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

FORM 10-Q

(Mark One)

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

For the quarterly period ended: March 31, 2020
OR

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

For the transition period from to
Commission File Number 0-28082

KVH Industries, Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware	**05-0420589**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification Number)*

50 Enterprise Center, Middletown, RI 02842
(Address of Principal Executive Offices) (Zip Code)
(401) 847-3327
(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 $0.01 per share	KVHI	The NASDAQ Stock Market LLC (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 ☒

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Date	Class	Outstanding shares
April 27, 2020	Common Stock, par value $0.01 per share	17,993,244

KVH INDUSTRIES, INC. AND SUBSIDIARIES

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PART I. FINANCIAL INFORMATION

ITEM 1. Financial Statements

KVH INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share amounts)

	March 31, 2020	December 31, 2019
ASSETS	(unaudited)	
Current assets:		
Cash and cash equivalents	$ 18,542	$ 18,365
Marketable securities	22,487	29,907
Accounts receivable, net of allowance for doubtful accounts of $1,722 and $1,589 as of March 31, 2020 and December 31, 2019, respectively	28,968	32,891
Inventories, net	25,555	23,465
Prepaid expenses and other current assets	3,422	3,188
Current contract assets	1,424	1,458
Total current assets	100,398	109,274
Property and equipment, net	54,756	53,584
Intangible assets, net	4,432	4,943
Goodwill	14,730	15,408
Right of use asset operating lease	5,026	6,286
Other non-current assets	6,644	6,443
Non-current contract assets	3,259	3,408
Non-current deferred income tax asset	40	45
Total assets	**$ 189,285**	**$ 199,391**
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 13,818	$ 15,031
Accrued compensation and employee-related expenses	5,129	5,637
Accrued other	8,551	7,733
Accrued product warranty costs	2,212	2,194
Contract liabilities	4,933	4,443
Current operating lease liability	1,634	2,831
Liability for uncertain tax positions	532	521
Total current liabilities	36,809	38,390
Other long-term liabilities	1,138	1,292
Long-term operating lease liability	3,422	3,482
Long-term contract liabilities	5,221	5,476
Non-current deferred income tax liability	818	762
Total liabilities	**$ 47,408**	**$ 49,402**
Commitments and contingencies (Notes 2, 10, 12, and 19)		
Stockholders' equity:		
Preferred stock, $0.01 par value. Authorized 1,000,000 shares; none issued	—	—
Common stock, $0.01 par value. Authorized 30,000,000 shares; 19,419,121 and 19,398,699 shares issued at March 31, 2020 and December 31, 2019, respectively; and 17,986,427 and 18,001,261 shares outstanding at March 31, 2020 and December 31, 2019, respectively	194	194
Additional paid-in capital	145,457	144,485
Retained earnings	13,324	19,538
Accumulated other comprehensive loss	(5,247)	(2,767)
	153,728	161,450
Less: treasury stock at cost, common stock, 1,432,694 and 1,397,438 shares as of March 31, 2020 and December 31, 2019, respectively	(11,851)	(11,461)
Total stockholders' equity	**141,877**	**149,989**
Total liabilities and stockholders' equity	**$ 189,285**	**$ 199,391**

See accompanying Notes to Unaudited Consolidated Interim Financial Statements.

KVH INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except earnings per share amounts, unaudited)

	Three Months Ended March 31,	
	2020	**2019**
Sales:		
Product	$ 13,094	$ 13,215
Service	23,474	23,161
Net sales	36,568	36,376
Costs and expenses:		
Costs of product sales	9,636	8,284
Costs of service sales	15,195	15,373
Research and development	4,287	3,868
Sales, marketing and support	8,700	8,130
General and administrative	6,398	6,955
Total costs and expenses	44,216	42,610
Loss from operations	(7,648)	(6,234)
Interest income	313	175
Interest expense	4	385
Other income (expense), net	1,502	(97)
Loss from continuing operations before income tax expense (benefit)	(5,837)	(6,541)
Income tax expense (benefit)	377	(44)
Net loss from continuing operations	(6,214)	(6,497)
Income from discontinued operations, net of tax	—	243
Net loss	**$ (6,214)**	**$ (6,254)**
Net loss from continuing operations per common share		
Basic and diluted [(a)]	**$ (0.35)**	**$ (0.38)**
Net income from discontinued operations per common share		
Basic and diluted [(a)]	**$ 0.00**	**$ 0.01**
Net loss per common share		
Basic and diluted [(a)]	**$ (0.35)**	**$ (0.36)**
Weighted average number of common shares outstanding:		
Basic and diluted	**17,529**	**17,302**

(a) Earnings per share components for 2019 do not sum due to rounding.

See accompanying Notes to Unaudited Consolidated Interim Financial Statements.

KVH INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(in thousands, unaudited)

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Net loss	$ (6,214)	$ (6,254)
Other comprehensive (loss) income, net of tax:		
Foreign currency translation adjustment	(2,480)	1,080
Unrealized gain on derivative instruments, net	—	8
Other comprehensive (loss) income, net of tax[1]	(2,480)	1,088
Total comprehensive loss	$ (8,694)	$ (5,166)

(1) Tax impact was nominal for all periods.

See accompanying Notes to Unaudited Consolidated Interim Financial Statements.

KVH INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, unaudited)

	Common Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Treasury Stock		Total Stockholders' Equity
	Shares	Amount				Shares	Amount	
Balance at December 31, 2019	**19,399**	**$ 194**	**$ 144,485**	**$ 19,538**	**$ (2,767)**	**(1,397)**	**$ (11,461)**	**$ 149,989**
Net loss	—	—	—	(6,214)	—	—	—	(6,214)
Other comprehensive loss	—	—	—	—	(2,480)	—	—	(2,480)
Stock-based compensation	—	—	805	—	—	—	—	805
Issuance of common stock under employee stock purchase plan	20	—	156	—	—	—	—	156
Acquisition of treasury stock	—	—	—	—	—	(36)	(390)	(390)
Exercise of stock options and issuance of restricted stock awards, net of forfeitures	—	—	11	—	—	—	—	11
Balance at March 31, 2020	**19,419**	**$ 194**	**$ 145,457**	**$ 13,324**	**$ (5,247)**	**(1,433)**	**$ (11,851)**	**$ 141,877**

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Treasury Stock		Total Stockholders' Equity
	Shares	Amount				Shares	Amount	
Balance at December 31, 2018	**19,026**	**$ 190**	**$ 139,617**	**$ (15,397)**	**$ (14,731)**	**(1,282)**	**$ (10,164)**	**$ 99,515**
Net loss	—	—	—	(6,254)	—	—	—	(6,254)
Other comprehensive income	—	—	—	—	1,088	—	—	1,088
ASC 606 correction (FN 16)	—	—	—	1,680	—	—	—	1,680
Stock-based compensation	—	—	874	—	—	—	—	874
Issuance of common stock under employee stock purchase plan	23	—	218	—	—	—	—	218
Exercise of stock options and issuance of restricted stock awards, net of forfeitures	85	1	81	—	—	—	—	82
Balance at March 31, 2019	**19,134**	**$ 191**	**$ 140,790**	**$ (19,971)**	**$ (13,643)**	**(1,282)**	**$ (10,164)**	**$ 97,203**

See accompanying Notes to Unaudited Consolidated Interim Financial Statements.

KVH INDUSTRIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands, unaudited)

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Cash flows from operating activities:		
Net loss	$ (6,214)	$ (6,254)
Adjustments to reconcile net loss to net cash used in operating activities:		
Provision for doubtful accounts	238	(65)
Depreciation and amortization	2,650	3,527
Deferred income taxes	—	71
Loss on disposals of fixed assets	54	56
Compensation expense related to stock-based awards and employee stock purchase plan	805	874
Unrealized currency translation (gain) loss	(1,065)	1,082
Changes in operating assets and liabilities:		
Accounts receivable	3,577	944
Inventories	(2,094)	(3,117)
Prepaid expenses, other current assets and current contract assets	(243)	952
Other non-current assets and non-current contract assets	(47)	1,236
Accounts payable	(1,174)	2,627
Contract liabilities and long-term contract liabilities	317	(1,254)
Accrued compensation, product warranty and other	246	(1,738)
Other long-term liabilities	2	(15)
Net cash used in operating activities	**$ (2,948)**	**$ (1,074)**
Cash flows from investing activities:		
Capital expenditures	(3,277)	(3,027)
Cash paid for acquisition of intangible asset	(22)	(25)
Purchases of marketable securities	(79)	—
Maturities and sales of marketable securities	7,500	—
Net cash provided by (used in) investing activities	**$ 4,122**	**$ (3,052)**
Cash flows from financing activities:		
Repayments of long-term debt	—	(31)
Proceeds from stock options exercised and employee stock purchase plan	156	314
Repurchase of common stock	(390)	—
Payment of finance lease	(156)	(152)
Net cash (used in) provided by financing activities	**$ (390)**	**$ 131**
Effect of exchange rate changes on cash and cash equivalents	(607)	204
Net increase (decrease) in cash and cash equivalents	**177**	**(3,791)**
Cash and cash equivalents at beginning of period	**18,365**	**18,050**
Cash and cash equivalents at end of period	**$ 18,542**	**$ 14,259**
Supplemental disclosure of non-cash investing activities:		
Changes in accrued other and accounts payable related to property and equipment additions	**$ 423**	**$ 161**

See accompanying Notes to Unaudited Consolidated Interim Financial Statements.

(1) Description of Business

KVH Industries, Inc. (together with its subsidiaries, the Company or KVH) designs, develops, manufactures and markets mobile connectivity products and services for the marine and land markets, and inertial navigation products for both the commercial and defense markets. KVH's reporting segments are as follows:

- the mobile connectivity segment and
- the inertial navigation segment

KVH’s mobile connectivity products enable customers to receive voice and Internet services, and live digital television via satellite services in marine vessels, recreational vehicles, buses and automobiles. KVH sells and leases its mobile connectivity products through an extensive international network of dealers and distributors. KVH also sells and leases products directly to end users.

KVH’s mobile connectivity service sales represent primarily sales earned from satellite voice and Internet airtime services. KVH provides, for monthly fixed and usage fees, satellite connectivity services, including broadband Internet, data and VoIP services, to its TracPhone V-series customers. AgilePlans, a mini-VSAT Broadband service offering, is a monthly subscription model providing global connectivity to commercial maritime customers, including hardware, installation, broadband Internet, Voice over Internet Protocol (VoIP), entertainment and training content and global support for a monthly fee with no minimum commitment. KVH offers AgilePlans customers a variety of airtime data plans with varying data speeds and fixed data usage levels with overage charges per megabyte, which is similar to the plans that the Company offers to its other customers. The Company recognizes the monthly subscription fee as service revenue over the service delivery period. The Company retains ownership of the hardware that it provides to AgilePlans customers, who must return the hardware to KVH if they decide to terminate the service. Because KVH does not sell the hardware under AgilePlans, the Company does not recognize any product revenue when the hardware is deployed to an AgilePlans customer. KVH records the cost of the hardware used by AgilePlans customers as revenue-generating assets and depreciates the cost over an estimated useful life of five years. Since the Company is retaining ownership of the hardware, it does not accrue any warranty costs for AgilePlans hardware; however, any maintenance costs on the hardware are expensed in the period these costs are incurred.

Mobile connectivity service sales also include the distribution of commercially licensed entertainment, including news, sports, music, and movies to commercial and leisure customers in the maritime, hotel, and retail markets through KVH Media Group. KVH also earns monthly usage fees from third-party satellite connectivity services, including voice, data and Internet services, provided to its Inmarsat and Iridium customers who choose to activate their subscriptions with KVH. Mobile connectivity service sales also include engineering services provided under development contracts, sales from product repairs, and extended warranty sales.

