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: 000-49842

CEVA, Inc.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**77-0556376**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
1174 Castro Street, Suite 210, Mountain View, California	**94040**
(Address of Principal Executive Offices)	**(Zip Code)**

(650) 417-7900
(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, $.001 per share	CEVA	The NASDAQ Stock Market LLC

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 definition of "large accelerated filer", "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one).

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: 22,004,304 of common stock, $0.001 par value, as of May 4, 2020.

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FORWARD-LOOKING STATEMENTS

FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This Quarterly Report contains forward-looking statements that involve risks and uncertainties, as well as assumptions that if they materialize or prove incorrect, could cause the results of CEVA to differ materially from those expressed or implied by such forward-looking statements and assumptions. All statements other than statements of historical fact are statements that could be deemed forward-looking statements. Forward-looking statements are generally written in the future tense and/or are preceded by words such as “will,” “may,” “should,” “could,” “expect,” “suggest,” “believe,” “anticipate,” “intend,” “plan,” or other similar words. Forward-looking statements include the following:

- Our forecast that in 2022, our licensing and related revenue will have grown approximately 10% to 20% from the 2018 licensing revenue level, our royalty revenue will be approximately two times greater than 2018 royalty revenue and our non-GAAP net income will be approximately three times greater than 2018 non-GAAP net income;

- Our belief that our licensing business is robust with a diverse customer base and a myriad of target markets;

- Our belief that we are an incumbent player in the mobile handsets space;

- Our belief that we continue to experience strong demand for all of our technologies, especially for 5G and Wi-Fi 6 applications;

- Our belief that our PentaG platform for 5G handsets and other 5G endpoints is the most advanced cellular baseband IP in the industry today and puts us in a strong position to power 5G smartphones, fixed wireless and a range of robotics, automotive, and smart cities and other industrial applications;

- Our belief that our specialization and technological edge in signal processing platforms for 5G base station RAN, including Remote Radio Units (RRU) and Base Band Units (BBU), put us in a strong position to capitalize on the growing deployment of 5G infrastructure, including its different architectures such C-RAN, D-RAN, V-RAN and O-RAN;

- Our belief that our broad Bluetooth, Wi-Fi and NB-IoT IPs allow us to expand further into IoT applications and substantially increase our overall addressable market and value-add;

- Our belief that the growing market potential for voice assisted devices offers an additional growth segment for us, and that our highly-integrated platforms, plus our proven track record in audio/voice processing, put us in a strong position to power audio and voice roadmaps across a new range of addressable end markets;

- Our belief that the growing use of vision processing, SLAM and neural net software are opportunities for us to expand our footprint and content in smartphones, drones, AR, XR, consumer cameras, surveillance, automotive ADAS, robotics and industrial IoT applications;

- Our belief that the trend to move AI workloads from the cloud to the edge represents new licensing and royalty drivers for the company in the coming years;

- Our belief that SensPro™ is the world’s first high performance sensor hub processor specifically for multi-sensor processing, which will open up new licensing and royalty opportunities and markets for us;

- Our belief that the Hillcrest Labs sensor fusion business unit allows us to address an important technology for smart sensing, including robot vacuum cleaners, DTVs, OTTs, remote controls, stylus pens and many other application that make use of IMU;

- Per Yole Dévelopement, camera-enabled devices incorporating computer vision and AI are expected to exceed 1 billion units by 2022;

- Our belief that our Bluetooth, Wi-Fi and NB-IoT IPs allow us to expand further into IoT applications and substantially increase our overall addressable market, which is expected to be more than 9 billion devices annually by 2022 based on ABI Research and Ericsson Mobility Reports;

- Our expectation of significant growth in royalty revenues derived from base station and IoT applications over the next few years, which will be comprised of a range of different products at different royalty ASPs, spanning from high volume Bluetooth to high value sensor fusion and base station RAN. The royalty ASP of our other products will be in between the two ranges;

- Our anticipation that our cash and cash equivalents, short-term bank deposits and marketable securities, along with cash from operations, will provide sufficient capital to fund our operations for at least the next 12 months; and

- Our belief that changes in interest rates within our investment portfolio will not have a material effect on our financial position on an annual or quarterly basis.

Forward-looking statements are not guarantees of future performance and involve risks and uncertainties. The forward-looking statements contained in this report are based on information that is currently available to us and expectations and assumptions that we deem reasonable at the time the statements were made. We do not undertake any obligation to update any forward-looking statements in this report or in any of our other communications, except as required by law. All such forward-looking statements should be read as of the time the statements were made and with the recognition that these forward-looking statements may not be complete or accurate at a later date.

Many factors may cause actual results to differ materially from those expressed or implied by the forward-looking statements contained in this report. These factors include, but are not limited to, those risks set forth in Part II – Item 1A – “Risk Factors” of this Form 10Q.

This report contains market data prepared by third party research firm. Actual market results may differ from their projections.

PART I. FINANCIAL INFORMATION

Item 1. FINANCIAL STATEMENTS

INTERIM CONDENSED CONSOLIDATED BALANCE SHEETS

U.S. dollars in thousands, except share and per share data

	March 31, 2020	December 31, 2019
	Unaudited	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 22,903	$ 22,803
Short term bank deposits	58,481	56,915
Marketable securities	67,909	64,867
Trade receivables (net of allowance for credit losses of $1,199 at March 31, 2020 and $327 at December 31, 2019)	24,925	28,307
Prepaid expenses and other current assets	6,981	5,660
Total current assets	181,199	178,552
Long-term assets:		
Bank deposits	1,296	5,368
Severance pay fund	9,827	9,881
Deferred tax assets, net	11,753	10,605
Property and equipment, net	7,944	7,879
Operating lease right-of-use assets	10,608	11,066
Goodwill	51,070	51,070
Intangible assets, net	12,771	13,424
Investments in non-marketable equity securities	936	936
Other long-term assets	8,513	8,240
Total long-term assets	114,718	118,469
Total assets	$ 295,917	$ 297,021
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Trade payables	$ 925	$ 701
Deferred revenues	4,034	3,642
Accrued expenses and other payables	3,013	3,748
Accrued payroll and related benefits	17,266	15,894
Operating lease liabilities	2,375	2,393
Total current liabilities	27,613	26,378
Long-term liabilities:		
Accrued severance pay	10,607	10,551
Operating lease liabilities	7,788	8,273
Other accrued liabilities	637	662
Total long-term liabilities	19,032	19,486
Stockholders' equity:		
Preferred Stock: $0.001 par value: 5,000,000 shares authorized; none issued and outstanding	—	—
Common Stock: $0.001 par value: 45,000,000 shares authorized; 23,595,160 shares issued at March 31, 2020 (unaudited) and December 31, 2019. 21,999,660 and 21,839,369 shares outstanding at March 31, 2020 (unaudited) and December 31, 2019, respectively	22	22
Additional paid in-capital	225,583	228,005
Treasury stock at cost (1,595,500 and 1,755,791 shares of common stock at March 31, 2020 (unaudited) and December 31, 2019, respectively)	(36,033)	(39,390)
Accumulated other comprehensive gain (loss)	(349)	94
Retained earnings	60,049	62,426
Total stockholders' equity	249,272	251,157
Total liabilities and stockholders' equity	$ 295,917	$ 297,021

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

INTERIM CONDENSED CONSOLIDATED STATEMENTS OF INCOME (LOSS) (UNAUDITED)

U.S. dollars in thousands, except per share data

	Three months ended March 31, 2020	Three months ended March 31, 2019
Revenues:		
Licensing and related revenue	$ 14,495	$ 11,011
Royalties	9,120	5,958
Total revenues	23,615	16,969
Cost of revenues	2,751	2,023
Gross profit	20,864	14,946
Operating expenses:		
Research and development, net	15,113	12,330
Sales and marketing	3,168	3,021
General and administrative	3,664	2,317
Amortization of intangible assets	582	210
Total operating expenses	22,527	17,878
Operating loss	(1,663)	(2,932)
Financial income, net	831	800
Loss before taxes on income	(832)	(2,132)
Taxes on income	353	165
Net loss	$ (1,185)	$ (2,297)
Basic net loss per share	$ (0.05)	$ (0.10)
Diluted net loss per share	$ (0.05)	$ (0.10)
Weighted-average shares used to compute net loss per share (in thousands):		
Basic	22,421	21,917
Diluted	22,421	21,917

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

INTERIM CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS (UNAUDITED)

U.S. dollars in thousands

	Three months ended March 31,	
	2020	**2019**
Net loss:	$ (1,185)	$ (2,297)
Other comprehensive income (loss) before tax:		
Available-for-sale securities:		
Changes in unrealized gains (losses)	(778)	639
Reclassification adjustments for (gains) losses included in net income (loss)	2	24
Net change	(776)	663
Cash flow hedges:		
Changes in unrealized gains	201	206
Reclassification adjustments for gains included in net income (loss)	—	(73)
Net change	201	133
Other comprehensive income (loss) before tax	(575)	796
Income tax expense (benefit) related to components of other comprehensive income (loss)	(132)	109
Other comprehensive income (loss), net of taxes	(443)	687
Comprehensive loss	$ (1,628)	$ (1,610)

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

INTERIM CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (UNAUDITED)

U.S. dollars in thousands, except share data

Three months ended March 31, 2020	Common stock: Number of shares outstanding	Common stock: Amount	Additional paid-in capital	Treasury stock	Accumulated other comprehensive income (loss)	Retained earnings	Total stockholders' equity
Balance as of January 1, 2020	21,839,369	$ 22	$ 228,005	$ (39,390)	$ 94	$ 62,426	$ 251,157
Net loss	—	—	—	—	—	(1,185)	(1,185)
Other comprehensive loss	—	—	—	—	(443)	—	(443)
Equity-based compensation	—	—	3,107	—	—	—	3,107
Purchase of treasury stock	(202,392)	—	—	(4,780)	—	—	(4,780)
Issuance of treasury stock upon exercise of stock-based awards	362,683	—(*)	(5,529)	8,137	—	(1,192)	1,416
Balance as of March 31, 2020	21,999,660	$ 22	$ 225,583	$ (36,033)	$ (349)	$ 60,049	$ 249,272

Three months ended March 31, 2019	Common stock: Number of shares outstanding	Common stock: Amount	Additional paid-in capital	Treasury stock	Accumulated other comprehensive income (loss)	Retained earnings	Total stockholders' equity
Balance as of January 1, 2019	21,787,860	$ 22	$ 223,250	$ (39,132)	$ (1,114)	$ 62,853	$ 245,879
Net loss	—	—	—	—	—	(2,297)	(2,297)
Other comprehensive income	—	—	—	—	687	—	687
Equity-based compensation	—	—	2,416	—	—	—	2,416
Purchase of treasury stock	(91,303)	—	—	(2,536)	—	—	(2,536)
Issuance of treasury stock upon exercise of stock-based awards	276,259	—(*)	(4,595)	5,982	—	(224)	1,163
Balance as of March 31, 2019	21,972,816	$ 22	$ 221,071	$ (35,686)	$ (427)	$ 60,332	$ 245,312

(*) Amount less than $1.

