVID-19; the continued and renewed imposition of protective public safety measures; the continuing global disruption in supply chains in our industries

and the impact of the pandemic on the global economy and demand for consumer products. Even after the pandemic has subsided and economic activities gradually increase, we may continue to experience material and adverse impacts to our business, operating results, and financial condition as a result of the pandemic's lasting global economic impact, including any recession that has occurred or may occur in the future in our industries.

Competition for employees is intense, and we may not be able to attract and retain the qualified and skilled employees needed to support our business.

Our future success depends, in part, upon our ability to recruit and retain key management, technical, sales, marketing, finance, and other critical personnel. Competition for qualified management, technical and other personnel is intense, particularly in the technology industry in which we operate, and we may not be successful in attracting and retaining such personnel. If we fail to attract and retain qualified employees, including internationally, our ability to grow our business could be harmed. Competition for talent with the specific skills that we require is significant. In order to attract and retain personnel in a competitive marketplace, we believe that we must provide a competitive compensation package, including cash and equity-based compensation. Some of the companies with which we compete for experienced personnel may be able to offer more attractive terms of employment to potential candidates. Volatility in our stock price may from time to time adversely affect our ability to recruit or retain employees. If we are unable to hire and retain qualified employees, or conversely, if we fail to manage employee performance or reduce staffing levels when required by market conditions, our business and operating results could be adversely affected.

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

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

(c) Stock Repurchases

(in thousands, except share price)	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of our share repurchase program	Approximate dollar value of shares that may yet be purchased under our share repurchase program (a)
2021				
July	—	$ —	—	
August	400	$ 21.00	400	
September	829	$ 19.83	829	
Total	1,229	$ 20.21	1,229	$ 120,100

(a) Calculated as of September 30, 2021. On June 12, 2020, our Board of Directors authorized a stock repurchase program providing for the repurchase of up to $150.0 million of the Company's common stock. The timing, price and volume of repurchases will be based on market conditions, relevant securities laws and other factors. The stock repurchases may be made from time to time, through solicited or unsolicited transactions in the open market, in privately negotiated transactions, or pursuant to a Rule 10b5-1 plan. The program may be discontinued or amended at any time and has no specified expiration date. On April 22, 2021, our Board of Directors approved an increase in the repurchase authorization under the program by $100.0 million. All repurchases in the three months ended September 30, 2021 were made under this program.

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
31.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934
31.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934
32.1	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
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)

SIGNATURES

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

Dated: November 8, 2021

XPERI HOLDING CORPORATION

By: /s/ Robert Andersen

Robert Andersen
Chief Financial Officer

Exhibit 31.1

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 Holding 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 8, 2021

/s/ Jon Kirchner
Jon Kirchner
Chief Executive Officer and President

Exhibit 31.2

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 Holding 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 8, 2021

/s/ Robert Andersen
Robert Andersen
Chief Financial Officer

Exhibit 32.1

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 Holding Corporation, a Delaware corporation (the “Company”), on Form 10-Q for the period ended September 30, 2021 as filed with the Securities and Exchange Commission (the “Report”), I, Jon Kirchner, Chief Executive Officer and President, 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 and President
November 8, 2021

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 Holding Corporation, a Delaware corporation (the “Company”), on Form 10-Q for the period ended September 30, 2021 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
Chief Financial Officer
November 8, 2021

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.