On May 13, 2019, the Company and its wholly owned subsidiary, KVH Media Group Limited (KMG), entered into a Share Purchase Agreement (the Purchase Agreement) with Pelican Holdco Limited, an affiliate of Oakley Capital IV Master SCSp, a UK company (together, Oakley), pursuant to which KMG sold all of the issued share capital of Super Dragon Limited and Videotel Marine Asia Limited (together referred to as Videotel) to Oakley for $89,387 in cash, on a cash-free, debt-free basis, subject to a working capital adjustment. Videotel comprised the Company’s maritime training business, which offered video, animation, eLearning computer-based training and interactive distance learning services to the maritime industry. The sale was completed immediately upon execution of definitive agreements. The Company received payment of the initial purchase price pursuant to a loan agreement (the Bridge Loan) on June 21, 2019. The Bridge Loan was secured by a charge (a type of foreign security interest) over the shares of Super Dragon Limited and Videotel Marine Asia Limited and was further backed by an equity commitment letter from Oakley Capital IV Master SCSp. The Bridge Loan’s interest rate was 5% per year during the period from closing until and including the 15th business day after the closing and increased to 12% per year during the period after the 15th business day until the maturity date. In December 2019, the Company finalized the working capital adjustment, which reduced the proceeds from the sale of Videotel to $88,447. The Company does not have any continuing involvement in these operations other than to provide short-term transition services, which are being recorded in other income in continuing operations. The Company determined that the sale met the requirements for reporting as discontinued operations in accordance with Accounting Standards Codification (ASC) 205-20. Please see Note 20 for the discontinued operations disclosures.

KVH's inertial navigation products offer precision fiber optic gyro (FOG)-based systems that enable platform and optical stabilization, navigation, pointing and guidance. KVH's inertial navigation products also include tactical navigation systems that provide uninterrupted access to navigation and pointing information in a variety of military vehicles, including tactical trucks and light armored vehicles. KVH's inertial navigation products are sold directly to U.S. and foreign governments and government contractors, as well as through an international network of authorized independent sales representatives. In addition, KVH's inertial navigation technology is used in numerous commercial products, such as navigation and positioning systems for various applications including precision mapping, dynamic surveying, autonomous vehicles, train location control and track geometry measurement systems, industrial robotics and optical stabilization.

KVH's inertial navigation service sales include product repairs, engineering services provided under development contracts and extended warranty sales.

(2) Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements of KVH Industries, Inc. and its wholly owned subsidiaries have been prepared in accordance with accounting principles generally accepted in the United States of America. The Company has evaluated all subsequent events through the date of this filing. All significant intercompany accounts and transactions have been eliminated in consolidation.

The 2019 consolidated interim financial statements reflect the sale of Videotel as discontinued operations. See Notes 1 and 20 for further information on the sale of Videotel.

The consolidated interim financial statements have not been audited by the Company's independent registered public accounting firm and include all adjustments (consisting of only normal recurring adjustments) which are, in the opinion of management, necessary for a fair presentation of the financial condition, results of operations, and cash flows for the periods presented. These consolidated interim financial statements do not include all disclosures associated with annual financial statements and accordingly should be read in conjunction with the Company's consolidated financial statements and related notes included in the Company's annual report on Form 10-K for the year ended December 31, 2019 filed on February 28, 2020 with the Securities and Exchange Commission. The results for the three months ended March 31, 2020 are not necessarily indicative of operating results for the remainder of the year.

Significant Estimates and Assumptions and Other Significant Non-Recurring Transactions

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of sales and expenses during the reporting periods. As described in the Company's annual report on Form 10-K, the most significant estimates and assumptions by management affect the Company's revenue recognition, valuation of accounts receivable, valuation of inventory, expected future cash flows including growth rates, discount rates, terminal values and other assumptions and estimates used to evaluate the recoverability of long-lived assets and goodwill, estimated fair values of long-lived assets, including goodwill, amortization methods and periods, certain accrued expenses and other related charges, stock-based compensation, contingent liabilities, forfeitures and key valuation assumptions for its share-based awards, estimated fulfillment costs for warranty obligations, tax reserves and recoverability of the Company's net deferred tax assets and related valuation allowance, and the valuation of right-of-use assets and lease liabilities. The Company has reviewed these estimates and determined that these remain the most significant estimates for the three months ended March 31, 2020.

Although the Company regularly assesses these estimates, actual results could differ materially from these estimates. Changes in estimates are recorded in the period in which they become known. The Company bases its estimates on historical experience and various other assumptions that it believes to be reasonable under the circumstances.

During the second quarter of 2019, the Company sold Videotel. Please see Notes 1 and 20 for further discussion.

During the third quarter of 2019, the Company identified an out-of-period immaterial error related to the implementation and application of ASC 606 with respect to the recognition of revenue associated with sales-type leases, which impacted our March 31, 2019 consolidated interim financial statements. Please see Note 16 for further discussion.

(3) Accounting Standards Issued and Not Yet Adopted

ASC Update No. 2016-13, ASC Update No. 2018-19, ASC Update No. 2019-04, ASC Update No. 2019-05, ASC Update No. 2019-10, ASC Update No. 2019-11 and ASC Update No. 2020-02.

In June 2016, the FASB issued ASC Update No. 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. The update is effective for fiscal years beginning after December 15, 2019. Early adoption is permitted for fiscal years beginning after December 15, 2018. The purpose of Update No. 2016-13 is to replace the current incurred loss impairment methodology for financial assets measured at amortized cost with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information, including forecasted information, to develop credit loss estimates.

In November 2018, the FASB issued ASC Update No. 2018-19, *Codification Improvements: Financial Instruments – Credit Losses (Topic 326)*. This update introduced an expected credit loss methodology for the impairment of financial assets measured at amortized cost basis. The amendment also clarifies that receivables arising from operating leases are not within the scope of Subtopic 326-20. Instead, impairment of receivables arising from operating leases should be accounted for in accordance with Topic 842, Leases.

In May 2019, the FASB issued ASC Update No. 2019-04, *Codification Improvements: Financial Instruments – Credit Losses (Topic 326), Derivatives and Hedging (Topic 815) and Financial Instruments (Topic 825).* This update introduced clarifications of the Board's intent with respect to accrued interest, the transfer between classifications or categories for loans and debt securities, recoveries, reinsurance recoverables, projects of interest rate environments for variable-rate financial instruments, costs to sell when foreclosure is probable, consideration of expected prepayments when determining the effective interest rate, vintage disclosures, and extension and renewal options.

In May 2019, the FASB issued ASC Update No. 2019-05, *Financial Instruments – Credit Losses* (*Topic 326*): *Targeted Transition Relief*. The amendments in the update ease the transition for entities adopting ASC Update 2016-13 and increase the comparability of financial statement information. With the exception of held-to-maturity debt securities, the amendments allow entities to irrevocably elect to apply the fair value option to financial instruments that were previously recorded at amortized cost basis within the scope of Subtopic 326-20, *Financial Instruments - Credit Losses - Measured at Amortized Cost*.

In November 2019, the FASB issued ASC Update No. 2019-10, *Financial Instruments – Credit Losses (Topic 326), Derivatives and Hedging (Topic 815), and Leases (Topic 842): Effective Dates.* The amendments in this update change some effective dates for certain new accounting standards for certain types of entities. The update amends ASC 326 and ASC 350's effective date for all SEC filers other than smaller reporting companies to be the fiscal years beginning after December 15, 2019, and interim periods therein. The effective date for all other entities, including smaller reporting companies, will be the fiscal years beginning after December 15, 2022, and interim periods therein. The update does not change the effective date of ASC 815 and ASC 842 for public business entities (PBEs), but amends the effective date for all other entities to be the fiscal years beginning after December 15, 2020, and interim periods within fiscal years beginning after December 15, 2021.

In November 2019, the FASB issued ASC Update No. 2019-11, *Codification Improvements: Financial Instruments – Credit Losses* (*Topic 326*)*.* The update is effective for entities that have adopted ASU 2016-13, and the amendments in ASU 2019-11 are effective for fiscal years beginning after December 15, 2019, and interim periods therein. Early adoption is permitted in any interim period after issuance of this update as long as an entity has adopted the amendments in Update 2016-13. The purpose of Update No. 2019-11 is to clarify the scope of the recovery guidance to purchased financial assets with credit deterioration.

In February 2020, the FASB issued ASC Update No. 2020-02, *Financial Instruments – Credit Losses (Topic 326) and Leases (Topic 842)*. The purpose of Update No. 2020-02 is to amend SEC paragraphs in the ASC that describe SEC guidance or SEC staff views that the Financial Accounting Standards Board (FASB) includes as a convenience to Codification users.

As a current smaller reporting entity, the effective date will be the fiscal years beginning after December 15, 2022. The adoption of Update Nos. 2016-13, 2018-19, 2019-04, 2019-05, 2019-10, 2019-11 and 2020-02 are not expected to have a material impact on the Company's financial position or results of operations.

ASC Update No. 2019-12

In December 2019, the FASB issued ASC Update No. 2019-12, *Income Taxes (Topic 740)*. The update is effective for public business entities for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. Early adoption is permitted, including adoption in any interim period, for public business entities for periods for which financial statements have not yet been issued. The purpose of Update No. 2019-12 is to remove certain exceptions for recognizing deferred taxes for investments and simplify the accounting for income taxes in certain areas, including recognizing deferred taxes for tax goodwill and allocating taxes to members of a consolidated group. It amends the requirements relating to the accounting for "hybrid" tax regimes. Update No. 2019-12 is not expected to have a material impact on the Company's financial position or results of operations.

There are no other recent accounting pronouncements issued by the FASB that are expected to have a material impact on the Company's financial statements.

(4) Marketable Securities

Marketable securities as of March 31, 2020 and December 31, 2019 consisted of the following:

March 31, 2020	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Money market mutual funds	$ 22,487	$ —	$ —	$ 22,487
Total marketable securities designated as available-for-sale	$ 22,487	$ —	$ —	$ 22,487

December 31, 2019	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Money market mutual funds	$ 29,907	$ —	$ —	$ 29,907
Total marketable securities designated as available-for-sale	$ 29,907	$ —	$ —	$ 29,907

Interest income from marketable securities was $113 and less than $1 during the three months ended March 31, 2020 and 2019, respectively.

(5) Stockholder's Equity

(a) Stock Equity and Incentive Plan

The Company recognizes stock-based compensation in accordance with the provisions of ASC Topic 718, *Compensation-Stock Compensation*. Stock-based compensation expense, excluding compensation charges related to our employee stock purchase plan, or the ESPP, was $789 and $860 for the three months ended March 31, 2020 and 2019, respectively. As of March 31, 2020, there was $2,724 of total unrecognized compensation expense related to stock options, which is expected to be recognized over a weighted-average period of 2.41 years. As of March 31, 2020, there was $2,869 of total unrecognized compensation expense related to restricted stock awards, which is expected to be recognized over a weighted-average period of 2.29 years.

Stock Options

During the three months ended March 31, 2020, no stock options were exercised for common stock, and no shares of common stock were delivered to the Company as payment for the exercise price or related minimum tax withholding obligations for the exercise of such options. During the three months ended March 31, 2020, no stock options were granted and 95 stock options expired, were canceled or were forfeited. The Company estimates the fair value of each option grant on the date of grant using the Black-Scholes option-pricing model.

As of March 31, 2020, there were 1,529 options outstanding with a weighted average exercise price of $9.68 per share and 370 options exercisable with a weighted average exercise price of $9.60 per share.

Restricted Stock

During the three months ended March 31, 2020, no shares of restricted stock were granted and no shares of restricted stock were forfeited. Additionally, during the three months ended March 31, 2020, 102 shares of restricted stock vested, none of which were surrendered to the Company to satisfy minimum tax withholding obligations for the vesting of such shares.

As of March 31, 2020, there were 397 shares of restricted stock outstanding that were subject to service-based vesting conditions.

As of March 31, 2020, the Company had no unvested outstanding options and no shares of restricted stock that were subject to performance-based or market-based vesting conditions.