The accompanying notes are an integral part of the interim condensed consolidated financial statements.

INTERIM CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (UNAUDITED)

U.S. dollars in thousands

	Three months ended March 31, 2020		Three months ended March 31, 2019	
Cash flows from operating activities:				
Net loss	$	(1,185)	$	(2,297)
Adjustments required to reconcile net loss to net cash provided by operating activities:				
Depreciation		809		702
Amortization of intangible assets		653		289
Equity-based compensation		3,107		2,416
Realized loss, net on sale of available-for-sale marketable securities		2		24
Amortization of premiums on available-for-sale marketable securities		105		156
Unrealized foreign exchange (gain) loss		(74)		107
Changes in operating assets and liabilities:				
Trade receivables		3,375		6,802
Prepaid expenses and other assets		(1,595)		(3,119)
Operating lease right-of-use assets		458		284
Accrued interest on bank deposits		439		(342)
Deferred tax, net		(1,016)		(371)
Trade payables		140		124
Deferred revenues		392		(782)
Accrued expenses and other payables		(526)		(551)
Accrued payroll and related benefits		1,640		1,429
Operating lease liability		(436)		(298)
Accrued severance pay, net		129		95
Net cash provided by operating activities		6,417		4,668
Cash flows from investing activities:				
Acquisition of business		(204)		—
Purchase of property and equipment		(790)		(623)
Investment in bank deposits		(8,893)		(3,846)
Proceeds from bank deposits		10,893		—
Investment in available-for-sale marketable securities		(13,108)		(5,028)
Proceeds from maturity of available-for-sale marketable securities		5,426		2,917
Proceeds from sale of available-for-sale marketable securities		3,757		2,476
Net cash used in investing activities		(2,919)		(4,104)
Cash flows from financing activities:				
Purchase of treasury stock		(4,780)		(2,536)
Proceeds from exercise of stock-based awards		1,416		1,163
Net cash used in financing activities		(3,364)		(1,373)
Effect of exchange rate changes on cash and cash equivalents		(34)		18
Increase (decrease) in cash and cash equivalents		100		(791)
Cash and cash equivalents at the beginning of the period		22,803		22,260
Cash and cash equivalents at the end of the period	$	22,903	$	21,469
Supplemental information of cash-flow activities:				
Cash paid during the period for:				
Income and withholding taxes	$	1,084	$	1,868
Non-cash transactions:				
Property and equipment purchases incurred but unpaid at period end	$	84	$	—

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

NOTE 1: BUSINESS

The financial information in this quarterly report includes the results of CEVA, Inc. and its subsidiaries (the "Company" or "CEVA").

CEVA licenses a family of signal processing IPs in two types of categories: wireless connectivity and smart sensing products. These products include comprehensive DSP-based platforms for 5G baseband processing in mobile and infrastructure, advanced imaging and computer vision for any camera-enabled device and audio/voice/speech and ultra-low power always-on/sensing applications for multiple IoT markets. For sensor fusion, CEVA's Hillcrest Labs sensor processing technologies and SensPro™ sensor hub DSP provide a broad range of sensor fusion processing, software and IMU solutions for AR/VR, robotics, remote controls, and IoT. For artificial intelligence, CEVA offers a family of AI processors capable of handling the complete gamut of neural network workload and on-device. For wireless IoT, CEVA offers the industry's most widely adopted IPs for Bluetooth (low energy and dual mode), Wi-Fi 4/5/6 (802.11n/ac/ax) and NB-IoT.

CEVA's technologies are licensed to leading semiconductor and original equipment manufacturer (OEM) companies. These companies design, manufacture, market and sell application-specific integrated circuits ("ASICs") and application-specific standard products ("ASSPs") based on CEVA's technology to wireless, consumer electronics and automotive companies for incorporation into a wide variety of end products.

NOTE 2: BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The interim condensed consolidated financial statements have been prepared according to U.S Generally Accepted Accounting Principles ("U.S. GAAP").

The accompanying unaudited interim condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States. In the opinion of management, all adjustments considered necessary for a fair presentation have been included. Operating results for the three months ended March 31, 2020 are not necessarily indicative of the results that may be expected for the year ending December 31, 2020. For further information, reference is made to the consolidated financial statements and footnotes thereto included in the Company's Annual Report on Form 10K for the year ended December 31, 2019.

The significant accounting policies applied in the annual consolidated financial statements of the Company as of December 31, 2019, contained in the Company's Annual Report on Form 10K filed with the Securities and Exchange Commission on February 28, 2020, have been applied consistently in these unaudited interim condensed consolidated financial statements.

Recently Adopted Accounting Pronouncements

On January 1, 2020, the Company adopted Accounting Standards Update ("ASU") No. 2016-13, "Financial Instruments – Credit Losses on Financial Instruments," which requires that expected credit losses relating to financial assets be measured on an amortized cost basis and available-for-sale debt securities be recorded through an allowance for credit losses. ASU 2016-13 limits the amount of credit losses to be recognized for available-for-sale debt securities to the amount by which carrying value exceeds fair value and also requires the reversal of previously recognized credit losses if fair value increases. The adoption by the Company of the new guidance did not have a material impact on the Company's consolidated financial statements.

Trade Receivable and Allowances

Trade receivable are recorded and carried at the original invoiced amount less an allowance for any potential uncollectible amounts. The Company makes estimates of expected credit losses for the allowance for doubtful accounts and allowance for unbilled receivables based upon its assessment of various factors, including historical experience, the age of the trade receivable balances, credit quality of its customers, current economic conditions, reasonable and supportable forecasts of future economic conditions, and other factors that may affect its ability to collect from customers. The estimated credit loss allowance is recorded as general and administrative expenses on the Company's condensed consolidated statements of income. As of March 31, 2020, the Company reported $24,925 of accounts receivable, net of an allowance of $1,199.

Marketable securities

The Company holds investments in marketable securities, consisting principally of corporate bonds. The Company classifies marketable securities as available-for-sale in its current assets because they represent investments of cash available for current operations. The Company's available-for-sale investments are carried at estimated fair value with any unrealized gains and losses, net of taxes, included in accumulated other comprehensive income (loss) in stockholders' equity. Available-for-sale debt securities with an amortized cost basis in excess of estimated fair value are assessed to determine what amount of that difference, if any, is caused by expected credit losses. Expected credit losses on available-for-sale debt securities are recognized in interest and other income (expense), net on the Company's condensed consolidated statements of income, and any remaining unrealized losses, net of taxes, are included in accumulated other comprehensive income (loss) in stockholders' equity. The amount of credit losses recorded for the three months ended March 31, 2020 was not material. The Company has not recorded any impairment charge for unrealized losses in the periods presented. The Company determines realized gains or losses on sale of marketable securities on a specific identification method, and records such gains or losses as interest and other income (expense), net.

Use of Estimates

The preparation of the interim condensed consolidated financial statements in conformity with U.S. GAAP requires management to make estimates, judgments and assumptions. The Company's management believes that the estimates, judgments and assumptions used are reasonable based upon information available at the time they are made. These estimates, judgments and assumptions can affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the dates of the interim condensed consolidated financial statements, and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

NOTE 3: REVENUE RECOGNITION

Under ASC 606, "Revenue from Contracts with Customers," an entity recognizes revenue when or as it satisfies a performance obligation by transferring IP license or services to the customer, either at a point in time or over time. The Company recognizes most of its revenues at a point in time upon delivery of its IPs. The Company recognizes revenue over time on significant license customization contracts that are covered by contract accounting standards using cost inputs to measure progress toward completion of its performance obligations.

The following table includes estimated revenue expected to be recognized in future periods related to performance obligations that are unsatisfied or partially unsatisfied at the end of the reporting period. The estimated revenues do not include amounts of royalties or unexercised contract renewals:

	Remainder of 2020	2021	2022
License and related revenues	$ 12,708	$ 1,275	$ 907

Disaggregation of revenue:

The following table provides information about disaggregated revenue by primary geographical market, major product line and timing of revenue recognition (in thousands):

	Three months ended March 31, 2020 (unaudited)			Three months ended March 31, 2019 (unaudited)		
	Licensing and related revenues	Royalties	Total	Licensing and related revenues	Royalties	Total
Primary geographical markets						
United States	$ 2,782	$ 513	$ 3,295	$ 1,493	$ 286	$ 1,779
Europe and Middle East	1,059	4,044	5,103	1,382	1,960	3,342
Asia Pacific	10,654	4,563	15,217	8,136	3,712	11,848
Total	$ 14,495	$ 9,120	$ 23,615	$ 11,011	$ 5,958	$ 16,969
Major product/service lines						
Connectivity products (baseband for handset and other devices, Bluetooth, Wi-Fi, NB-IoT and SATA/SAS)	$ 10,927	$ 7,042	$ 17,969	$ 6,631	$ 5,620	$ 12,251
Smart sensing products (AI, sensor fusion, audio/sound and imaging and vision)	3,568	2,078	5,646	4,380	338	4,718
Total	$ 14,495	$ 9,120	$ 23,615	$ 11,011	$ 5,958	$ 16,969
Timing of revenue recognition						
Products transferred at a point in time	$ 11,038	$ 9,120	$ 20,158	$ 7,911	$ 5,958	$ 13,869
Products and services transferred over time	3,457	—	3,457	3,100	—	3,100
Total	$ 14,495	$ 9,120	$ 23,615	$ 11,011	$ 5,958	$ 16,969

Contract balances:

The following table provides information about trade receivables, unbilled receivables and contract liabilities from contracts with customers (in thousands):

	March 31, 2020 (unaudited)	December 31, 2019
Trade receivables	$ 16,426	$ 11,066
Unbilled receivables (associated with licensing and related revenue)	1,065	5,269
Unbilled receivables (associated with royalties)	7,434	11,972
Deferred revenues (short-term contract liabilities)	4,034	3,642

The Company receives payments from customers based upon contractual payment schedules; trade receivables are recorded when the right to consideration becomes unconditional, and an invoice is issued to the customer. Unbilled receivables associated with licensing and other include amounts related to the Company's contractual right to consideration for completed performance objectives not yet invoiced. Unbilled receivables associated with royalties are recorded as the Company recognizes revenues from royalties earned during the quarter, but not yet invoiced, either by actual sales data received from customers, or, when applicable, by the Company's estimation. Contract liabilities (deferred revenue) include payments received in advance of performance under the contract, and are realized with the associated revenue recognized under the contract.

During the three months ended March 31, 2020, the Company recognized $1,968 that was included in deferred revenues (short-term contract liability) balance at January 1, 2020.

NOTE 4: LEASES

The Company leases substantially all of its office space and vehicles under operating leases. The Company's leases have original lease periods expiring between 2020 and 2034. Many leases include one or more options to renew. The Company does not assume renewals in its determination of the lease term unless the renewals are deemed to be reasonably certain at lease commencement. The Company has an option to extend the lease of one of its principal office spaces until 2028, which is reasonably certain to be renewed. Lease payments included in the measurement of the lease liability comprise the following: the fixed non-cancelable lease payments, payments for optional renewal periods where it is reasonably certain the renewal period will be exercised, and payments for early termination options unless it is reasonably certain the lease will not be terminated early.

Under Topic 842 "Leases," all leases with durations greater than 12 months, including non-cancelable operating leases, are now recognized on the balance sheet. The aggregate present value of lease agreements are recorded as a long-term asset titled right-of-use assets. The corresponding lease liabilities are split between operating lease liabilities within current liabilities and operating lease liabilities within long-term liabilities.

(in thousands, except share data)

The following is a summary of weighted average remaining lease terms and discount rates for all of the Company's operating leases:

	March 31, 2020 (Unaudited)
Weighted average remaining lease term (years)	7.51
Weighted average discount rates	3.76%

Total operating lease cost during the three months ended March 31, 2020 was $598. Cash paid for amounts included in the measurement of operating lease liabilities was $592 during the three months ended March 31, 2020.

Maturities of lease liabilities are as follows:

The remainder of 2020	$	1,894
2021		1,788
2022		1,474
2023		1,265
2024		1,082
2025 and thereafter		4,187
Total undiscounted cash flows		11,690
Less imputed interest		1,527
Present value of lease liabilities	$	10,163

NOTE 5: MARKETABLE SECURITIES

The following is a summary of available-for-sale marketable securities:

	March 31, 2020 (Unaudited)			
	Amortized cost	**Gross unrealized gains**	**Gross unrealized losses**	**Fair value**
Available-for-sale - matures within one year:				
Corporate bonds	$ 17,049	$ 35	$ (155)	$ 16,929
	17,049	35	(155)	16,929
Available-for-sale - matures after one year through five years:				
Corporate bonds	51,586	195	(801)	50,980
	51,586	195	(801)	50,980
Total	$ 68,635	$ 230	$ (956)	$ 67,909

	December 31, 2019			
	Amortized cost	**Gross unrealized gains**	**Gross unrealized losses**	**Fair value**
Available-for-sale - matures within one year:				
Corporate bonds	$ 18,224	$ 16	$ (11)	$ 18,229
	18,224	16	(11)	18,229
Available-for-sale - matures after one year through five years:				
Corporate bonds	46,593	168	(123)	46,638
	46,593	168	(123)	46,638
Total	$ 64,817	$ 184	$ (134)	$ 64,867

(in thousands, except share data)

The following table presents gross unrealized losses and fair values for those investments that were in an unrealized loss position as of March 31, 2020 and December 31, 2019, and the length of time that those investments have been in a continuous loss position:

	Less than 12 months		12 months or greater	
	Fair value	Gross unrealized loss	Fair value	Gross unrealized loss
As of March 31, 2020 (unaudited)	$ 29,663	$ (820)	$ 8,219	$ (136)
As of December 31, 2019	$ 22,852	$ (102)	$ 14,231	$ (32)

As of March 31, 2020 and December 31, 2019, the allowance for credit losses was not material.

The following table presents gross realized gains and losses from sale of available-for-sale marketable securities:

	Three months ended March 31,	
	2020 (unaudited)	2019 (unaudited)
Gross realized gains from sale of available-for-sale marketable securities	$ 4	$ —
Gross realized losses from sale of available-for-sale marketable securities	$ (6)	$ (24)

NOTE 6: FAIR VALUE MEASUREMENT

FASB ASC No. 820, “Fair Value Measurements and Disclosures” defines fair value, establishes a framework for measuring fair value. Fair value is an exit price, representing the amount that would be received for selling an asset or paid for the transfer of a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or a liability. A three-tier fair value hierarchy is established as a basis for considering such assumptions and for inputs used in the valuation methodologies in measuring fair value:

Level I — Unadjusted quoted prices in active markets that are accessible on the measurement date for identical, unrestricted assets or liabilities;

Level II — Quoted prices in markets that are not active, or inputs that are observable, either directly or indirectly, for substantially the full term of the asset or liability; and

Level III — Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (supported by little or no market activity).

The Company measures its marketable securities and foreign currency derivative contracts at fair value. Marketable securities and foreign currency derivative contracts are classified within Level II as the valuation inputs are based on quoted prices and market observable data of similar instruments.

(in thousands, except share data)

The table below sets forth the Company's assets and liabilities measured at fair value by level within the fair value hierarchy. Assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

Description	March 31, 2020 (unaudited)	Level I (unaudited)	Level II (unaudited)	Level III (unaudited)
Assets:				
Marketable securities:				
Corporate bonds	$ 67,909	$ —	$ 67,909	$ —
Foreign exchange contracts	271	—	271	—
Liabilities:				
Foreign exchange contracts	$ 14	$ —	$ 14	$ —

Description	December 31, 2019	Level I	Level II	Level III
Assets:				
Marketable securities:				
Corporate bonds	64,867	—	64,867	—
Foreign exchange contracts	56	—	56	

NOTE 7: INTANGIBLE ASSETS, NET

		Three months ended March 31, 2020 (unaudited)			Year ended December 31, 2019		
	Weighted average amortization period (years)	Gross carrying amount	Accumulated amortization	Net	Gross carrying amount	Accumulated amortization	Net
Intangible assets –amortizable:							
Intangible assets related to the acquisition of RivieraWaves							
Customer relationships	4.5	$ 272	$ 272	$ —	$ 272	$ 272	$ —
Customer backlog	1.5	93	93	—	93	93	—
Core technologies	5.1	5,796	5,796	—	5,796	5,796	—
Intangible assets related to the acquisition of Hillcrest Labs business							
Customer relationships	4.4	3,518	611	2,907	3,518	395	3,123
Customer backlog	0.5	72	72	—	72	65	7
Core technologies	7.5	2,475	233	2,242	2,475	150	2,325
Intangible assets related to an investment in Immervision							
Core technologies	6.4	7,063	748	6,315	7,063	472	6,591
Intangible assets related to an investment in NB-IoT technologies							
NB-IoT technologies (*)	7.0	1,961	654	1,307	1,961	583	1,378
Total intangible assets		$ 21,250	$ 8,479	$ 12,771	$ 21,250	$ 7,826	$ 13,424

(*) During the first quarter of 2018, the Company entered into an agreement to acquire certain NB-IoT technologies in the amount of $2,800, of which, technologies valued at $600 has not been received. Of the $2,200, $210 has not resulted in cash outflows as of March 31, 2020. In addition, the Company participated in programs sponsored by the Hong Kong government for the support of the above investment, and as a result, the Company received during 2019 an amount of $239 related to the NB-IoT technologies, which was reduced from the gross carrying amount of intangible assets. The Company recorded the amortization cost of the NB-IoT technologies in "cost of revenues" on the Company's interim condensed consolidated statements of income (loss).

(in thousands, except share data)

Future estimated annual amortization charges are as follows:

2020	$ 1,935
2021	2,582
2022	2,581
2023	1,906
2024	1,852
2025 and thereafter	1,915
	$ 12,771

NOTE 8: GEOGRAPHIC INFORMATION AND MAJOR CUSTOMER DATA

a. Summary information about geographic areas:

The Company manages its business on the basis of one reportable segment: the licensing of intellectual property to semiconductor companies and electronic equipment manufacturers (see Note 1 for a brief description of the Company's business). The following is a summary of revenues within geographic areas:

	Three months ended March 31,	
	2020 (unaudited)	**2019 (unaudited)**
Revenues based on customer location:		
United States	$ 3,295	$ 1,779
Europe and Middle East (1)	5,103	3,342
Asia Pacific (2) (3) (4)	15,217	11,848
	$ 23,615	$ 16,969
(1) Germany	$ 3,964	$ 2,589
(2) China	$ 12,074	$ 7,243
(3) S. Korea	$ *)	$ 1,767
(4) Japan	$ *)	$ 2,647

*) Less than 10%

b. Major customer data as a percentage of total revenues:

The following table sets forth the customers that represented 10% or more of the Company's total revenues in each of the periods set forth below.

	Three months ended March 31,	
	2020 (unaudited)	**2019 (unaudited)**
Customer A	16%	21%
Customer B	*)	12%
Customer C	*)	12%
Customer D	*)	10%

*) Less than 10%

NOTE 9: NET LOSS PER SHARE OF COMMON STOCK

Basic net income (loss) per share is computed based on the weighted average number of shares of common stock outstanding during each period. Diluted net income (loss) per share is computed based on the weighted average number of shares of common stock outstanding during each period, plus dilutive potential shares of common stock considered outstanding during the period, in accordance with FASB ASC No. 260, "Earnings Per Share."

	Three months ended March 31,	
	2020 (unaudited)	**2019 (unaudited)**
Numerator:		
Net loss	$ (1,185)	$ (2,297)
Denominator (in thousands):		
Basic weighted-average common stock outstanding	22,421	21,917
Effect of stock -based awards	—	—
Diluted weighted average common stock outstanding	22,421	21,917
Basic net loss per share	$ (0.05)	$ (0.10)
Diluted net loss per share	$ (0.05)	$ (0.10)

The total number of shares related to the outstanding stock options excluded from the calculation of diluted net loss per share was 1,363,306 and 1,361,746 for the three months ended March 31, 2020 and 2019, respectively.