(b) Employee Stock Purchase Plan

The Company's Amended and Restated 1996 Employee Stock Purchase Plan (ESPP) affords eligible employees the right to purchase common stock, via payroll deductions, through various offering periods at a purchase price equal to 85% of the fair market value of the common stock on the first or last day of the offering period, whichever is lower. During the three months ended March 31, 2020 and 2019, 20 and 23 shares were issued under the ESPP plan, respectively. The Company recorded compensation charges of $16 and $14 for the three months ended March 31, 2020 and 2019, respectively, related to the ESPP.

(c) Stock-Based Compensation Expense

The following table presents stock-based compensation expense, including under the ESPP, in the Company's consolidated statements of operations for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,	
	2020	**2019**
Cost of product sales	$ 40	$ 41
Cost of service sales	—	—
Research and development	153	172
Sales, marketing and support	154	182
General and administrative	458	479
	$ 805	**$ 874**

(d) Accumulated Other Comprehensive Loss (AOCI)

Comprehensive income (loss) includes net income (loss), unrealized gains and losses from foreign currency translation, unrealized gains and losses from available for sale marketable securities and changes in fair value related to interest rate swap derivative instruments, net of tax attributes. The components of the Company's comprehensive income (loss) and the effect on earnings for the periods presented are detailed in the accompanying consolidated statements of comprehensive income (loss).

	Foreign Currency Translation	Total Accumulated Other Comprehensive Loss
Balance, December 31, 2019	**$ (2,767)**	**$ (2,767)**
Other comprehensive loss	(2,480)	(2,480)
Net other comprehensive loss	(2,480)	(2,480)
Balance, March 31, 2020	**$ (5,247)**	**$ (5,247)**

	Foreign Currency Translation	Interest Rate Swaps	Total Accumulated Other Comprehensive Loss
Balance, December 31, 2018	**$ (14,720)**	**$ (11)**	**$ (14,731)**
Other comprehensive income before reclassifications	1,080	—	1,080
Amounts reclassified from AOCI	—	8	8
Net other comprehensive income	1,080	8	1,088
Balance, March 31, 2019	**$ (13,640)**	**$ (3)**	**$ (13,643)**

For additional information, see Note 4, "Marketable Securities," and Note 17, "Derivative Instruments and Hedging Activities."

(6) Net Loss per Common Share

Basic net loss per share is calculated based on the weighted average number of common shares outstanding during the period. Diluted net loss per share incorporates the dilutive effect of common stock equivalent options, warrants and other convertible securities, if any, as determined with the treasury stock accounting method. For the three months ended March 31, 2020 and 2019, since there was a net loss from continuing operations, the Company excluded 1,341 and 1,042, respectively, in outstanding stock options and non-vested restricted shares from its diluted loss per share calculation, as inclusion of these securities would have reduced the net loss per share.

A reconciliation of the basic and diluted weighted average common shares outstanding is as follows:

	Three Months Ended March 31,	
	2020	2019
Weighted average common shares outstanding—basic	17,529	17,302
Dilutive common shares issuable in connection with stock plans	—	—
Weighted average common shares outstanding—diluted	17,529	17,302

(7) Inventories

Inventories, net are stated at the lower of cost and net realizable value using the first-in first-out costing method. Inventories as of March 31, 2020 and December 31, 2019 include the costs of material, labor, and factory overhead. Components of inventories consist of the following:

	March 31, 2020	December 31, 2019
Raw materials	$ 14,203	$ 12,755
Work in process	2,793	3,117
Finished goods	8,559	7,593
	$ 25,555	$ 23,465

(8) Property and Equipment

Property and equipment, net, as of March 31, 2020 and December 31, 2019 consist of the following:

	March 31, 2020	December 31, 2019
Land	$ 3,828	$ 3,828
Building and improvements	24,185	24,172
Leasehold improvements	499	501
Machinery and equipment	18,381	18,022
Revenue-generating assets	49,810	47,010
Office and computer equipment	14,259	14,054
Motor vehicles	31	31
	110,993	107,618
Less accumulated depreciation	(56,237)	(54,034)
	$ 54,756	$ 53,584

Depreciation expense was $2,402 and $2,093 for the three months ended March 31, 2020 and 2019, respectively.

Certain revenue-generating hardware assets are utilized by the Company in the delivery of the Company's airtime services, media, and other content.

(9) Product Warranty

The Company's products carry standard limited warranties that range from one to two years and vary by product. The warranty period begins on the date of retail purchase or lease by the original purchaser. The Company accrues estimated product warranty costs at the time of sale and any additional amounts are recorded when such costs are probable and can be reasonably estimated. Factors that affect the Company's warranty liability include the number of units sold or leased, historical and anticipated rates of warranty repairs and the cost per repair. Warranty and related costs are reflected within sales, marketing and support in the accompanying consolidated statements of operations. As of March 31, 2020 and December 31, 2019, the Company had accrued product warranty costs of $2,212 and $2,194, respectively.

The following table summarizes product warranty activity during 2020 and 2019:

	Three Months Ended March 31,	
	2020	2019
Beginning balance	$ 2,194	$ 1,916
Charges to expense	470	453
Costs incurred	(452)	(348)
Ending balance	$ 2,212	$ 2,021

(10) Debt

Term Note and Line of Credit

Effective October 30, 2018, the Company entered into an amended and restated three-year senior credit facility agreement (the 2018 Credit Agreement) with Bank of America, N.A., as Administrative Agent, and the lenders named from time to time as parties thereto (the 2018 Lenders), for an aggregate amount of up to $42,500, including a term loan (2018 Term Loan) of $22,500 and a reducing revolving credit facility (the 2018 Revolver) of up to $20,000 initially and reducing to $15,000 on December 31, 2019, each to be used for general corporate purposes, including the refinancing of indebtedness under the Company's then-outstanding senior credit facility agreement.

On May 13, 2019, the Company entered into a consent with Bank of America, N.A., as Administrative Agent, authorizing the Purchase Agreement and Bridge Loan, as discussed in Note 1. On June 27, 2019, the Company used the proceeds of the sale of Videotel to repay in full the then-outstanding balance of $21,375 under the 2018 Term Loan and to repay $13,000 of the then-outstanding balance under the 2018 Revolver. Under the terms of the consent, the 2018 Revolver will remain at $20,000 through the term of the Credit Agreement. On October 30, 2021, the entire principal balance of any outstanding loans under the 2018 Revolver will be due and payable, together with all accrued and unpaid interest, fees and any other amounts due and payable under the 2018 Credit Agreement. As of March 31, 2020, no amounts were outstanding under the 2018 Revolver.

Borrowings of up to $20,000 under the 2018 Revolver are subject to the satisfaction of various conditions precedent at the time of each borrowing, including the continued accuracy of the Company's representations and warranties and the absence of any default under the 2018 Credit Agreement. As of March 31, 2020, the Company is not able to draw on these funds due to covenant restrictions.

The 2018 Credit Agreement contains two financial covenants, a maximum Consolidated Leverage Ratio and a minimum Consolidated Fixed Charge Coverage Ratio, each as defined in the 2018 Credit Agreement. The Consolidated Leverage Ratio may not be greater than 2.50:1.00 on December 31, 2019 and declines to 2.00:1.00 on December 31, 2020. The Consolidated Fixed Charge Coverage Ratio may not be less than 1.25:1.00.

The 2018 Credit Agreement imposes certain other affirmative and negative covenants, including without limitation covenants with respect to the payment of taxes and other obligations, compliance with laws, performance of material contracts, creation of liens, incurrence of indebtedness, investments, dispositions, fundamental changes, restricted payments, changes in the nature of the Company's business, transactions with affiliates, corporate and accounting changes, and sale and leaseback arrangements.

Mortgage Loan

The Company previously had a mortgage loan (Mortgage Loan) related to its headquarters facility in Middletown, Rhode Island. On April 1, 2019, on the Mortgage Loan's original termination date, the Company repaid in full the outstanding balance of $2,551. As discussed in Note 17 to the consolidated interim financial statements, in April 2010 the Company entered into two interest rate swap agreements that were intended to hedge its mortgage interest obligations over the term of the Mortgage Loan by fixing the interest rates specified in the Mortgage Loan to 5.91% for half of the principal amount outstanding as of April 1, 2010 and 6.07% for the remaining half. Both interest rate swap agreements were also settled upon repayment of the Mortgage Loan.

(11) Segment Reporting

The financial results of each segment are based on revenues from external customers, cost of revenue and operating expenses that are directly attributable to the segment and an allocation of costs from shared functions. These shared functions include, but are not limited to, facilities, human resources, information technology, and engineering. Allocations are made based on management’s judgment of the most relevant factors, such as head count, number of customer sites, or other operational data that contribute to the shared costs. Certain corporate-level costs have not been allocated as they are not directly attributable to either segment. These costs primarily consist of broad corporate functions, including executive, legal, finance, and costs associated with corporate actions. Segment-level asset information has not been provided as such information is not reviewed by the chief operating decision-maker for purposes of assessing segment performance and allocating resources. There are no inter-segment sales or transactions. As discussed in Note 1, the Company’s Videotel business, which had previously been included in the mobile connectivity segment, has been classified as discontinued operations and therefore excluded from the segment information below.

The Company's performance is impacted by the levels of activity in the marine and land mobile markets and defense sectors, among others. Performance in any particular period could be impacted by the timing of sales to certain large customers.

The mobile connectivity segment primarily manufactures and distributes a comprehensive family of mobile satellite antenna products and services that provide access to television, the Internet and voice services while on the move. Product sales within the mobile connectivity segment accounted for 18% and 20% of the Company's consolidated net sales for the three months ended March 31, 2020 and 2019, respectively. Sales of mini-VSAT Broadband airtime service accounted for 53% and 50% of the Company's consolidated net sales for the three months ended March 31, 2020 and 2019, respectively.

The inertial navigation segment manufactures and distributes a portfolio of digital compass and fiber optic gyro (FOG)-based systems that address the rigorous requirements of military and commercial customers and provide reliable, easy-to-use and continuously available navigation and pointing data. The principal product categories in this segment include the FOG-based inertial measurement units (IMUs) for precision guidance, FOGs for tactical navigation as well as pointing and stabilization systems, and digital compasses that provide accurate heading information for demanding applications, security, automation and access control equipment and systems. Sales of FOG-based guidance and navigation systems within the inertial navigation segment accounted for 14% and 13% of the Company's consolidated net sales for the three months ended March 31, 2020 and 2019, respectively.

No other single product class accounts for 10% or more of the Company's consolidated net sales.

The Company operates in a number of major geographic areas across the globe. The Company generates international net sales, based upon customer location, primarily from customers located in Canada, Europe, Africa, Asia/Pacific, the Middle East, and India. International revenues represented 58% of the Company's consolidated net sales for each of the three months ended March 31, 2020 and 2019. Sales to Singapore represented 11% of the Company's consolidated net sales for the three months ended March 31, 2020. No other individual foreign country represented 10% or more of the Company's consolidated net sales for the three months ended March 31, 2020. No individual foreign country represented 10% or more of the Company's consolidated net sales for the three months ended March 31, 2019.

As of March 31, 2020 and December 31, 2019, the long-lived tangible assets related to the Company’s international subsidiaries were less than 10% of the Company’s long-lived tangible assets and were deemed not material.

Net sales and operating (loss) income for the Company's reporting segments and the Company's loss before income tax expense for the three months ended March 31, 2020 and 2019 were as follows:

	Three Months Ended March 31,	
	2020	2019
Net sales:		
Mobile connectivity	$ 28,896	$ 28,914
Inertial navigation	7,672	7,462
Consolidated net sales	$ 36,568	$ 36,376
Operating (loss) income:		
Mobile connectivity	$ (2,299)	$ (1,444)
Inertial navigation	(821)	443
Subtotal	(3,120)	(1,001)
Unallocated, net	(4,528)	(5,233)
Loss from operations	(7,648)	(6,234)
Net interest and other income (expense)	1,811	(307)
Loss from continuing operations before income tax expense (benefit)	$ (5,837)	$ (6,541)

Depreciation expense and amortization expense for the Company's reporting segments for the three months ended March 31, 2020 and 2019 were as follows:

	Three Months Ended March 31,	
	2020	2019
Depreciation expense:		
Mobile connectivity	$ 1,958	$ 1,670
Inertial navigation	293	286
Unallocated	151	137
Total consolidated depreciation expense	$ 2,402	$ 2,093
Amortization expense:		
Mobile connectivity	$ 248	$ 248
Inertial navigation	—	—
Unallocated	—	—
Total consolidated amortization expense	$ 248	$ 248

(12) Legal Matters

From time to time, the Company is involved in litigation incidental to the conduct of its business. In the ordinary course of business, the Company is a party to inquiries, legal proceedings and claims including, from time to time, disagreements with vendors and customers. The Company is not a party to any lawsuit or proceeding that, in management's opinion, is likely to materially harm the Company's business, results of operations, financial condition or cash flows.