(in thousands, except share data)

NOTE 10: COMMON STOCK AND STOCK-BASED COMPENSATION PLANS

The Company grants stock options and stock appreciation rights (“SARs”) capped with a ceiling to employees and stock options to non-employee directors of the Company and its subsidiaries and provides the right to purchase common stock pursuant to the Company’s 2002 employee stock purchase plan to employees of the Company and its subsidiaries. The SAR unit confers the holder the right to stock appreciation over a preset price of the Company’s common stock during a specified period of time. When the unit is exercised, the appreciation amount is paid through the issuance of shares of the Company’s common stock. The ceiling limits the maximum income for each SAR unit. SARs are considered an equity instrument as it is a net share settled award capped with a ceiling (400% for SAR grants). The options and SARs granted under the Company’s stock incentive plans have been granted at the fair market value of the Company’s common stock on the grant date. Options and SARs granted to employees under stock incentive plans vest at a rate of 25% of the shares underlying the option after one year and the remaining shares vest in equal portions over the following 36 months, such that all shares are vested after four years. Options granted to non-employee directors vest 25% of the shares underlying the option on each anniversary of the option grant. A summary of the Company’s stock option and SAR activities and related information for the three months ended March 31, 2020, are as follows:

	Number of options and SAR units (1)	Weighted average exercise price	Weighted average remaining contractual term	Aggregate intrinsic-value
Outstanding as of December 31, 2019	642,253	$ 20.14	3.5	$ 4,718
Granted	—	—		
Exercised	(161,001)	17.55		
Forfeited or expired	—	—		
Outstanding as of March 31, 2020 (2)	481,252	$ 21.01	3.4	$ 2,524
Exercisable as of March 31, 2020 (3)	455,252	$ 20.59	3.2	$ 2,524

(1) The SAR units are convertible for a maximum number of shares of the Company’s common stock equal to 75% of the SAR units subject to the grant.

(2) Due to the ceiling imposed on the SAR grants, the outstanding amount equals a maximum of 452,564 shares of the Company’s common stock issuable upon exercise.

(3) Due to the ceiling imposed on the SAR grants, the exercisable amount equals a maximum of 426,564 shares of the Company’s common stock issuable upon exercise.

As of March 31, 2020, there was $11 of unrecognized compensation expense related to unvested stock options and SARs. This amount is expected to be recognized over the next 3 quarters of 2020.

Starting in the second quarter of 2015, the Company granted to employees, including executive officers, and non-employee directors, restricted stock units (“RSUs”) under the Company’s 2011 Stock Incentive Plan (the “2011 Plan”). A RSU award is an agreement to issue shares of the Company’s common stock at the time the award or a portion thereof vests. RSUs granted to employees generally vest in three equal annual installments starting on the first anniversary of the grant date. Until the end of 2017, RSUs granted to non-employee directors would generally vest in full on the first anniversary of the grant date. Starting in 2018, RSUs granted to non-employee directors would generally vest in two equal annual installments starting on the first anniversary of the grant date. The fair value of each RSU is the market value as determined by the closing price of the common stock on the day of grant. The Company recognizes compensation expenses for the value of its RSU awards, based on the straight-line method over the requisite service period of each of the awards.

On May 7, 2019, the Compensation Committee (the “Committee”) of the Board of Directors (the “Board”) of the Company approved, effective immediately, an amendment to the RSU award granted to the Company’s Chief Executive Officer (the “CEO”) on February 19, 2019, consisting of 30,000 RSUs that vest in a three-year period (the “Prior RSU Award”). The Committee and the CEO mutually agreed to amend the Prior RSU Award. In lieu of the Prior RSU Award, the CEO received (1) 10,000 time-based RSUs with the same original three-year vesting schedule starting with 1/3 on February 19, 2020, and (2) an opportunity to receive up to 24,000 performance-based stock units (“PSUs”) based on the Company’s achievement of the 2019 license and related revenue goal of $41 million that was approved by the Board (the “2019 License Revenue Target”). If the Company’s results equal 100% of the 2019 License Revenue Target, the CEO would receive 20,000 PSUs. If the Company’s results were between 90% to 99% of the 2019 License Revenue Target, the CEO would receive the same proportion of the 20,000 PSUs. If the Company’s results exceeded 100% of the 2019 License Revenue Target, every 1% increase of the 2019 License Revenue Target, up to 120%, would result in an increase of 1% of the 20,000 PSUs to be awarded to the CEO. In 2019, the Company achieved 116% of the 2019 License Revenue Target, so based on the PSU award conditions, the CEO received 23,200 PSUs. The PSUs vest in a three-year period, with 1/3 of the PSUs vested on February 19, 2020, and thereafter 1/3 of the remaining PSUs would vest on each of February 19, 2021 and February 19, 2022.

(in thousands, except share data)

On July 19, 2019, the Company issued a total of 52,000 RSUs to 22 employees who joined the Company in connection with the Company's acquisition of the Hillcrest Labs business. The RSUs were granted outside of the Company's existing equity plans and were granted as inducements to employment in accordance with NASDAQ Listing Rule 5635(c)(4). The RSUs were priced at $25.41, the fair market value on the grant date, and vest over three years, with 34% of the RSUs vesting after one year and the remaining vesting in equal portions over the following 24 months, such that all RSUs vest after three years, subject to the employee's continuous service through each vesting date.

On February 20, 2020, the Committee granted 17,045, 5,113, 4,545 and 4,545 PSUs to each of the Company's CEO, Executive Vice President, Worldwide Sales, Chief Financial Officer and Chief Operating Officer, respectively, pursuant to the 2011 Plan (collectively, the "Short-Term Executive PSUs"). The performance goals for the Short-Term Executive PSUs with specified weighting are as follows:

Weighting	Goals
50%	Vesting of the full 50% of the PSUs occurs if the Corporation achieves the 2020 license and related revenue amount in the budget approved by the Board (the "2020 License Revenue Target"). The vesting threshold is achievement of 90% of 2020 License Revenue Target. If the Corporation's actual result is above 90% but less than 99% of the 2020 License Revenue Target, 91% to 99% of the eligible PSUs would be subject to vesting. If the Corporation's actual result exceeds 100% of the 2020 License Revenue Target, every 1% increase of the 2020 License Revenue Target, up to 110%, would result in an increase of 2% of the eligible PSUs.
50%	Vesting of the full 50% of the PSUs occurs if the Corporation achieves positive total shareholder return whereby the return on the Corporation's stock for 2020 is greater than the S&P500 index. The vesting threshold is if the return on the Corporation's stock for 2020 is at least 90% of the S&P500 index. If the return on the Corporation's stock, in comparison to the S&P500, is above 90% but less than 99% of the S&P500 index, 91% to 99% of the eligible PSUs would be subject to vesting. If the return on the Corporation's stock exceeds 100% of the S&P500 index, every 1% increase in comparison to the S&P500 index, up to 110%, would result in an increase of 2% of the eligible PSUs.

Additionally, PSUs representing an additional 20%, meaning an additional 3,410, 1,023, 909 and 909 PSUs, would be eligible for vesting for each of the Company's CEO, Executive Vice President, Worldwide Sales, Chief Financial Officer and Chief Operating Officer, respectively, if the performance goals set forth above are exceeded.

Subject to achievement of the thresholds for the above performance goals for 2020, the Short-Term Executive PSUs vest 33.4% on February 20, 2021, 33.3% on February 20, 2022 and 33.3% on February 20, 2023.

Also, on February 20, 2020, the Committee granted 56,818, 35,511, 28,409 and 28,409 long-term PSUs to each of the Company's CEO, Executive Vice President, Worldwide Sales, Chief Financial Officer and Chief Operating Officer, respectively, pursuant to the 2011 Plan (collectively, the "Long-Term Executive PSUs"). The Long-Term Executive PSUs shall vest upon the achievement of either of the following performance goals:

- If the Company's non-GAAP EPS on or before the end of 2022 is tripled from the Company's non-GAAP EPS in 2018.
- If the Company's market cap reaches at least $1 billion for at least 30 days of trading based on the market cap information set forth on Yahoo Finance.

(in thousands, except share data)

Furthermore, on February 20, 2020, the Committee granted an aggregate of 18,500 PSUs to certain key employees of the Company. The PSUs shall vest over three years upon the achievement of the following performance goals, with 34% of the PSUs vesting after one year and the remaining vesting in equal portions over the following 24 months, such that all PSUs shall vest after three years, subject to the employee's continuous service through each vesting date:

Weighting	Goals
50%	Achievement of specified bookings in 2020 (“Specified Bookings”) for licensing and related revenues associated with certain of the Corporation’s technologies (the “Specified Booking Target”) in specific geographic region. If 90% of the Specified Booking Target is achieved, 90% of the bonus amount under this component would be payable with every 1% increase resulting in a corresponding increase in the bonus amount under this component.
30%	Execution of definitive license agreements for pre-determined software with at least five of seven original equipment manufacturers. If five such agreements are executed, 71% of the bonus amount under this component, which is subject to a 6% weighting, would be payable. If six agreements are executed, 86% of the bonus amount under this component, which is subject to a 6% weighting, would be payable.
20%	Execution of definitive license agreements with at least two customers in a predetermined strategic market.

A summary of the Company’s RSU and PSU activities and related information for the three months ended March 31, 2020, are as follows:

	Number of RSUs and PSUs	Weighted Average Grant-Date Fair Value
Unvested as of December 31, 2019	732,564	$ 30.11
Granted	386,237	27.46
Vested	(222,006)	32.21
Forfeited or expired	(14,741)	28.74
Unvested as of March 31, 2020	882,054	$ 28.45

As of March 31, 2020, there was $21,160 of unrecognized compensation expense related to unvested RSUs and PSUs. This amount is expected to be recognized over a weighted-average period of 1.5 years.

The following table shows the total equity-based compensation expense included in the interim condensed consolidated statements of loss:

	Three months ended March 31,	
	2020 (unaudited)	2019 (unaudited)
Cost of revenue	$ 158	$ 136
Research and development, net	1,623	1,362
Sales and marketing	451	356
General and administrative	875	562
Total equity-based compensation expense	$ 3,107	$ 2,416

(in thousands, except share data)

The fair value for rights to purchase shares of common stock under the Company's employee stock purchase plan was estimated on the date of grant using the following assumptions:

	Three months ended March 31, 2020 (unaudited)	Three months ended March 31, 2019 (unaudited)
Expected dividend yield	0%	0%
Expected volatility	32% - 42%	43%
Risk-free interest rate	1.5% - 1.9%	2.5%
Contractual term of up to (months)	24	24

NOTE 11: DERIVATIVES AND HEDGING ACTIVITIES

The Company follows the requirements of FASB ASC No. 815," Derivatives and Hedging" which requires companies to recognize all of their derivative instruments as either assets or liabilities in the statement of financial position at fair value. The accounting for changes in fair value (i.e., gains or losses) of a derivative instrument depends on whether it has been designated and qualifies as part of a hedging transaction and further, on the type of hedging transaction. For those derivative instruments that are designated and qualify as hedging instruments, a company must designate the hedging instrument, based upon the exposure being hedged, as a fair value hedge, cash flow hedge, or a hedge of a net investment in a foreign operation. Due to the Company's global operations, it is exposed to foreign currency exchange rate fluctuations in the normal course of its business. The Company's treasury policy allows it to offset the risks associated with the effects of certain foreign currency exposures through the purchase of foreign exchange forward or option contracts ("Hedging Contracts"). The policy, however, prohibits the Company from speculating on such Hedging Contracts for profit. To protect against the increase in value of forecasted foreign currency cash flow resulting from salaries paid in currencies other than the U.S. dollar during the year, the Company instituted a foreign currency cash flow hedging program. The Company hedges portions of the anticipated payroll of its non-U.S. employees denominated in the currencies other than the U.S. dollar for a period of one to twelve months with Hedging Contracts. Accordingly, when the dollar strengthens against the foreign currencies, the decline in present value of future foreign currency expenses is offset by losses in the fair value of the Hedging Contracts. Conversely, when the dollar weakens, the increase in the present value of future foreign currency expenses is offset by gains in the fair value of the Hedging Contracts. These Hedging Contracts are designated as cash flow hedges.

For derivative instruments that are designated and qualify as a cash flow hedge (i.e., hedging the exposure to variability in expected future cash flows that is attributable to a particular risk), the gain or loss on the derivative instrument is reported as a component of other comprehensive income (loss) and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. As of March 31, 2020 and December 31, 2019, the notional principal amount of the Hedging Contracts to sell U.S. dollars held by the Company was $11,550 and $5,500, respectively.

The fair value of the Company's outstanding derivative instruments is as follows:

	March 31, 2020 (unaudited)	December 31, 2019
Derivative assets:		
Derivatives designated as cash flow hedging instruments:		
Foreign exchange option contracts	$ —	$ 14
Foreign exchange forward contracts	271	42
Total	$ 271	$ 56
Derivative liabilities:		
Derivatives designated as cash flow hedging instruments:		
Foreign exchange option contracts	$ 14	$ —
Total	$ 14	$ —

(in thousands, except share data)

The increase (decrease) in unrealized gains (losses) recognized in “accumulated other comprehensive gain (loss)” on derivatives, before tax effect, is as follows:

	Three months ended March 31,	
	2020 (unaudited)	2019 (unaudited)
Derivatives designated as cash flow hedging instruments:		
Foreign exchange option contracts	$ (28)	$ 16
Foreign exchange forward contracts	229	190
	$ 201	$ 206

The net (gains) losses reclassified from “accumulated other comprehensive gain (loss)” into income are as follows:

	Three months ended March 31,	
	2020 (unaudited)	2019 (unaudited)
Derivatives designated as cash flow hedging instruments:		
Foreign exchange option contracts	$ —	$ —
Foreign exchange forward contracts	—	(73)
	$ —	$ (73)

The Company recorded in cost of revenues and operating expenses a net income of $73 during the three months ended March 31, 2019 related to its Hedging Contracts.

NOTE 12: ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The following tables summarize the changes in accumulated balances of other comprehensive income (loss), net of taxes:

	Three months ended March 31, 2020 (unaudited)			Three months ended March 31, 2019 (unaudited)		
	Unrealized gains (losses) on available-for-sale marketable securities	Unrealized gains (losses) on cash flow hedges	Total	Unrealized gains (losses) on available-for-sale marketable securities	Unrealized gains (losses) on cash flow hedges	Total
Beginning balance	$ 45	$ 49	$ 94	$ (1,046)	$ (68)	$ (1,114)
Other comprehensive income (loss) before reclassifications	(621)	177	(444)	552	181	733
Amounts reclassified from accumulated other comprehensive income (loss)	1	—	1	18	(64)	(46)
Net current period other comprehensive income (loss)	(620)	177	(443)	570	117	687
Ending balance	$ (575)	$ 226	$ (349)	$ (476)	$ 49	$ (427)

(in thousands, except share data)

The following table provides details about reclassifications out of accumulated other comprehensive income (loss):

Details about Accumulated Other Comprehensive Income (Loss) Components	Amount Reclassified from Accumulated Other Comprehensive Income (Loss)		Affected Line Item in the Statements of Income (Loss)
	Three months ended March 31,		
	2020 (unaudited)	2019 (unaudited)	
Unrealized gains (losses) on cash flow hedges	$ —	$ 2	Cost of revenues
	—	64	Research and development
	—	2	Sales and marketing
	—	5	General and administrative
	—	73	Total, before income taxes
	—	9	Income tax expense (benefit)
	—	64	Total, net of income taxes
Unrealized gains (losses) on available-for-sale marketable securities	(2)	(24)	Financial income (loss), net
	(1)	(6)	Income tax expense (benefit)
	(1)	(18)	Total, net of income taxes
	$ (1)	$ 46	Total, net of income taxes

NOTE 13: SHARE REPURCHASE PROGRAM

In February 2020, the Board authorized the repurchase by the Company of an additional 700,000 shares of common stock pursuant to the Company's share repurchase program.

During the first quarter of 2020, the Company repurchased 202,392 shares of common stock at an average purchase price of $23.62 per share for an aggregate purchase price of $4,780. During the first quarter of 2019, the Company repurchased 91,303 shares of common stock at an average purchase price of $27.77 per share for an aggregate purchase price of $2,536. As of March 31, 2020, 497,608 shares of common stock remained available for repurchase pursuant to the Company's share repurchase program.

The repurchases of common stock are accounted for as treasury stock, and result in a reduction of stockholders' equity. When treasury shares are reissued, the Company accounts for the reissuance in accordance with FASB ASC No. 505-30, "Treasury Stock" and charges the excess of the repurchase cost over issuance price using the weighted average method to retained earnings. The purchase cost is calculated based on the specific identified method. In the case where the repurchase cost over issuance price using the weighted average method is lower than the issuance price, the Company credits the difference to additional paid-in capital.

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

You should read the following discussion together with the unaudited financial statements and related notes appearing elsewhere in this quarterly report. This discussion contains forward-looking statements that involve risks and uncertainties. Any or all of our forward-looking statements in this quarterly report may turn out to be wrong. These forward-looking statements can be affected by inaccurate assumptions we might make or by known or unknown risks and uncertainties. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. Factors which could cause actual results to differ materially include those set forth under in Part II – Item 1A – "Risk Factors," as well as those discussed elsewhere in this quarterly report. See "Forward-Looking Statements."

Moreover, the full impact of the COVID-19 pandemic continues to evolve as of the date of this report. As such, it is uncertain as to the full magnitude that the pandemic will have on our financial condition, liquidity, and future results of operations. Management is actively monitoring the global situation on the company's financial condition, liquidity, operations, suppliers, industry, and workforce. Given the daily evolution of the COVID-19 pandemic and the global responses to curb its spread, we are not able to estimate the full effect of the COVID-19 outbreak on the company's results of operations, financial condition or liquidity for fiscal year 2020. The following discussions are subject to the future effects of the COVID-19 pandemic.

BUSINESS OVERVIEW

The financial information presented in this quarterly report includes the results of CEVA, Inc. and its subsidiaries.

Headquartered in Mountain View, California, CEVA is the leading licensor of wireless connectivity and smart sensing technologies. We offer a combination of processors and software as licensable Intellectual Property (IP) platforms for a range of applications, including cellular, short-range wireless connectivity, AI, computer vision, voice, audio and sensor fusion. These IP platforms are licensed to customers who embed them into their System-on-Chip (SoC) and microcontroller designs to create power-efficient, intelligent and connected devices. Our customers include many of the world's leading semiconductor and original equipment manufacturer (OEM) companies targeting a wide variety of IoT end markets, including mobile, PC, consumer, automotive, robotics, industrial and medical devices.

Our ultra-low-power signal processing IPs are enabled by our own Digital Signal Processors (DSP) or an ARM / RISC-V CPU and are deployed in devices for smart sensing and connectivity workloads. Our smart sensing portfolio includes advanced technologies for cameras, microphones and inertial measurement unit (IMU). Our camera platforms incorporate DSPs and software technologies for AI, computer vision and imaging. Our microphone technologies incorporate DSPs and software technologies for noise cancellation, echo cancellation and voice recognition. Our IMU technologies include ARM-based software supporting sensor processing of accelerometers, gyroscopes, magnetometers, optical flow and time-of-flight (ToF), and sensor fusion for IMU and environmental sensor-enabled devices. Our connectivity portfolio includes LTE and 5G mobile broadband platforms for handsets and base station RAN, NB-IoT for low bit rate cellular and Bluetooth and Wi-Fi technologies for wireless IoT.

We believe that our licensing business is robust with a diverse customer base and a myriad of target markets. Our state-of-the-art technology has shipped in more than 11 billion chips to date for a wide range of end markets. Every second, thirty devices sold worldwide are powered by CEVA.

We believe the adoption of our wireless connectivity and smart sensing products beyond our incumbency in the handset baseband market continues to progress. As a testament to this trend, during the first quarter of 2020, we concluded thirteen licensing deals, all of which are for base station and IoT applications. Of note, we continue to experience strong demand for all of our technologies, especially for 5G and Wi-Fi 6 applications. In the first quarter of 2020, we concluded four 5G agreements, two of which were with key base station OEMs for their 5G phase II ASICs. The third 5G deal was for fixed wireless access, a new growth area for 5G, displacing traditional broadband in the home. We also concluded two agreements for our latest generation Wi-Fi 6 platform. Wi-Fi 6 devices are expected to reach more than 2.2 billion units by 2024 according to research from Cisco. This data is indicative of the continued traction our base station and IoT (formerly referred to as non-handset baseband) customers are gaining with our signal processing IPs.

We believe the following key elements represent significant growth drivers for the company:

- CEVA is an incumbent player in the largest space in the semiconductor industry – mobile handsets. Our customers use our technologies for baseband and voice processing. Our customers currently have a solid market share, in particular for premium-tier and low-tier LTE smartphones and feature phones.

- The royalty we derive from premium-tier smartphones is higher on average than that of mid and low-tier smartphones due to more DSP content that bears a higher royalty average selling price ("ASP"). Looking ahead, we believe our PentaG platform for 5G handsets and other 5G endpoints is the most advanced cellular baseband IP in the industry today and puts us in a strong position to power 5G smartphones, fixed wireless and a range of connected devices such robots, cars, smart cities and other industrial applications.

- Our specialization and technological edge in signal processing platforms for 5G base station RAN, including Remote Radio Units (RRU) and Base Band Units (BBU), put us in a strong position to capitalize on the growing 5G RAN across its new form factors such as V-RAN, D-RAN, C-RAN and O-RAN, as well address mass wireless backhaul.

- Our broad Bluetooth, Wi-Fi and NB-IoT IPs allow us to expand further into IoT applications and substantially increase our overall addressable market and value-add. Our addressable market size for Bluetooth, Wi-Fi and NB-IoT is expected to be more than 9 billion devices annually by 2022 based on ABI Research and Ericsson Mobility Reports.