(13) Share Buyback Program

On November 26, 2008, the Company's Board of Directors authorized a program to repurchase up to 1,000 shares of the Company's common stock. The program was superseded on October 4, 2019. On October 4, 2019, the Company's Board of Directors authorized a new share repurchase program pursuant to which the Company may purchase up to 1,000 shares of the Company's common stock. The repurchase program is expected to be funded using the Company's existing cash, cash equivalents, marketable securities and future cash flows. Under the repurchase program, the Company, at management's discretion, may repurchase shares on the open market from time to time, in privately negotiated transactions or block transactions, or through an accelerated repurchase agreement. The timing of such repurchases depends on availability of shares, price, market conditions, alternative uses of capital, and applicable regulatory requirements. The program may be modified, suspended or terminated at any time without prior notice. The repurchase program has a duration of one year. Under the Company's 2018 Credit Agreement, the Company may not repurchase more than $5,000 of shares before October 31, 2021 without appropriate consent.

During the three months ended March 31, 2020, the Company repurchased 36 shares of common stock in open market transactions at a cost of approximately $390. The total amount the Company repurchased on the open market since the inception of the October 4, 2019 repurchase program was 151 shares of common stock for an approximate cost of $1,690. Except as noted above, there were no other repurchase programs outstanding.

(14) Fair Value Measurements

ASC Topic 820, *Fair Value Measurements and Disclosures* (ASC 820), provides a framework for measuring fair value and requires expanded disclosures regarding fair value measurements. ASC 820 defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (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. ASC 820 also establishes a fair value hierarchy, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. ASC 820 describes three levels of inputs that may be used to measure fair value:

Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities. The Company's Level 1 assets are investments in money market mutual funds.

Level 2: Quoted prices for similar assets or liabilities in active markets; or observable prices that are based on observable market data, based on directly or indirectly market-corroborated inputs. The Company has no Level 2 assets or liabilities.

Level 3: Unobservable inputs that are supported by little or no market activity and are developed based on the best information available given the circumstances. The Company has no Level 3 assets.

Assets and liabilities measured at fair value are based on the valuation techniques identified in the table below.

The following tables present financial assets and liabilities at March 31, 2020 and December 31, 2019 for which the Company measures fair value on a recurring basis, by level, within the fair value hierarchy:

March 31, 2020	Total	Level 1	Level 2	Level 3	Valuation Technique
Assets					
Money market mutual funds	$ 22,487	$ 22,487	$ —	$ —	(a)

December 31, 2019	Total	Level 1	Level 2	Level 3	Valuation Technique
Assets					
Money market mutual funds	$ 29,907	$ 29,907	$ —	$ —	(a)

(a) Market approach—prices and other relevant information generated by market transactions involving identical or comparable assets.

Certain financial instruments are carried at cost on the consolidated balance sheets, which approximates fair value due to their short-term, highly liquid nature. These instruments include cash and cash equivalents, accounts receivable, accounts payable, and accrued expenses. The carrying amount of the Company's operating and financing lease liabilities approximates fair value based on currently available quoted rates of similarly structured borrowings.

Assets Measured and Recorded at Fair Value on a Nonrecurring Basis

The Company's non-financial assets, such as goodwill, intangible assets, and other long-lived assets resulting from business combinations, are measured at fair value using income approach valuation methodologies at the date of acquisition and subsequently re-measured if an impairment exists. There were no impairments of the Company’s non-financial assets noted as of March 31, 2020. The Company does not have any liabilities that are recorded at fair value on a non-recurring basis.

(15) Goodwill and Intangible Assets

Goodwill

The following table sets forth the changes in the carrying amount of goodwill for the three months ended March 31, 2020:

		Amounts
Balance at December 31, 2019	$	15,408
Foreign currency translation adjustment		(678)
Balance at March 31, 2020	$	14,730

Intangible Assets

The changes in the carrying amount of intangible assets during the three months ended March 31, 2020 are as follows:

		Amounts
Balance at December 31, 2019	$	4,943
Amortization expense		(248)
Intangible assets acquired in asset acquisition		22
Foreign currency translation adjustment		(285)
Balance at March 31, 2020	$	4,432

Intangible assets arose from an acquisition made prior to 2013 and the acquisition of KVH Media Group (acquired as Headland Media Limited) in May 2013. Intangibles arising from the acquisition made prior to 2013 were amortized on a straight-line basis over an estimated useful life of 7 years. Intangibles arising from the acquisition of KVH Media Group are being amortized on a straight-line basis over the estimated useful life of: (i) 10 years for acquired subscriber relationships and (ii) 15 years for distribution rights. The intangibles arising from the KVH Media Group acquisition were recorded in pounds sterling and fluctuations in exchange rates could cause these amounts to increase or decrease from time to time.

In January 2017, the Company completed the acquisition of certain subscriber relationships from a third party. This acquisition did not meet the definition of a business under ASC 2017-01, *Business Combinations (Topic 805)-Clarifying the Definition of a Business*, which the Company adopted on October 1, 2016. The Company ascribed $100 of the initial purchase price to the acquired subscriber relationships definite-lived intangible assets with an initial estimated useful life of 10 years. Under the asset purchase agreement, the purchase price includes a component of contingent consideration under which the Company is required to pay a percentage of recurring revenues received from the acquired subscriber relationships through 2026 up to a maximum annual payment of $114. As of March 31, 2020, the carrying value of the intangible assets acquired in the asset acquisition was $293. As the acquisition did not represent a business combination, the contingent consideration arrangement is recognized only when the contingency is resolved and the consideration is paid or becomes payable. The amounts payable under the contingent consideration arrangement, if any, will be included in the measurement of the cost of the acquired subscriber relationships. During the three months ended March 31, 2020, $22 additional consideration was earned under the contingent consideration arrangement.

Acquired intangible assets are subject to amortization. The following table summarizes acquired intangible assets at March 31, 2020 and December 31, 2019, respectively:

	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value
March 31, 2020			
Subscriber relationships	$ 7,739	$ 5,411	$ 2,328
Distribution rights	4,171	2,067	2,104
Internally developed software	446	446	—
Proprietary content	153	153	—
Intellectual property	2,284	2,284	—
	$ 14,793	$ 10,361	$ 4,432
December 31, 2019			
Subscriber relationships	$ 7,860	$ 5,231	$ 2,629
Distribution rights	4,313	1,999	2,314
Internally developed software	446	446	—
Proprietary content	153	153	—
Intellectual property	2,284	2,284	—
	$ 15,056	$ 10,113	$ 4,943

Amortization expense related to intangible assets was $248 for the three months ended March 31, 2020 and 2019 and was categorized as general and administrative expense.

As of March 31, 2020, the total weighted average remaining useful lives of the definite-lived intangible assets was 4.3 years and the weighted average remaining useful lives by the definite-lived intangible asset category are as follows:

Intangible Asset	Weighted Average Remaining Useful Life in Years
Subscriber relationships	3.2
Distribution rights	8.1

Estimated future amortization expense remaining at March 31, 2020 for intangible assets acquired was as follows:

Years ending December 31,	Amortization Expense
Remainder of 2020	720
2021	959
2022	959
2023	534
2024	300
Thereafter	960
Total future amortization expense	$ 4,432

For definite lived intangible assets, the Company assesses the carrying value of these assets whenever events or circumstances indicate that the carrying value may not be recoverable. Recoverability of assets to be held and used is measured by comparing the carrying amount of an asset, or asset group, to the future undiscounted cash flows expected to be generated by the asset, or asset group. Like most companies, the COVID-19 global pandemic has impacted many areas of our operations and the Company is monitoring the impact of this global crisis carefully. The operations of our KVH Media Group have been particularly impacted due in part to the global reduction in travel resulting from the pandemic. Consequently, the Company has reviewed, and will continue to review, the forecasted revenues and cash flows of our content business for possible indications that the goodwill or other intangible assets associated with this component of our business might be impaired. At this point, our review indicates that no impairment to the carrying value of these assets has occurred. However, it is uncertain how long the global pandemic will continue to disrupt global businesses, particularly travel, and therefore it is possible that the value of these assets may become impaired in the future as a result of the COVID-19 pandemic. As of March 31, 2020, the carrying value of goodwill and other intangible assets associated with the KVH Media Group was $10,329 and $4,432, respectively.

(16) Revenue from Contracts with Customers (ASC 606)

The adoption of ASC 606 represents a change in accounting principle that was intended to more closely align revenue recognition with the delivery of the Company's products and services and provide enhanced disclosures. In accordance with ASC 606, revenue is recognized when a customer obtains control of promised products and services. The amount of revenue recognized reflects the consideration which the Company expects to be entitled to receive in exchange for these products and services.

During the three months ended September 30, 2019, the Company identified an out-of-period immaterial error related to the implementation and application of ASC 606 with respect to the recognition of revenue associated with sales-type leases. During the implementation of ASC 606 effective January 1, 2018, the Company treated the leased products and services for these contracts as single performance obligations as if they were not distinct in the context of the contract; however, the leased product portion should have continued to have been accounted for under ASC 840 (now ASC 842). In general, the error was to defer recognition of product revenue and associated expenses for sales-type leases rather than to recognize those items upon shipment. The following table reflects these financial statement line items for the three months ended March 31, 2019, as reported and as adjusted (in thousands):

	Three Months Ended March 31, 2019	
	As reported	**As adjusted**
Product sales	$ 12,874	$ 13,215
Cost of product sales	7,853	8,284
Net loss	(6,179)	(6,254)

The Company has evaluated this error and does not believe the amounts are material for the three months ended March 31, 2019.

Disaggregation of Revenue

The following table summarizes net sales from contracts with customers for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,	
	2020	**2019**
Mobile connectivity product, transferred at point in time	$ 5,986	$ 6,922
Mobile connectivity product, transferred over time	606	481
Mobile connectivity service	22,304	21,511
Inertial navigation product	6,502	5,812
Inertial navigation service	1,170	1,650
Total net sales	$ 36,568	$ 36,376

Revenue recognized during the three months ended March 31, 2020 and 2019 from amounts included in contract liabilities at the beginning of the period was $606 and $473, respectively.

For mobile connectivity product sales, the delivery of the Company's performance obligations, and associated revenue, are generally transferred to the customer at a point in time, with the exception of certain mini-VSAT contracts which are transferred to customers over time. For mobile connectivity service sales, the delivery of the Company's performance obligations and associated revenue are transferred to the customer over time. For inertial navigation product sales, the delivery of the Company's performance obligations, and associated revenue, are generally transferred to the customer at a point in time. For inertial navigation service sales, the Company's performance obligations, and associated revenue, are generally transferred to customers over time.

Business and Credit Concentrations

Concentrations of risk with respect to trade accounts receivable are generally limited due to the large number of customers and their dispersion across several geographic areas. Although the Company does not foresee that credit risk associated with these receivables will deviate from historical experience, repayment is dependent upon the financial stability of those individual customers. The Company establishes allowances for potential bad debts and evaluates, on a monthly basis, the adequacy of those reserves based upon historical experience and its expectations for future collectability concerns. The Company performs ongoing credit evaluations of the financial condition of its customers and generally does not require collateral.

No single customer accounted for 10% or more of consolidated net sales for the first quarter of 2020 or 2019 or accounts receivable at March 31, 2020 or December 31, 2019.