- The growing market potential for voice assisted devices, as voice is becoming a primary user interface for IoT applications, including handsets, True Wireless Stereo (TWS) earbuds and headsets, smart TV, smart home and consumer devices, offers an additional growth segment for us. To better address this market, we introduced our WhisPro speech recognition technology and ClearVox voice input software that are offered in conjunction with our audio/voice DSPs. In addition, we also introduced our SensLink framework that enables smooth integration of audio, Bluetooth and sensors. SensLink is a strong asset to address applications like TWS that need all these components. These highly-integrated platforms, plus our proven track record in audio/voice processing and in connectivity with more than 7 billion audio chips shipped to date, put us in a strong position to power audio and voice roadmaps across this new range of addressable end markets.

- Our CEVA-XM, family of imaging and vision platforms and deep learning capabilities, provide highly compelling offerings for any camera-enabled device such as smartphones, automotive safety (ADAS), autonomous driving (AD), drones, robotics, security and surveillance, augmented reality (AR) and virtual reality (VR), drones, and signage. Per research from Yole Développement, camera-enabled devices incorporating computer vision and AI are expected to exceed 1 billion units by 2022. We have already signed more than fifty licensing agreements for our imaging and vision DSPs across those markets, where our customers can add camera-related enhancements such as smarter autofocus, better picture using super resolution algorithms, and better image capture in low-light environments. Other customers can add video analytics support to enable new services like augmented reality, gesture recognition and advanced safety capabilities in cars. This transformation in vision processing and neural net software are opportunities for us to expand our footprint and content in smartphones, drones, consumer cameras, surveillance, automotive ADAS and industrial IoT applications.

- Neural networks are increasingly being deployed in a wide range of camera-based devices in order to make these devices “smarter.” To address this significant and lucrative opportunity, we recently introduced NeuPro-S™ - a second-generation family of AI processors for deep learning at the edge. These self-contained vision/AI processors bring the power of deep learning to the device, without relying on connectivity to the cloud. We believe this market opportunity for AI at the edge is on top of our existing product lines and represents new licensing and royalty drivers for the company in the coming years.

- The role of sensors and their proliferation in almost every electronics device in order to make these devices “contextually aware” is a new area we are addressing. To this effect, we recently introduced a new DSP/AI architecture dedicated to processing and fusing the data generated by multiple sensors, including camera, Radar, LiDAR, Time-of-Flight (ToF), microphones and IMU. SensPro™ is the world’s first high performance sensor processor specifically for multi-sensor processing that we hope will open up new licensing and royalty opportunities and markets for us.

- Our Hillcrest Labs sensor fusion business unit allows us to address an important technology for smart sensing, in addition to our existing portfolio for camera-based computer vision and AI processing, and microphone-based sound processing. MEMS-based inertial and environmental sensors are used in an increasing number of devices, including robotics, smartphones, laptops, tablets, TWS earbuds, headsets, remote controls and many other consumer and industrial devices. Hillcrest Labs’ innovative and proven MotionEngine™ software supports a broad range of merchant sensor chips and is licensed to OEMs and semiconductor companies that can run the software on CEVA DSPs or a variety of RISC CPUs. The MotionEngine software expands and complements CEVA’s smart sensing technology. Hillcrest Labs’ technology has already shipped in more than 100 million devices, indicative of its market traction and excellence. Along with our SensPro sensor fusion processors, our licensees can now benefit from our capabilities as a complete, one-stop-shop for processing all classes and types of sensors.

As a result of our diversification strategy beyond baseband for handsets and our progress in addressing those new markets under the base station and IoT umbrella, we expect significant growth in royalty revenues derived from base station and IoT applications over the next few years, which will be comprised of a range of different products at different royalty ASPs, spanning from high volume Bluetooth to high value sensor fusion and base station RAN. The royalty ASP of our other products will be in between the two ranges.

At our first investor and analyst day held on January 14, 2019 in New York City, we presented our anticipated financial metrics for year 2022. We forecasted that our licensing and related revenue in 2022 will grow approximately 10% to 20% from the 2018 levels, our royalty revenue will be approximately two times greater than 2018 levels, and our non-GAAP net income will be approximately three times greater than 2018 levels.

COVID-19

An outbreak of a new strain of coronavirus, COVID-19, occurred in China in December 2019 and has spread globally. The Center for Disease Control ("CDC") and World Health Organization ("WHO") have recognized this outbreak as a pandemic, which has caused shutdowns to businesses and cities worldwide while disrupting supply chains, business operations, travel, consumer confidence and business sentiment. In March, in compliance with global social distancing and lockdown regulations aimed to slow the spread of COVID-19, we smoothly moved most of our employees worldwide to a work-from-home model. We are following guidelines established by the CDC and WHO and orders issued by applicable governments where we operate. We have taken a number of precautionary health and safety measures to safeguard our employees while maintaining business continuity. We are monitoring and assessing orders issued by applicable governments to ensure compliance with evolving COVID-19 guidelines.

Throughout the COVID-19 outbreak, we have continued operations. We are encouraged by the persistent design activities of our customers and interests in our products. We are focused on continuing to expand our business to capitalize on the momentum we gained last year. While the impact from COVID-19 on our financial results for the first quarter of 2020 was relatively insignificant as set forth in the below section discussing the results of operations for the first quarter of 2020, we are currently unable to determine or predict the nature, duration or scope of the overall impact the COVID-19 pandemic will have on our business, results of operations, liquidity or capital resources for the reminder of the year. By the end of the first quarter, and to larger extent in the second quarter, demand for consumer electronic products has softened due to social distancing and shelter-in-place restrictions. As of the date of this filing, significant uncertainty exists concerning the magnitude of the impact and duration of the COVID-19 pandemic. While we are confident about our licensing pipeline, we may face some near-term softness, mainly related to a shortfall in consumer spending and its implications on demand for consumer electronic products. As a result, the nature of our royalty revenue for 2020 is less certain due to the COVID-19 pandemic.

In light of the uncertain and rapidly evolving situation relating to the COVID-19 pandemic, we have taken a number of precautionary measures to manage our resources conservatively to mitigate the adverse impact of the pandemic. We will continue to closely monitor our exposure levels and align them to the dynamics we will experience in the coming months. We will assess our business during the crisis to make strategic decisions for our business in the best interests of stockholders.

RESULTS OF OPERATIONS

Total Revenues

Total revenues were $23.6 million for the first quarter of 2020, representing an increase of 39% as compared to the corresponding period in 2019. For the first quarter of 2020, the increase was due to both higher licensing and related revenues and higher royalties revenues in comparison to the corresponding period in 2019.

Five largest customers accounted for 45% of our total revenues for the first quarter of 2020 as compared to 63% for the comparable period in 2019. One customer accounted for 16% of our total revenues for the first quarter of 2020, as compared to four customers that accounted for 21%, 12%, 12% and 10% of our total revenues for the first quarter of 2019. Sales to Spreadtrum represented 9.6% of our total revenues for the first quarter of 2020, as compared to 12% for the comparable period in 2019 Generally, the identity of our other customers representing 10% or more of our total revenues varies from period to period, especially with respect to our licensing customers as we generate licensing revenues generally from new customers on a quarterly basis. With respect to our royalty revenues, three royalty paying customers each represented 10% or more of our total royalty revenues for both the first quarter of 2020 and 2019, and collectively represented 70% of our total royalty revenues for both the first quarter of 2020 and 2019. We expect that a significant portion of our future revenues will continue to be generated by a limited number of customers. The concentration of our customers is explainable in part by consolidation in the semiconductor industry.

The following table sets forth the products and services as percentages of our total revenues for each of the periods set forth below:

	First Quarter 2020	First Quarter 2019
Connectivity products	76%	72%
Smart sensing products	24%	28%

Licensing and Related Revenues

Licensing and related revenues were $14.5 million for the first quarter of 2020, representing an increase of 32% as compared to the corresponding period in 2019. The increase in licensing and related revenues for the first quarter of 2020 mainly reflected higher revenues from our Bluetooth IP. In the first quarter of 2020, we concluded thirteen licensing deals, all of which are for base station and IoT applications. We remain focused on executing licensing agreements and gaining key customer adoptions.

Of the thirteen license agreements concluded during the quarter, ten were for connectivity and three were for smart sensing. Three out of the thirteen deals were with first time customers. Target applications for our technologies include 5G RAN, 5G fixed wireless access, 5G backhaul, cellular V2X, true wireless stereo earbuds, autonomous drones, and voice controlled for a range of smart home and IoT devices. Overall, we continue to encounter robust demand for our products for the second quarter of 2020 and are working with new and existing customers to assist with their technology needs during the COVID-19 pandemic.

Licensing and related revenues accounted for 61% of our total revenues for the first quarter of 2020, as compared to 65% for the comparable period of 2019.

Royalty Revenues

Royalty revenues were $9.1 million for the first quarter of 2020, representing an increase of 53% as compared to the corresponding period in 2019. Royalty revenues accounted for 39% of our total revenues for the first quarter of 2020, as compared to 35% for the comparable period of 2019. The increase in royalty revenues for the first quarter of 2020 reflects revenues from our Hillcrest Labs sensor fusion business and the introduction of a new low cost model from a leading smartphone company.

Our customers reported sales of 261 million chipsets incorporating our technologies for the first quarter of 2020, an increase of 49% from the corresponding period in 2019 for actual shipments reported.

The five largest royalty-paying customers accounted for 79% of our total royalty revenues for the first quarter of 2020, as compared to 81% for the comparable period of 2019.

Geographic Revenue Analysis

	First Quarter 2020			First Quarter 2019		
	(in millions, except percentages)					
United States	$	3.3	*14%*	$	1.8	*10%*
Europe and Middle East (1)	$	5.1	*22%*	$	3.3	*20%*
Asia Pacific (2) (3) (4)	$	15.2	*64%*	$	11.8	*70%*
(1) Germany	$	4.0	*17%*	$	2.6	*15%*
(2) China	$	12.1	*51%*	$	7.2	*43%*
(3) S. Korea		*)	*)	$	1.8	*10%*
(4) Japan		*)	*)	$	2.6	*16%*

*) Less than 10%.

Due to the nature of our license agreements and the associated potential large individual contract amounts, the geographic split of revenues both in absolute dollars and percentage terms generally varies from quarter to quarter.

Cost of Revenues

Cost of revenues was $2.8 million for the first quarter of 2020, as compared to $2.0 million for the comparable period of 2019. Cost of revenues accounted for 12% of our total revenues for both the first quarter of 2020 and 2019. The increase for the first quarter of 2020 principally reflected higher customization work for our licensees, higher salaries and related costs (partially due to first time salary and related costs associated with the Hillcrest Labs employees) and higher payments to the Israeli Innovation Authority of the Ministry of Economy and Industry in Israel (the "IIA"). Included in cost of revenues for the first quarter of 2020 was a non-cash equity-based compensation expense of $158,000, as compared to $136,000 for the comparable period of 2019.

Gross Margin

Gross margin was 88% for both the first quarter of 2020 and 2019.

Operating Expenses

Total operating expenses were $22.5 million for the first quarter of 2020, as compared to $17.9 million for the comparable period of 2019. The net increase in total operating expenses for the first quarter of 2020 principally reflected (1) higher salary and employee-related costs, mainly due to higher headcount, and the inclusion of salary and related costs associated with the Hillcrest Labs employees for the first quarter of 2020, which costs were not incurred for the first quarter of 2019 as the acquisition of the Hillcrest Labs business was consummated in July 2019, (2) lower research grants received from the IIA, (3) higher allowance for doubtful accounts, and (4) higher non-cash equity-based compensation expenses.

Research and Development Expenses, Net

Our research and development expenses, net, were $15.1 million for the first quarter of 2020, as compared to $12.3 million for the comparable period of 2019. The net increase for the first quarter of 2020 principally reflected (1) higher salary and employee-related costs, mainly due to higher headcount, and the inclusion of salary and related costs associated with the Hillcrest Labs employees for the first quarter of 2020, and (2) lower research grants received, mainly from the IIA. Included in research and development expenses for the first quarter of 2020 were non-cash equity-based compensation expenses of $1,623,000, as compared to $1,362,000 for the comparable period of 2019. Research and development expenses as a percentage of our total revenues were 64% for the first quarter of 2020, as compared to 73% for the comparable period of 2019. The percentage decrease for the first quarter of 2020 as compared to the comparable period of 2019 was due to higher total revenues for the first quarter of 2020 as compared to the comparable period of 2019, offset by the same reasons as set forth above for the increase in research and development expenses in absolute dollars for the comparable periods of 2020 and 2019.

The number of research and development personnel was 298 at March 31, 2020, as compared to 265 at March 31, 2019.

We anticipate that our research and development expenses will continue to increase in 2020, partially due to a full year of expenses associated with the Hillcrest Labs business

Sales and Marketing Expenses

Our sales and marketing expenses were $3.2 million for the first quarter of 2020, as compared to $3.0 million for the comparable period of 2019. The increase for the first quarter of 2020 primarily reflected higher salary and employee-related costs, partially offset by lesser travel and marketing activities and events due to COVID-19. Included in sales and marketing expenses for the first quarter of 2020 were non-cash equity-based compensation expenses of $451,000, as compared to $356,000 for the comparable period of 2019. Sales and marketing expenses as a percentage of our total revenues were 13% for the first quarter of 2020, as compared to 18% for the comparable period of 2019.

The total number of sales and marketing personnel was 34 at March 31, 2020, as compared to 32 at March 31, 2019.

General and Administrative Expenses

Our general and administrative expenses were $3.7 million for the first quarter of 2020, as compared to $2.3 million for the comparable period of 2019. The increase for the first quarter of 2020 primarily reflected higher allowance for doubtful accounts and higher non-cash equity-based compensation expenses. Included in general and administrative expenses for the first quarter of 2020 were non-cash equity-based compensation expenses of $875,000, as compared to $562,000 for the comparable period of 2019. General and administrative expenses as a percentage of our total revenues were 16% for the first quarter of 2020, as compared to 14% for the comparable period of 2019. The percentage increase for the first quarter of 2020 was due to the same reasons as set forth above for the increase in general and administrative expenses in absolute dollars, as well as higher total revenues for the first quarter of 2020, as compared to the comparable period of 2019.

The number of general and administrative personnel was 33 at March 31, 2020, as compared to 31 at March 31, 2019.

Amortization of intangible assets

Our amortization charges was $0.6 million for the first quarter of 2020, as compared to $0.2 million for the comparable period of 2019. The amortization charges for the first quarter of 2020 were incurred in connection with the amortization of intangible assets associated with (1) the acquisition of the Hillcrest Labs business in July 2019, and (2) a technology investment in Immervision in August 2019. The amortization charges for the first quarter of 2019 were incurred in connection with the amortization of intangible assets associated with the acquisition of RivieraWaves. For more information about our intangible assets, see Notes 7 to the interim condensed consolidated financial statements for the three months ended March 31, 2020.

Financial Income, Net (in millions)

	First Quarter 2020	First Quarter 2019
Financial income, net	$ 0.83	$ 0.80
of which:		
Interest income and gains and losses from marketable securities, net	$ 0.85	$ 0.93
Foreign exchange loss	$ (0.02)	$ (0.13)

Financial income, net, consists of interest earned on investments, gains and losses from sale of marketable securities, accretion (amortization) of discounts (premiums) on marketable securities and foreign exchange movements.

The decrease in interest income and gains and losses from marketable securities, net, during the first quarter of 2020 principally reflected lower combined cash, bank deposits and marketable securities balances held (mainly as a result of the acquisition of the Hillcrest Labs business and the technology investment in Immervision during the third quarter of 2019).

We review our monthly expected major non-U.S. dollar denominated expenditures and look to hold equivalent non-U.S. dollar cash balances to mitigate currency fluctuations. This has resulted in a foreign exchange loss of $0.02 million for the first quarter of 2020, as compared to foreign exchange loss of $0.13 million for the comparable period of 2019.

Provision for Income Taxes

Our income tax expenses was $0.4 million for the first quarter of 2020, as compared to income tax expenses of $0.2 million for the comparable period of 2019.

We are subject to income and other taxes in the United States and numerous foreign jurisdictions. Our domestic and foreign tax liabilities are dependent on the jurisdictions in which profits are determined to be earned and taxed. Additionally, the amount of taxes paid is subject to our interpretation of applicable tax laws in the jurisdictions in which we operate. A number of factors influence our effective tax rate, including changes in tax laws and treaties, as well as the interpretation of existing laws and rules. Federal, state, and local governments and administrative bodies within the United States, and other foreign jurisdictions have implemented, or are considering, a variety of broad tax, trade, and other regulatory reforms that may impact us. For example, the Tax Cuts and Jobs Act (the "U.S. Tax Reform") enacted on December 22, 2017 resulted in changes to our U.S. corporate tax rate, our U.S. deferred income taxes, and the taxation of foreign earnings. It is not currently possible to accurately determine the potential comprehensive impact of these or future changes in tax laws, but these changes could have a material impact on our business and financial condition.

We have significant operations in Israel, France and the Republic of Ireland. A substantial portion of our taxable income is generated in Israel. Currently, our Israeli and Irish subsidiaries are taxed at rates substantially lower than U.S. tax rates.

Our Irish subsidiary qualified for a 12.5% tax rate on its trade. Interest income generated by our Irish subsidiary is taxed at a rate of 25%. Our French subsidiary qualified for a 28.0% tax rate for all taxable profits.

Our Israeli subsidiary is entitled to various tax benefits as a technological enterprise. In December 2016, the Economic Efficiency Law (Legislative Amendments for Applying the Economic Policy for the 2017 and 2018 Budget Years), 2016, which includes the Amendment to the Law for the Encouragement of Capital Investments, 1959 (Amendment 73) (the "Amendment"), was published. The Amendment, among other things, prescribes special tax tracks for technological enterprises, which are subject to rules that were issued by the Minister of Finance in April 2017.

The new tax track under the Amendment, which is applicable to our Israeli subsidiary, is the "Technological Preferred Enterprise." Technological Preferred Enterprise is an enterprise for which total consolidated revenues of its parent company and all subsidiaries are less than 10 billion New Israeli Shekel ("NIS"). A Technological Preferred Enterprise, as defined in the Amendment, that is located in the center of Israel (where our Israeli subsidiary is currently located), is taxed at a rate of 12% on profits deriving from intellectual property. Any dividends distributed to "foreign companies," as defined in the Amendment, deriving from income from technological enterprises will be taxed at a rate of 4%. We will apply the Technological Preferred Enterprise tax track for our Israeli subsidiary from tax year 2020 and onwards.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles in the United States. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosures. We evaluate our estimates and assumptions on an ongoing basis. Our estimates are based on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Our actual results could differ from these estimates.

We believe that the assumptions and estimates associated with revenue recognition, fair value of financial instruments, equity-based compensation and income taxes have the greatest potential impact on our consolidated financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

See our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on February 28, 2020, for a discussion of additional critical accounting policies and estimates. There have been no changes in our critical accounting policies as compared to what was previously disclosed in the Annual Report on Form 10-K for the year ended December 31, 2019.

LIQUIDITY AND CAPITAL RESOURCES

As of March 31, 2020, we had approximately $22.9 million in cash and cash equivalents, $58.5 million in short term bank deposits, $67.9 million in marketable securities, and $1.3 million in long term bank deposits, totaling $150.6 million, as compared to $150.0 million at December 31, 2019.

Out of total cash, cash equivalents, bank deposits and marketable securities of $150.6 million, $132.1 million was held by our foreign subsidiaries. Our intent is to permanently reinvest earnings of our foreign subsidiaries and our current operating plans do not demonstrate a need to repatriate foreign earnings to fund our U.S. operations. However, if these funds were needed for our operations in the United States, we would be required to accrue and pay taxes to repatriate these funds. The determination of the amount of additional taxes related to the repatriation of these earnings is not practicable, as it may vary based on various factors such as the location of the cash and the effect of regulation in the various jurisdictions from which the cash would be repatriated.

During the first three months of 2020, we invested $22.0 million of cash in bank deposits and marketable securities with maturities up to 60 months from the balance sheet date. In addition, during the same period, bank deposits and marketable securities were sold or redeemed for cash amounting to $20.1 million. All of our marketable securities are classified as available-for-sale. The purchase and sale or redemption of available-for-sale marketable securities are considered part of investing cash flow. Available-for-sale marketable securities are stated at fair value, with unrealized gains and losses reported in accumulated other comprehensive income (loss), a separate component of stockholders' equity, net of taxes. Realized gains and losses on sales of investments, as determined on a specific identification basis, are included in the interim condensed consolidated statements of income (loss). We did not recognize any other-than-temporarily-impaired charges on marketable securities during the first three months of 2020. For more information about our marketable securities, see Notes 5 to the interim condensed consolidated financial statements for the three months ended March 31, 2020.

Bank deposits are classified as short-term bank deposits and long-term bank deposits. Short-term bank deposits are deposits with maturities of more than three months but no longer than one year from the balance sheet date, whereas long-term bank deposits are deposits with maturities of more than one year as of the balance sheet date. Bank deposits are presented at their cost, including accrued interest, and purchases and sales are considered part of cash flows from investing activities.