Certain components from third parties used in the Company's products are procured from single sources of supply. The failure of a supplier, including a subcontractor, to deliver on schedule could delay or interrupt the Company's delivery of products and thereby materially adversely affect the Company's revenues and operating results.

(17) Derivative Instruments and Hedging Activities

Effective April 1, 2010, in order to reduce the volatility of cash outflows that arise from changes in interest rates, the Company entered into two interest rate swap agreements. These interest rate swap agreements were intended to hedge the Company’s mortgage loan related to its headquarters facility in Middletown, Rhode Island by fixing the interest rates specified in the mortgage loan to 5.9% for half of the principal amount outstanding and 6.1% for the remaining half of the principal amount outstanding as of April 1, 2010 until the mortgage loan expired on April 1, 2019. The Company does not use derivatives for speculative purposes. For a derivative that is designated as a cash flow hedge, changes in the fair value of the derivative are recognized in accumulated other comprehensive (loss) income (AOCI) to the extent the derivative is effective at offsetting the changes in the cash flows being hedged until the hedged item affects earnings. As the Company made the required principal and interest payments under the mortgage loan and the related interest rate swaps were settled, the Company reclassified the amounts recorded in AOCI related to the changes in the fair value of the settled interest rate swaps to earnings. To the extent there was any hedge ineffectiveness, changes in fair value relating to the ineffective portion were immediately recognized in earnings in other income (expense) in the consolidated statements of operations. The interest rate swap was recorded within accrued other liabilities on the balance sheet. The critical terms of the interest rate swaps were designed to mirror the terms of the Company’s mortgage loans. The Company designated these derivatives as cash flow hedges of the variability of the LIBOR-based interest payments on principal over a nine-year period, which ended on April 1, 2019. On April 1, 2019, the two interest rate swaps matured and the Company made its final payment for its mortgage loan thereafter.

(18) Income Taxes

The Company’s effective tax rate for the three months ended March 31, 2020 was (6.5)% compared with 0.7% for the corresponding period in the prior year. The effective income tax rate is based on estimated income for the year, the estimated composition of the income in different jurisdictions and discrete adjustments, if any, in the applicable periods, including retroactive changes in tax legislation, settlements of tax audits or assessments, and the resolution or identification of tax position uncertainties.

For the three months ended March 31, 2020 and 2019, the effective tax rates were lower than the statutory tax rate primarily due to the Company maintaining a valuation allowance reserve on its US deferred tax assets and to the composition of income from foreign jurisdictions taxed at lower rates.

As of March 31, 2020 and December 31, 2019, the Company had reserves for uncertain tax positions of $532 and $521, respectively. There were no material changes during the three months ended March 31, 2020 to the Company’s reserve for uncertain tax positions. The Company estimates that it is reasonably possible that the balance of unrecognized tax benefits as of March 31, 2020 may decrease $32 in the next twelve months as a result of a lapse of statutes of limitations and settlements with taxing authorities.

The Company’s tax jurisdictions include the United States, the United Kingdom, Denmark, Cyprus, Norway, Brazil, Singapore, Belgium, the Netherlands, Hong Kong, India and Japan. In general, the statute of limitations with respect to the Company's United States federal income taxes has expired for years prior to 2016, and the relevant state and foreign statutes vary. However, preceding years remain open to examination by United States federal and state and foreign taxing authorities to the extent of future utilization of net operating losses and research and development tax credits generated in each preceding year.

(19) Leases

The Company has operating leases for office facilities, equipment, and satellite service capacity and related equipment. Lease expense for the three months ended March 31, 2020 and 2019 was $1,262 and $1,265, respectively. Short-term operating lease costs for the three months ended March 31, 2020 and 2019 was $61 and $48, respectively. Sublease income for the three months ended March 31, 2020 and 2019 was $34. The future minimum lease payments under our operating leases as of March 31, 2020 are:

Remainder of 2020	$	1,804
2021		1,392
2022		1,298
2023		463
2024 and thereafter		589
Total minimum lease payments	$	5,546
Less amount representing interest	$	(490)
Present value of net minimum operating lease payments	$	5,056
Less current installments of obligation under current-operating lease liabilities	$	1,634
Obligations under long term - operating lease liabilities, excluding current installments	$	3,422
Weighted-average remaining lease term - operating leases (years)		3.24
Weighted-average discount rate - operating leases		5.50 %

During the first quarter of 2018, the Company entered into a five-year financing lease for three satellite hubs for its HTS network. As of March 31, 2020, the gross costs and accumulated amortization associated with this lease are included in revenue generating assets and amounted to $3,068 and $955, respectively. Property and equipment under capital leases are stated at the present value of minimum lease payments.

The property and equipment held under this financing lease are amortized on a straight-line basis over the seven-year estimated useful life of the asset, since the lease meets the bargain purchase option criteria. Amortization of assets held under financing leases is included within depreciation expense. Depreciation expense for these capital assets was $110 for both three months ended March 31, 2020 and 2019.

The future minimum lease payments under this financing lease as of March 31, 2020 are:

Remainder of 2020	$	468
2021		624
2022		624
2023		45
Total minimum lease payments	$	1,761
Less amount representing interest	$	(16)
Present value of net minimum financing lease payments	$	1,745
Less current installments of obligation under accrued other	$	615
Obligations under other long-term liabilities, excluding current installments	$	1,130
Weighted-average remaining lease term - finance leases (years)		2.92
Weighted-average discount rate - finance leases		1.53 %

Lessor

The Company enters into leases with certain customers primarily of the TracPhone mini-VSAT systems. These leases are classified as sales-type leases as title of the equipment transfers to the customer at the end of the lease term. The Company records the leases at a price typically equivalent to normal selling price and in excess of the cost or carrying amount. Upon delivery, the Company records the net present value of all payments under these leases as revenue, and the related costs of the product are charged to cost of sales. Interest income is recognized throughout the lease term (typically three to five years) using an implicit interest rate. The sales-type leases do not have unguaranteed residual assets.

The current portion of the net investment in these leases was $4,238 as of March 31, 2020 and the non-current portion of the net investment in these leases was $6,597 as of March 31, 2020. The current portion of the net investment in the leases is included in accounts receivable, net of allowance for doubtful accounts on the accompanying consolidated balance sheets and the non-current portion of the net investment in these leases is included in other non-current assets on the accompanying consolidated balance sheets. Interest income from sales-type leases was $197 and $168 during the three months ended March 31, 2020 and 2019, respectively.

The future undiscounted cash flows from these leases as of March 31, 2020 are:

Remainder of 2020	$	3,657
2021		3,407
2022		2,452
2023		1,776
2024		1,007
2025		53
Total undiscounted cash flows	$	12,352
Present value of lease payments	$	10,835
Difference between undiscounted cash flows and discounted cash flows	$	1,517

(20) Discontinued Operations

During the second quarter of 2019, the Company sold its Videotel business. The Company determined that the sale met the requirements for reporting as discontinued operations in accordance with Accounting Standards Codification (ASC) 205-20. Please see Note 1 for further discussion.

The following table presents a reconciliation of the major financial line items constituting the results for discontinued operations to the net income from discontinued operations, net of tax, presented separately in the Company's consolidated statements of operations and comprehensive income (loss):

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Sales:		
Service sales	$ —	$ 3,937
Costs, expenses and other expense, net:		
Costs of service sales	—	1,324
Sales, marketing and support	—	1,169
General and administrative	—	1,125
Other expense, net	—	(9)
Income from discontinued operations before tax expense	—	310
Gain on sale of discontinued operations before tax expense	—	—
Total income from discontinued operations before tax expense	$ —	$ 310
Income tax expense on discontinued operations	—	67
Income from discontinued operations, net of taxes	$ —	$ 243
Net income from discontinued operations per common share		
Basic and diluted	**$ —**	**$ 0.01**
Weighted average number of common shares outstanding:		
Basic and diluted	**17,529**	**17,302**

The following table presents supplemental cash flow information of the discontinued operations:

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Cash provided by operating activities—discontinued operations	$ —	$ 3,057
Cash used in investing activities—discontinued operations	$ —	$ (535)

(21) Subsequent Events

As a result of the COVID-19 pandemic, which has disrupted businesses around the world and led to the start of a global economic recession, we have developed and are implementing a plan to reduce costs and conserve cash balances in the event that the COVID-19 health crisis continues unabated through the remainder of this year or beyond. These plans include, among other things, a reduction in global salaries and benefits at most levels, implementation of a shortened work week in many areas, elimination of most non-essential or discretionary spending, and the indefinite delay of all capital outlays (except in connection with our AgilePlans program and Photonic Integrated Chip initiative). We have also developed contingent action plans that we may implement based on the duration of the health crisis and its continued negative global economic impact which includes furloughing some amount of our workforce or increasing the salary reduction at some or all levels of the Company. We are continuing to monitor global developments and are prepared to implement these and other actions should we consider it necessary.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Introduction

The statements included in this quarterly report on Form 10-Q, other than statements of historical fact, are forward-looking statements. Examples of forward-looking statements include statements regarding our future financial results, operating results, business strategies, projected costs, products and services, competitive positions and plans, customer preferences, consumer trends, anticipated product development, and objectives of management for future operations. In some cases, forward-looking statements can be identified by terminology such as "may," "will," "should," "would," "expects," "plans," "anticipates," "believes," "estimates," "predicts," "potential," "continue," or the negative of these terms or other comparable terminology. Any expectations based on these forward-looking statements are subject to risks and uncertainties and other important factors, including those discussed in the section entitled "Risk Factors" in Item 1A of Part II of this quarterly report on Form 10-Q and in Item 1A of Part I of our annual report on Form 10-K for the year ended December 31, 2019. These and many other factors could affect our future financial and operating results, and could cause actual results to differ materially from expectations based on forward-looking statements made in this document or elsewhere by us or on our behalf. For example, our expectations regarding certain items as a percentage of sales assume that we will achieve our anticipated sales goals. The following discussion and analysis should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this report.

Overview

We design, develop, manufacture and market mobile connectivity products and services for the marine and land mobile markets, and inertial navigation products for the commercial and defense markets. Our reporting segments are as follows:

- the mobile connectivity segment and
- the inertial navigation segment

Through these segments, we manufacture and sell our solutions in a number of major geographic areas, including internationally. We generate a majority of our revenues from various international locations, primarily consisting of Canada, Europe (both inside and outside the European Union), Africa, Asia/Pacific, and the Middle East.

Mobile Connectivity Segment

Our mobile connectivity segment offers satellite communications products and services. Our mobile connectivity products enable customers to receive voice and Internet services and live digital television via satellite services in marine vessels, recreational vehicles, buses and automobiles. We sell and lease our mobile connectivity products through an extensive international network of dealers and distributors. We also sell and lease products directly to end users.

Our mobile connectivity service sales include sales of satellite voice and Internet airtime services, engineering services provided under development contracts, sales from product repairs, and extended warranty sales. Our mobile connectivity service sales also include our distribution of entertainment, including news, sports, music, and movies, to commercial and leisure customers in the maritime, hotel, and retail markets through KVH Media Group. We typically recognize revenue from media content sales ratably over the period of the service contract. We provide, for monthly fixed fees and usage-based fees, satellite connectivity services for broadband Internet, data and Voice over Internet Protocol (VoIP) service to our TracPhone V-series customers. We also earn monthly usage fees for third-party satellite connectivity for voice, data and Internet services to our Inmarsat and Iridium customers who choose to activate their subscriptions with us. As a percentage of our consolidated net sales, our service sales were 64% for the three months ended March 31, 2020 and 2019.

Within the mobile connectivity segment, our marine leisure business is highly seasonal, and seasonality can also impact our commercial marine business. Historically, we have generated the majority of our marine leisure product revenues during the first and second quarters of each year, and these revenues typically decline in the third and fourth quarters of each year, compared to the first two quarters. Temporary suspensions of our airtime services typically increase in the third and fourth quarters of each year as boats are placed out of service during the winter months.

Sale of Videotel - Discontinued Operations

In May 2019, we sold our Videotel business, which provided eLearning computer-based training, to an affiliate of Oakley Capital, a UK company, for $89.4 million in cash, on a cash-free, debt-free basis, subject to a working capital adjustment. We made a bridge loan to the purchaser and received payment of the initial purchase price on June 21, 2019. We determined that the sale met the requirements for reporting as discontinued operations in accordance with ASC 205-20. Accordingly, we have classified the results of the Videotel business as discontinued operations for all periods presented. In December 2019, we finalized the working capital adjustment which reduced the proceeds from the sale of Videotel to $88.4 million. Please see Notes 1 and 20 for further discussion.

Out-of-Period Error

Each of mobile connectivity product sales, costs of product sales, sales, marketing and support expense, income tax benefit and net loss from continuing operations for the three months ended March 31, 2019 includes an adjustment to correct an immaterial prior period accounting error related to the implementation and application of ASC 606. See Note 16 of our consolidated interim financial statements for more information.

Inertial Navigation Segment

Our inertial navigation segment offers precision fiber optic gyro (FOG)-based systems that enable platform and optical stabilization, navigation, pointing, and guidance. Our inertial navigation products also include tactical navigation systems that provide uninterrupted access to navigation and pointing information in a variety of military vehicles, including tactical trucks and light armored vehicles. Our inertial navigation products are sold directly to U.S. and foreign governments and government contractors, as well as through an international network of authorized independent sales representatives. In addition, our inertial navigation products are used in numerous commercial products, such as navigation and positioning systems for various applications including precision mapping, dynamic surveying, autonomous vehicles, train location control and track geometry measurement systems, industrial robotics and optical stabilization. Our inertial navigation service sales include engineering services provided under development contracts, product repairs and extended warranty sales.

We generate sales primarily from the sale of our mobile connectivity systems and services and our inertial navigation products and services. The following table provides, for the periods indicated, our sales by segment:

	Three Months Ended March 31,	
	2020	2019
	(in thousands)	
Mobile connectivity	$ 28,896	$ 28,914
Inertial navigation	7,672	7,462
Net sales	$ 36,568	$ 36,376

Product sales within the mobile connectivity segment accounted for 18% and 20% of our consolidated net sales for the three months ended March 31, 2020 and 2019, respectively. Sales of mini-VSAT Broadband airtime services accounted for 53% and 50% of our consolidated net sales for the three months ended March 31, 2020 and 2019, respectively.

Within our inertial navigation segment, net sales of FOG-based guidance and navigation systems accounted for 14% and 13% of our consolidated net sales for the three months ended March 31, 2020 and 2019, respectively.

No other single product class accounted for 10% or more of our consolidated net sales for the three months ended March 31, 2020 or 2019. No individual customer accounted for 10% or more of our consolidated net sales for the three months ended March 31, 2020 or 2019.

We operate in a number of major geographic areas across the globe. We generate our international net sales, based upon customer location, primarily from customers located in Canada, Europe, Africa, Asia/Pacific, the Middle East, and India. Our international net sales totaled 58% of our consolidated net sales for the three months ended March 31, 2020 and 2019. Sales to Singapore represented 11% of our consolidated net sales for the three months ended March 31, 2020. No other individual foreign country represented 10% or more of our consolidated net sales for the three months ended March 31, 2020. No individual foreign country represented 10% or more of our consolidated net sales for the three months ended March 31, 2019. See Note 11 to our consolidated financial statements for more information on our segments.

In addition to our internally funded research and development efforts, we also conduct research and development activities that are funded by our customers. These activities relate primarily to engineering studies, surveys, prototype development, program management, and standard product customization. In accordance with accounting principles generally accepted in the United States of America, we account for customer-funded research as service revenue, and we account for the associated research and development costs as costs of service and product sales. As a result, customer-funded research and development are not included in the research and development expense that we present in our statement of operations. The following table presents our total annual research and development effort, representing the sum of research costs of service and product sales and the operating expense of research and development as described in our statement of operations. Our management believes this information is useful because it provides a better understanding of our total expenditures on research and development activities.

	Three Months Ended March 31,	
	2020	2019
	(in thousands)	
Research and development expense presented on the statement of operations	$ 4,287	$ 3,868
Costs of customer-funded research and development included in costs of service sales	834	1,048
Total consolidated statements of operations expenditures on research and development activities	$ 5,121	$ 4,916

COVID-19 Global Pandemic

The COVID-19 pandemic has disrupted businesses around the world and led to the start of a global economic recession. We began to observe the impact of the pandemic on our operating results in our first quarter, particularly in areas of our business impacted by global commerce (for example maritime shipping), travel and leisure. It is not possible to know how long the pandemic will continue or what the ongoing economic impact will be on our business or the global economy. The areas of our business most at risk to be negatively impacted by the prolonged continuation of this crisis include our mobile connectivity product sales, and related airtime, as commercial customers may delay acquiring VSAT systems due to the global reduction in maritime shipping, and our media business due to the severe restrictions on global travel. Likewise our inertial navigation product sales may be negatively impacted as domestic and foreign customers find it necessary to conserve cash in their own businesses in the face of a prolonged duration of the crisis. In response to these significant uncertainties, we have taken multiple steps to mitigate the impact of the pandemic on our business, including a comprehensive reduction in salaries and wages and the elimination of most discretionary expenditures including capital expenditures, and we continue to consider further actions which may include furloughing some level of our global workforce.

As of March 31, 2020, our cash and cash equivalents and marketable securities (“cash position”) approximated $41.0 million, and we had no outstanding short term or long term debt, other than normal levels of accounts payable and accrued expenses. While there can be no assurances that our strong cash position will sustain us through the duration of the pandemic, we believe that our cash position along with the mitigation actions we have taken or are contemplating position us reasonably well to withstand the impact of this global health crisis. We are continuing to monitor global developments and are prepared to implement further actions to ensure the sufficiency of our cash position should we consider it necessary.

Critical Accounting Policies and Significant Estimates

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets and liabilities, sales and expenses, and related disclosure at the date of our financial statements. Our significant accounting policies are summarized in Note 1 to the consolidated interim financial statements in our annual report on Form 10-K for the year ended December 31, 2019.

As described in our annual report on Form 10-K for the year ended December 31, 2019, our most critical accounting policies and estimates upon which our consolidated financial statements were prepared were those relating to revenue recognition, valuation of accounts receivable, valuation of inventory, expected future cash flows including growth rates, discount rates, terminal values and other assumptions and estimates used to evaluate the recoverability of long-lived assets and goodwill, estimated fair values of long-lived assets, including goodwill, amortization methods and periods, certain accrued expenses and other related charges, stock-based compensation, contingent liabilities, forfeitures and key valuation assumptions for its share-based awards, estimated fulfillment costs for warranty obligations, tax reserves and recoverability of our net deferred tax assets and related valuation allowance, and the valuation of right-of-use assets and lease liabilities. We have reviewed our policies and estimates and determined that these remain our most critical accounting policies and estimates for the three months ended March 31, 2020.

Readers should refer to our annual report on Form 10-K for the year ended December 31, 2019 under “Management’s Discussion and Analysis of Financial Condition and Results of Operation—Critical Accounting Policies and Significant Estimates” for descriptions of these policies and estimates, as well as the notes to the consolidated interim financial statements included elsewhere within this report.

Results of Operations

The following table provides, for the periods indicated, certain financial data expressed as a percentage of net sales:

	Three Months Ended March 31,	
	2020	2019
Sales:		
Product	35.8 %	36.3 %
Service	64.2	63.7
Net sales	100.0	100.0
Cost and expenses:		
Costs of product sales	26.4	22.8
Costs of service sales	41.6	42.3
Research and development	11.7	10.6
Sales, marketing and support	23.8	22.3
General and administrative	17.5	19.1
Total costs and expenses	121.0	117.1
Loss from operations	(21.0)	(17.1)
Interest income	0.9	0.5
Interest expense	—	1.1
Other income (expense), net	4.1	(0.3)
Loss before income tax	(16.0)	(18.0)
Income tax expense (benefit)	1.0	(0.1)
Net loss	(17.0) %	(17.9) %

Three Months Ended March 31, 2020 and 2019

Net Sales

As discussed further under the heading "Segment Discussion" below, product sales decreased $0.1 million, or 1%, to $13.1 million for the three months ended March 31, 2020 from $13.2 million for the three months ended March 31, 2019, primarily due to a decrease in mobile connectivity product sales of $0.8 million, partially offset by an increase in inertial navigation product sales of $0.7 million. Service sales for the three months ended March 31, 2020 increased $0.3 million, or 1%, to $23.5 million from $23.2 million for three months ended March 31, 2019 due to an increase in mobile connectivity service sales of $0.8 million, partially offset by a decrease in inertial navigation service sales of $0.5 million.

Costs of Sales

Costs of sales consists of costs of product sales and costs of service sales. Costs of sales increased $1.2 million, or 5%, in the three months ended March 31, 2020 to $24.8 million from $23.7 million in the three months ended March 31, 2019. The increase in costs of sales was driven by an increase of $1.4 million, or 16%, in costs of product sales, partially offset by a $0.2 million, or 1%, decrease in costs of service sales. As a percentage of net sales, costs of sales were 68% for the three months ended March 31, 2020 and 65% for the three months ended March 31, 2019.

Our costs of product sales consist primarily of materials, manufacturing overhead, and direct labor used to produce our products. For the three months ended March 31, 2020, costs of product sales increased $1.4 million, or 16%, to $9.6 million from $8.3 million in the three months ended March 31, 2019. As a percentage of product sales, costs of product sales were 74% and 63% for the three months ended March 31, 2020 and 2019, respectively. Mobile connectivity costs of product sales remained flat period over period. Mobile connectivity costs of product sales as a percentage of mobile connectivity product sales was 77% and 69% for the three months ended March 31, 2020 and 2019, respectively. Inertial navigation costs of product sales increased by $1.4 million, or 44%, primarily due to a $1.0 million decrease in absorption of factory overhead due to a decrease in the volume of production and an increase in scrap and other manufacturing period costs. Inertial navigation costs of product sales as a percentage of inertial navigation product sales was 70% and 53% for the three months ended March 31, 2020 and 2019, respectively.

Our costs of service sales consist primarily of satellite service capacity, depreciation, service network overhead expense associated with our mini-VSAT Broadband network infrastructure, direct network service labor, Inmarsat service costs, product installation costs, engineering and related direct costs associated with customer-funded research and development, media materials and distribution costs, and service repair materials. For the three months ended March 31, 2020, costs of service sales decreased by $0.2 million, or 1%, to $15.2 million from $15.4 million for the three months ended March 31, 2019. As a percentage of service sales, costs of service sales were 65% and 66% for the three months ended March 31, 2020 and 2019, respectively. Mobile connectivity costs of service sales increased by $0.1 million, or 1%, primarily due to a $0.1 million increase in content costs of service sales. Mobile connectivity costs of service sales as a percentage of mobile connectivity service sales was 64% and 66% for the three months ended March 31, 2020 and 2019, respectively. Inertial navigation costs of service sales decreased by $0.3 million, or 24%, primarily due to a decrease in contract engineering services revenues. Inertial navigation costs of service sales as a percentage of inertial navigation service sales was 73% and 65% for the three months ended March 31, 2020 and 2019, respectively.

Operating Expenses

Research and development expense consists of direct labor, materials, external consultants, and related overhead costs that support our internally funded product development and product sustaining engineering activities. Research and development expense for the three months ended March 31, 2020 increased by $0.4 million, or 11%, to $4.3 million from $3.9 million for the three months ended March 31, 2019. The primary reason for the increase in research and development expense was a $0.3 million increase in salaries and employee benefits and a $0.2 million decrease in funded engineering expenses (which are reflected in costs of service sales rather than research and development expense). As a percentage of net sales, research and development expense for the three months ended March 31, 2020 and 2019 was 12% and 11%, respectively.

Sales, marketing, and support expense consists primarily of salaries and related expenses for sales and marketing personnel, commissions for both in-house and third-party representatives, costs related to the co-development of certain content, other sales and marketing support costs such as advertising, literature and promotional materials, product service personnel and support costs, warranty-related costs and bad debt expense. Sales, marketing and support expense also includes the operating expenses of our sales office subsidiaries in Denmark, Singapore, Brazil, and Japan. Sales, marketing and support expense for the three months ended March 31, 2020 increased by $0.6 million, or 7%, to $8.7 million from $8.1 million for the three months ended March 31, 2019. The increase primarily resulted from a $0.3 million increase in salaries and employee benefits and a $0.3 million increase in bad debt expense. As a percentage of net sales, sales, marketing and support expense for the three months ended March 31, 2020 and 2019 was 24% and 22%, respectively.

General and administrative expense consists of costs attributable to management, finance and accounting, information technology, human resources, certain outside professional services, and other administrative costs. General and administrative expense for the three months ended March 31, 2020 decreased by $0.6 million, or 8%, to $6.4 million from $7.0 million for the three months ended March 31, 2019. The decrease resulted primarily from a $0.3 million decrease in salaries and employee benefits and a $0.3 million decrease in computer expenses. As a percentage of net sales, general and administrative expense for the three months ended March 31, 2020 and 2019 was 17% and 19%, respectively.

Interest and Other Income (Expense), Net

Interest income represents interest earned on our cash and cash equivalents, as well as from investments. Interest income increased slightly to $0.3 million for the three months ended March 31, 2020 from $0.2 million for the three months ended March 31, 2019. Interest expense decreased to less than $0.1 million for the three months ended March 31, 2020 from $0.4 million for the three months ended March 31, 2019 as a result of our repayment of all of our debt obligations during 2019. Other income, net increased to $1.5 million from other expense, net of $0.1 million for the three months ended March 31, 2020 and 2019 primarily due to an increase in foreign exchange gains from our UK operations.

Income Tax Expense (Benefit)

Income tax expense for the three months ended March 31, 2020 was $0.4 million and related to taxes on income earned in foreign jurisdictions. Income tax benefit for the three months ended March 31, 2019 was less than $0.1 million and related to taxes on income earned in foreign jurisdictions. The losses we incurred in the U.S. did not generate any income tax benefit during either quarter due to a full valuation allowance on our related deferred tax assets.

Discontinued Operations

During the second quarter of 2019, we sold our Videotel business for $89.4 million in cash, on a cash-free, debt-free basis, subject to a working capital adjustment. We determined that the sale met the requirements for reporting as discontinued operations in accordance with ASC 205-20. Accordingly, we have classified the results of the Videotel business as discontinued operations for all periods presented. In December 2019, we finalized the working capital adjustment, which reduced the proceeds from the sale of Videotel to $88.4 million. Please see Notes 1 and 20 of our consolidated interim financial statements for further information. Results for discontinued operations are as follows:

	Three Months Ended March 31,	
	2020	2019
	(in thousands)	
Sales from discontinued operations	$ —	$ 3,937
Income from discontinued operations, net of tax	$ —	$ 243

Segment Discussion - Three Months Ended March 31, 2020 and 2019

Our net sales by segment for the three months ended March 31, 2020 and 2019 were as follows:

	For the three months ended March 31,		Change 2020 vs. 2019	
	2020	2019	$	%
	(dollars in thousands)			
Mobile connectivity sales				
Product	$ 6,592	$ 7,403	$ (811)	(11)%
Service	22,304	21,511	793	4 %
Net sales	$ 28,896	$ 28,914	$ (18)	— %
Inertial navigation sales				
Product	$ 6,502	$ 5,812	$ 690	12 %
Service	1,170	1,650	(480)	(29)%
Net sales	$ 7,672	$ 7,462	$ 210	3 %

Operating income (loss) by segment for the three months ended March 31, 2020 and 2019 were as follows:

	For the three months ended March 31,		Change 2020 vs. 2019	
	2020	2019	$	%
	(dollars in thousands)			
Mobile connectivity	$ (2,299)	$ (1,444)	$ (855)	(59)%
Inertial navigation	(821)	443	(1,264)	(285)%
	$ (3,120)	$ (1,001)	(2,119)	(212)%
Unallocated	(4,528)	(5,233)	705	13 %
Loss from operations	$ (7,648)	$ (6,234)	$ (1,414)	(23)%

Mobile Connectivity Segment

Net sales in the mobile connectivity segment for the three months ended March 31, 2020 and 2019 were flat at $28.9 million. Mobile connectivity product sales decreased by $0.8 million, or 11%, to $6.6 million for the three months ended March 31, 2020 from $7.4 million for the three months ended March 31, 2019. The decrease was due to a $0.7 million, or 9%, decrease in marine mobile connectivity product sales, which was driven by a decrease in TracVision product sales. In addition, there was a $0.2 million decrease in land mobile product sales. The decrease in TracVision and land mobile product sales was due to a decline in leisure sales.

Mobile connectivity service sales increased by $0.8 million, or 4%, to $22.3 million for the three months ended March 31, 2020 from $21.5 million for the three months ended March 31, 2019. The increase was primarily due to a $0.9 million increase in our mini-VSAT service sales compared to the three months ended March 31, 2019, which resulted in part from a 10% increase in subscribers, primarily as a result of AgilePlans.

Our operating loss for the mobile connectivity segment increased by $0.9 million, or 59%, for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. This increase was primarily the result of a decrease in product sales less associated costs of $0.8 million, a $0.6 million increase in salaries and employee benefits and a $0.3 million increase in bad debt expense, which were partially offset by an increase in service sales less associated costs of $0.7 million and $0.2 million decrease in external commissions.

Inertial Navigation Segment

Net sales in the inertial navigation segment increased by $0.2 million, or 3%, for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. Inertial navigation product sales increased $0.7 million, or 12%, to $6.5 million for the three months ended March 31, 2020 from $5.8 million for the three months ended March 31, 2019. This increase was due to a $0.4 million increase in TACNAV sales and a $0.3 million increase in sales of our FOG and OEM products.

Inertial navigation service sales decreased $0.5 million, or 29%, to $1.2 million for the three months ended March 31, 2020 from $1.7 million for the three months ended March 31, 2019. The decrease was due to the timing of performance under an engineering and services development contract from a major U.S. defense contractor, which began in the fourth quarter of 2018 and will continue through December 2020.

Our operating loss for the inertial navigation segment increased $1.3 million, or 285%, for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. This increase is primarily due to a decrease in sales less associated costs of $0.9 million, a $0.2 million increase in external commissions and a $0.1 million increase in salaries and employee benefits.

Unallocated

Certain corporate-level costs have not been allocated because they are not attributable to either segment. These costs primarily consist of broad corporate functions, including executive, legal, finance, information technology, and costs associated with corporate actions.

Unallocated operating loss decreased by $0.7 million, or 13%, for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. The decrease in the operating loss was primarily the result of a $0.5 million decrease in salaries and employee benefits and a $0.3 million decrease in computer expenses.

Backlog

Backlog is not a meaningful indicator for predicting revenue in future periods. Commercial resellers for our mobile connectivity products and legacy products typically do not carry extensive inventories and rely on us to ship products quickly. Generally, due to the rapid delivery of our commercial products, our backlog for those products is not significant.

Our backlog for all products and services was $22.6 million and $19.5 million as of March 31, 2020 and December 31, 2019, respectively. As of March 31, 2020, $16.9 million of our backlog was scheduled for fulfillment in 2020, $5.4 million was scheduled for fulfillment in 2021, and $0.3 million was scheduled for fulfillment in 2022 through 2028.

Backlog consists of orders evidenced by written agreements and specified delivery dates for customers who are acceptable credit risks. We do not include satellite connectivity service sales in our backlog even though many of our satellite connectivity customers have signed annual or multi-year service contracts providing for a fixed monthly fee. Military orders included in backlog are generally subject to cancellation for the convenience of the customer. When orders are canceled, we generally recover actual costs incurred through the date of cancellation and the costs resulting from termination. As of March 31, 2020, our backlog included $2.6 million in orders that are subject to cancellation for convenience by the customer. Individual orders for inertial navigation products are often large and may require procurement of specialized long-lead components and allocation of manufacturing resources. The complexity of planning and executing larger orders generally requires customers to order well in advance of the required delivery date, resulting in backlog.

Liquidity and Capital Resources

Our primary liquidity needs are to fund general business requirements, including working capital requirements and capital expenditures. In recent years, we have funded our operations primarily from cash flows from operations, bank financing, an equity private placement, the proceeds received from exercises of stock options and in 2019 by selling our Videotel training business. We believe that we have sufficient cash to satisfy obligations that will come due over the next twelve months.

As of March 31, 2020, we had $41.0 million in cash, cash equivalents, and marketable securities, of which $3.0 million in cash and cash equivalents was held in local currencies by our foreign subsidiaries. Our foreign subsidiaries held no marketable securities as of March 31, 2020. As of March 31, 2020, we had $63.6 million in working capital.

Net cash used in operations was $2.9 million for the three months ended March 31, 2020 compared to net cash used in operations of $1.1 million for the three months ended March 31, 2019. The $1.9 million increase in cash used in operations is primarily due to a $2.9 million decrease in non-cash items, a $2.5 million increase in cash outflows relating to prepaid expenses, other current assets and other non-current assets and a $1.8 million increase in cash outflows relating to accounts payable and accrued expenses. Partially offsetting these changes were a $2.6 million increase of cash inflows relating to accounts receivable, a $1.6 million increase of cash inflows relating to deferred revenues and a $1.0 million decrease of cash outflows relating to inventories.

Net cash provided by investing activities was $4.1 million for the three months ended March 31, 2020 compared to net cash used in investing activities of $3.1 million for the three months ended March 31, 2019. The $7.2 million increase was principally due to a $7.4 million cash inflow from net investments in available-for-sale marketable securities, partially offset by a $0.2 million increase in capital expenditures.

Net cash used in financing activities was $0.4 million for the three months ended March 31, 2020 compared to net cash provided by financing activities of $0.1 million for the three months ended March 31, 2019. The key driver for the increase was the repurchase of common stock of $0.4 million.

Borrowing Arrangements

Term Note and Line of Credit

Effective October 30, 2018, we entered into an amended and restated three-year senior credit facility agreement (the 2018 Credit Agreement) with Bank of America, N.A., as Administrative Agent, and the lenders named from time to time as parties thereto (the 2018 Lenders), for an aggregate amount of up to $42.5 million, including a term loan (2018 Term Loan) of $22.5 million and a reducing revolving credit facility (the 2018 Revolver) of up to $20.0 million initially and reducing to $15.0 million on December 31, 2019, each to be used for general corporate purposes, including the refinancing of indebtedness under our then-outstanding senior credit facility agreement.

On May 13, 2019, we entered into a consent with Bank of America, N.A., as Administrative Agent, authorizing the Purchase Agreement and Bridge Loan, as discussed in Note 1 to our consolidated interim financial statements. On June 27, 2019, we used the proceeds of the sale of Videotel to repay in full the then-outstanding balance of $21.4 million under the 2018 Term Loan and to repay $13.0 million of the then-outstanding balance under the 2018 Revolver. Under the terms of the consent, the 2018 Revolver will remain at $20.0 million through the term of the 2018 Credit Agreement. On October 30, 2021, the entire principal balance of any outstanding loans under the 2018 Revolver will be due and payable, together with all accrued and unpaid interest, fees and any other amounts due and payable under the 2018 Credit Agreement. As of March 31, 2020, no amounts were outstanding under the 2018 Revolver.

Borrowings of up to $20.0 million under the 2018 Revolver are subject to the satisfaction of various conditions precedent at the time of each borrowing, including the continued accuracy of our representations and warranties and the absence of any default under the 2018 Credit Agreement. As of March 31, 2020, we are not able to draw on these funds due to covenant restrictions.

The 2018 Credit Agreement contains two financial covenants, a maximum Consolidated Leverage Ratio and a minimum Consolidated Fixed Charge Coverage Ratio, each as defined in the 2018 Credit Agreement. The Consolidated Leverage Ratio may not be greater than 2.50:1.00 on December 31, 2019 and declines to 2.00:1.00 on December 31, 2020. The Consolidated Fixed Charge Coverage Ratio may not be less than 1.25:1.00.

The 2018 Credit Agreement imposes certain other affirmative and negative covenants, including without limitation covenants with respect to the payment of taxes and other obligations, compliance with laws, performance of material contracts, creation of liens, incurrence of indebtedness, investments, dispositions, fundamental changes, restricted payments, changes in the nature of our business, transactions with affiliates, corporate and accounting changes, and sale and leaseback arrangements.

Mortgage Loan

We previously had a mortgage loan (Mortgage Loan) related to its headquarters facility in Middletown, Rhode Island. On April 1, 2019, on the Mortgage Loan's original termination date, we repaid in full the outstanding balance of $2.6 million. As discussed in Note 17 to the consolidated interim financial statements, in April 2010 we entered into two interest rate swap agreements that were intended to hedge our mortgage interest obligations over the term of the Mortgage Loan by fixing the interest rates specified in the Mortgage Loan to 5.91% for half of the principal amount outstanding as of April 1, 2010 and 6.07% for the remaining half. Both interest rate swap agreements were also settled upon repayment of the Mortgage Loan

Other Matters

We intend to continue to invest in the mini-VSAT Broadband network on a global basis. As part of the future potential capacity expansion, we would plan to seek to acquire additional satellite capacity from satellite operators, expend funds to seek regulatory approvals and permits, develop product enhancements in anticipation of the expansion, and hire additional personnel. From time to time we have entered into multi-year agreements to lease satellite capacity, and we have also purchased numerous satellite hubs to support the added capacity. These transactions can involve millions of dollars, and from time to time we have entered into secured lending arrangements to finance them.

On November 26, 2008, our Board of Directors authorized a program to repurchase up to one million shares of our common stock. The program was superseded on October 4, 2019. On October 4, 2019, our Board of Directors authorized a new share repurchase program pursuant to which we may purchase up to one million shares of our common stock. The repurchase program is expected to be funded by using our existing cash, cash equivalents, marketable securities and future cash flows. Under the repurchase program, at management's discretion, we may repurchase shares on the open market from time to time, in privately negotiated transactions or block transactions, or through an accelerated repurchase agreement. The timing of such repurchases depends on availability of shares, price, market conditions, alternative uses of capital, and applicable regulatory requirements. The program may be modified, suspended or terminated at any time without prior notice. The repurchase program has a duration of one year. Under the 2018 Credit Agreement, we may not repurchase more than $5.0 million of shares before October 31, 2021 without appropriate consent. As of March 31, 2020, we had repurchased 150,272 shares of our common stock in open market transactions at a cost of approximately $1.7 million. As of March 31, 2020, 849,728 shares of our common stock remain available for repurchase under the program. During the three months ended March 31, 2020, the Company repurchased 35,256 shares of common stock in open market transactions at a cost of approximately $0.4 million.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, which are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission'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 timely decisions regarding required disclosure. Under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, our management has evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2020, the end of the period covered by this interim report. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of March 31, 2020.

Changes in Internal Control over Financial Reporting

Under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, our management has evaluated changes in our internal control over financial reporting that occurred during the first quarter of 2020. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer did not identify any change in our internal control over financial reporting during the first quarter of 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Important Considerations

The effectiveness of our disclosure controls and procedures and our internal control over financial reporting is subject to various inherent limitations, including cost limitations, judgments used in decision making, assumptions about the likelihood of future events, the soundness of our systems, the possibility of human error, and the risk of fraud. Moreover, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions and the risk that the degree of compliance with policies or procedures may deteriorate over time. Because of these limitations, there can be no assurance that any system of disclosure controls and procedures or internal control over financial reporting will be successful in preventing all errors or fraud or in making all material information known in a timely manner to the appropriate levels of management.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

From time to time, we are involved in litigation incidental to the conduct of our business. In the ordinary course of business, we are a party to inquiries, legal proceedings and claims including, from time to time, disagreements with vendors and customers. We are not a party to any lawsuit or proceeding that, in our opinion, is likely to materially harm our business, results of operations, financial condition, or cash flows.

ITEM 1A. RISK FACTORS

This section augments and updates certain risk factors disclosed in Item 1A of Part I of our Annual Report on Form 10-K for the year ended December 31, 2019, or the Annual Report. The following risk factors supersede the corresponding risks described in the Annual Report and should be read together with the other risk factors disclosed in the Annual Report.

An investment in our common stock involves a high degree of risk. You should carefully consider the following risk factors in evaluating our business. If any of these risks, or other risks not presently known to us or that we currently believe are not significant, develops into an actual event, then our business, financial condition and results of operations could be adversely affected. If that happens, the market price of our common stock could decline.

There have been no material changes, other than as described below, from the risk factors set forth in Part I, Item 1A, “Risk Factors” of our Annual Report on Form 10-K for the fiscal year ended December 31, 2019. Please refer to that section for disclosures regarding what we believe are the more significant risks and uncertainties related to our business.

The recent COVID-19 pandemic may have a material adverse effect on our revenues, results of operations and financial condition.

The COVID-19 pandemic has spread to the United States and other countries in which we, our customers and our suppliers do business. Governments in affected regions have implemented and are continuing to implement extensive safety precautions, including quarantines, travel restrictions, business closures, cancellations of public gatherings and other measures. Other organizations and individuals are taking additional steps to avoid or reduce infection, including limiting travel and implementing work-at-home policies. These measures have significantly disrupted normal business operations both in and outside of affected areas. Travel restrictions and safety precautions have also limited our field service engineers from servicing and installing our equipment. Although we are unable to predict the precise impact of the pandemic on our business, our mobile communications business in particular depends to a large extent on travel. The operations of our KVH Media Group have been particularly impacted due in part to the global reduction in travel resulting from the pandemic. We anticipate that, unless the outbreak is swiftly contained, governmental, individual, business and other organizational measures to limit the spread of the virus will adversely affect our revenues, results of operations and financial condition, perhaps materially. We continue to monitor our operations and government recommendations and have made modifications to our operations because of the pandemic. For example, we have generally asked our employees to alter or cancel travel plans involving affected areas. Major industry events have been cancelled, which has adversely affected our ability to meet with existing and potential new customers. This or any other outbreak and any additional preventative or protective actions that may be taken in response to this or any other global health threat or pandemic may result in additional business and/or operational disruption. Our customers’ businesses could be disrupted, and our revenues could be adversely affected. Additionally, global economic disruptions like the COVID-19 pandemic could negatively impact our supply chain and cause delays in the delivery of raw materials, components and other supplies that we need to conduct our operations. We may be unable to locate replacement materials, components or other supplies, and ongoing delays could reduce sales and adversely affect our revenues and results of operations. The extent to which the pandemic will impact our business will depend on many factors beyond our control, including the speed of contagion, the development and implementation of effective preventative measures and possible treatments, the scope of governmental and other restrictions on travel and other activity, and public reactions to these factors.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

On October 4, 2019, our Board of Directors authorized a share repurchase program pursuant to which we may purchase up to one million shares of our common stock. As of March 31, 2020, 849,728 shares of our common stock remain available for repurchase under the program. The repurchase program is expected to be funded by using our existing cash, cash equivalents, marketable securities, and future cash flows. Under the repurchase program, at management's discretion, we may repurchase shares on the open market from time to time, in privately negotiated transactions or block transactions, or through an accelerated repurchase agreement. The timing of such repurchases depends on availability of shares, price, market conditions, alternative uses of capital, and applicable regulatory requirements. The program may be modified, suspended or terminated at any time without prior notice. The repurchase program has a duration of one year. Under the 2018 Credit Agreement, we may not repurchase more than $5.0 million of shares before October 31, 2021 without appropriate consent. There were no other repurchase programs outstanding during the three months ended March 31, 2020, and no repurchase programs expired that period.

During the three months ended March 31, 2020, no vested restricted shares were surrendered to us in satisfaction of tax withholding obligations.

The following table provides information about our repurchases of common stock during the three months ended March 31, 2020.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
January 1-January 31	35,256	$ 11.03	35,256	849,728
February 1-February 29	—	$ —	—	849,728
March 1-March 31	—	$ —	—	849,728
Total	35,256	$ 11.03	35,256	

ITEM 6. EXHIBITS

Exhibits:

Exhibit No.	Description	Filed with this Form 10-Q	Incorporated by Reference		
			Form	Filing Date	Exhibit No.
3.1	Amended and Restated Certificate of Incorporation, as amended		10-Q	August 6, 2010	3.1
3.2	Amended and Restated Bylaws		10-Q	November 1, 2017	3.2
4.1	Specimen certificate for the common stock		10-K	March 2, 2018	4.1
31.1	Rule 13a-14(a)/15d-14(a) certification of principal executive officer	X			
31.2	Rule 13a-14(a)/15d-14(a) certification of principal financial officer	X			
32.1	Section 1350 certification of principal executive officer and principal financial officer	X			
101	The following financial information from KVH Industries, Inc.'s Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, formatted in XBRL (Extensible Business Reporting Language): (i) the Consolidated Balance Sheets (unaudited), (ii) the Consolidated Statements of Operations (unaudited), (iii) the Consolidated Statements of Comprehensive Loss (unaudited), (iv) the Consolidated Statement of Stockholders' Equity (unaudited), (v) the Consolidated Statements of Cash Flows (unaudited), and (vi) the Notes to Consolidated Interim Financial Statements (unaudited).	X			

SIGNATURE

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.

Date: May 1, 2020

KVH Industries, Inc.

By: /s/ DONALD W. REILLY

Donald W. Reilly

(Duly Authorized Officer and Chief Financial Officer)

Exhibit Index

Exhibit No.	Description	Filed with this Form 10-Q	Incorporated by Reference		
			Form	Filing Date	Exhibit No.
3.1	Amended and Restated Certificate of Incorporation, as amended		10-Q	August 6, 2010	3.1
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31.2	Rule 13a-14(a)/15d-14(a) certification of principal financial officer	X			
32.1	Section 1350 certification of principal executive officer and principal financial officer	X			
101	The following financial information from KVH Industries, Inc.'s Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, formatted in XBRL (Extensible Business Reporting Language): (i) the Consolidated Balance Sheets (unaudited), (ii) the Consolidated Statements of Operations (unaudited), (iii) the Consolidated Statements of Comprehensive Loss (unaudited), (iv) the Consolidated Statement of Stockholders' Equity (unaudited), (v) the Consolidated Statements of Cash Flows (unaudited), and (vi) the Notes to Consolidated Interim Financial Statements (unaudited).	X			

Exhibit 31.1

Certification of Principal Executive Officer
Pursuant to Rule 13a-14 or 15d-14 under the Securities Exchange Act of 1934 as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Martin A. Kits van Heyningen, certify that:

1. I have reviewed this quarterly report on Form 10-Q of KVH Industries, Inc.;

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

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

4. The registrant's other certifying officer 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: May 1, 2020

/s/ Martin A. Kits van Heyningen

Martin A. Kits van Heyningen

President, Chief Executive Officer and

Chairman of the Board

Exhibit 31.2

Certification of Principal Financial Officer
Pursuant to Rule 13a-14 or 15d-14 under the Securities Exchange Act of 1934 as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Donald W. Reilly, certify that:

1. I have reviewed this quarterly report on Form 10-Q of KVH Industries, Inc.;

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

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

4. The registrant's other certifying officer 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: May 1, 2020

/s/ Donald W. Reilly

Donald W. Reilly

Chief Financial Officer

Exhibit 32.1

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

In connection with the Quarterly Report on Form 10-Q of KVH Industries, Inc. (the “Company”) for the quarter ended March 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), each of the undersigned President, Chief Executive Officer and Chairman of the Board, and Chief Financial Officer of the Company, certifies, to his best knowledge and belief, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

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

/s/ Martin A. Kits van Heyningen	/s/ Donald W. Reilly
Martin A. Kits van Heyningen	Donald W. Reilly
President, Chief Executive Officer and Chairman of the Board	Chief Financial Officer
Date: May 1, 2020	Date: May 1, 2020