Operating Activities

Cash provided by operating activities for the first three months of 2020 was $6.4 million and consisted of net loss of $1.2 million, adjustments for non-cash items of $4.6 million, and changes in operating assets and liabilities of $3.0 million. Adjustments for non-cash items primarily consisted of $1.5 million of depreciation and amortization of intangible assets and $3.1 million of equity-based compensation expenses. The increase in operating assets and liabilities primarily consisted of a decrease in trade receivables of $3.4 million (mainly as a result of a decrease in unbilled receivables associated with royalties) and an increase in accrued payroll and related benefits of $1.6 million, partially offset by an increase in prepaid expenses and other assets of $1.6 million (mainly as a result of payment of a yearly design tool subscription) and an increase in deferred taxes, net, of $1.0 million.

Cash provided by operating activities for the first three months of 2019 was $4.7 million and consisted of net loss of $2.3 million, adjustments for non-cash items of $3.7 million, and changes in operating assets and liabilities of $3.3 million. Adjustments for non-cash items primarily consisted of $1.0 million of depreciation and amortization of intangible assets, $2.4 million of equity-based compensation expenses and $0.2 million of amortization of premiums on available-for-sale marketable securities. The increase in operating assets and liabilities primarily consisted of a decrease in trade receivables of $6.8 million (mainly as a result of a decrease in unbilled receivables associated with royalties) and an increase in accrued payroll and related benefits of $1.4 million, partially offset by an increase in prepaid expenses and other assets of $3.1 million (mainly as a result of payment of a yearly design tool subscription), an increase in accrued interest on bank deposits of $0.3 million, an increase in deferred taxes, net, of $0.4 million, a decrease in deferred revenues of $0.8 million and a decrease in accrued expenses and other payables of $0.6 million.

Cash flows from operating activities may vary significantly from quarter to quarter depending on the timing of our receipts and payments. Our ongoing cash outflows from operating activities principally relate to payroll-related costs and obligations under our property leases and design tool licenses. Our primary sources of cash inflows are receipts from our accounts receivable, to some extent, funding from research and development government grants and French research tax credits, and interest earned from our cash, deposits and marketable securities. The timing of receipts of accounts receivable from customers is based upon the completion of agreed milestones or agreed dates as set out in the contracts.

Investing Activities

Net cash used in investing activities for the first three months of 2020 was $2.9 million, compared to $4.1 million of net cash used in investing activities for the comparable period of 2019. We had a cash outflow of $13.1 million and a cash inflow of $9.2 million with respect to investments in marketable securities during the first three months of 2020, as compared to a cash outflow of $5.0 million and a cash inflow of $5.4 million with respect to investments in marketable securities during the first three months of 2019. For the first three months of 2020, we had net proceeds of $2.0 million from bank deposits, as compared to investments of $3.8 million in bank deposits for the comparable period of 2019. We had a cash outflow of $0.8 million and $0.6 million during the first three months of 2020 and 2019, respectively, from purchase of property and equipment. For the first three months of 2020, we had a cash outflow of $0.2 million for the acquisition of the Hillcrest Labs business.

Financing Activities

Net cash used in financing activities for the first three months of 2020 was $3.4 million, as compared to $1.4 million of net cash used in financing activities for the comparable period of 2019. The increase is mainly due to higher cash used for share repurchases, as set forth below.

In August 2008, we announced that our board of directors approved a share repurchase program for up to one million shares of common stock which was further extended collectively by an additional 5,700,000 shares in 2010, 2013, 2014 and 2018. In February 2020, our board of directors authorized the repurchase of an additional 700,000 shares of common stock. During the first three months of 2020, we repurchased 202,392 shares of common stock pursuant to our share repurchase program, at an average purchase price of $23.62 per share, for an aggregate purchase price of $4.8 million. During the first three months of 2019, we repurchased 91,303 shares of common stock pursuant to our share repurchase program, at an average purchase price of $27.77 per share, for an aggregate purchase price of $2.5 million. As of March 31, 2020, we had 497,608 shares available for repurchase.

During the first three months of 2020, we received $1.4 million from the exercise of stock-based awards, as compared to $1.2 million received for the comparable period of 2019.

We believe that our cash and cash equivalents, short-term bank deposits and marketable securities, along with cash from operations, will provide sufficient capital to fund our operations for at least the next 12 months. We cannot provide assurances, however, that the underlying assumed levels of revenues and expenses will prove to be accurate. We believe the company has the financial resources to weather the expected short-term impacts of COVID-19. However, we have limited insight into the extent to which our business may be impacted by COVID-19, and there are many uncertainties, including the length and severity of the pandemic. An extended and severe pandemic may materially and adversely affect our future operations, financial position and liquidity.

In addition, as part of our business strategy, we occasionally evaluate potential acquisitions of businesses, products and technologies and minority equity investments. Accordingly, a portion of our available cash may be used at any time for the acquisition of complementary products or businesses or minority equity investments. Such potential transactions may require substantial capital resources, which may require us to seek additional debt or equity financing. We cannot assure you that we will be able to successfully identify suitable acquisition or investment candidates, complete acquisitions or investments, integrate acquired businesses into our current operations, or expand into new markets. Furthermore, we cannot provide assurances that additional financing will be available to us in any required time frame and on commercially reasonable terms, if at all. See “Risk Factors—We may seek to expand our business in ways that could result in diversion of resources and extra expenses.” for more detailed information.

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

A majority of our revenues and a portion of our expenses are transacted in U.S. dollars and our assets and liabilities together with our cash holdings are predominately denominated in U.S. dollars. However, the majority of our expenses are denominated in currencies other than the U.S. dollar, principally the NIS and the Euro. Increases in volatility of the exchange rates of currencies other than the U.S. dollar versus the U.S. dollar could have an adverse effect on the expenses and liabilities that we incur when remeasured into U.S. dollars. We review our monthly expected non-U.S. dollar denominated expenditures and look to hold equivalent non-U.S. dollar cash balances to mitigate currency fluctuations. This has resulted in a foreign exchange loss of $19,000 and $133,000 for the first quarter of 2020 and 2019, respectively.

As a result of currency fluctuations and the remeasurement of non-U.S. dollar denominated expenditures to U.S. dollars for financial reporting purposes, we may experience fluctuations in our operating results on an annual and quarterly basis. To protect against the increase in value of forecasted foreign currency cash flow resulting from salaries paid in currencies other than the U.S. dollar during the year, we follow a foreign currency cash flow hedging program. We hedge portions of the anticipated payroll for our non-U.S. employees denominated in currencies other than the U.S. dollar for a period of one to twelve months with forward and option contracts. During the first quarter of 2020 and 2019, we recorded accumulated other comprehensive gain of $177,000 and $117,000, respectively, from our forward and option contracts, net of taxes, with respect to anticipated payroll expenses for our non-U.S. employees. As of March 31, 2020, the amount of other comprehensive gain from our forward and option contracts, net of taxes, was $226,000, which will be recorded in the consolidated statements of income (loss) during the following five months. We recognized a net gain of $0 for the first quarter of 2020, and a net gain of $73,000 for the comparable period of 2019, related to forward and options contracts. We note that hedging transactions may not successfully mitigate losses caused by currency fluctuations. We expect to continue to experience the effect of exchange rate and currency fluctuations on an annual and quarterly basis.

The majority of our cash and cash equivalents are invested in high grade certificates of deposits with major U.S., European and Israeli banks. Generally, cash and cash equivalents and bank deposits may be redeemed and therefore minimal credit risk exists with respect to them. Nonetheless, deposits with these banks exceed the Federal Deposit Insurance Corporation ("FDIC") insurance limits or similar limits in foreign jurisdictions, to the extent such deposits are even insured in such foreign jurisdictions. While we monitor on a systematic basis the cash and cash equivalent balances in the operating accounts and adjust the balances as appropriate, these balances could be impacted if one or more of the financial institutions with which we deposit our funds fails or is subject to other adverse conditions in the financial or credit markets. To date, we have experienced no loss of principal or lack of access to our invested cash or cash equivalents; however, we can provide no assurance that access to our invested cash and cash equivalents will not be affected if the financial institutions that we hold our cash and cash equivalents fail.

We hold an investment portfolio consisting principally of corporate bonds. We have the ability to hold such investments until recovery of temporary declines in market value or maturity. Accordingly, as of March 31, 2020, we believe the losses associated with our investments are temporary and no impairment loss was recognized during the first three months of 2020. However, we can provide no assurance that we will recover present declines in the market value of our investments.

Interest income and gains and losses from marketable securities, net, were $0.85 million for the first quarter of 2020, as compared to $0.93 million for the comparable period of 2019. The decrease in interest income, and gains and losses from marketable securities, net, during the first quarter of 2020 principally reflected lower combined cash, bank deposits and marketable securities balances held (mainly as a result of the acquisition of the Hillcrest Labs business and the technology investment in Immervision during the third quarter of 2019).

We are exposed primarily to fluctuations in the level of U.S. interest rates. To the extent that interest rates rise, fixed interest investments may be adversely impacted, whereas a decline in interest rates may decrease the anticipated interest income for variable rate investments. We typically do not attempt to reduce or eliminate our market exposures on our investment securities because the majority of our investments are short-term. We currently do not have any derivative instruments but may put them in place in the future. Fluctuations in interest rates within our investment portfolio have not had, and we do not currently anticipate such fluctuations will have, a material effect on our financial position on an annual or quarterly basis.

Item 4. CONTROLS AND PROCEDURES

As of the end of the period covered by this report, we carried out an evaluation, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of March 31, 2020.

There has been no change in our internal control over financial reporting that occurred during our most recent fiscal quarter that has materially affected or is reasonably likely to materially affect our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. LEGAL PROCEEDINGS

We are not a party to any litigation or other legal proceedings that we believe could reasonably be expected to have a material effect on our business, results of operations and financial condition.

Item 1A. RISK FACTORS

This Form 10Q contains forward-looking statements concerning our future products, expenses, revenue, liquidity and cash needs as well as our plans and strategies. These forward-looking statements are based on current expectations and we assume no obligation to update this information. Numerous factors could cause our actual results to differ significantly from the results described in these forward-looking statements, including the following risk factors.

There are no material changes to the Risk Factors described under the title "Factors That May Affect Future Performance" in our Annual Report on Form 10K for the fiscal year ended December 31, 2019 other than (1) changes to the Risk Factor below entitled: "We rely significantly on revenues derived from a limited number of customers who contribute to our royalty and license revenues;" (2) changes to the Risk Factor below entitled "Royalty rates could decrease for existing and future license agreements, which could materially adversely affect our operating results;" (3) changes to the Risk Factor below entitled "Because we have significant international operations, we may be subject to political, economic and other conditions relating to our international operations that could increase our operating expenses and disrupt our revenues and business;" (4) changes to the Risk Factor below entitled "Our research and development expenses may increase if the grants we currently receive from the Israeli government are reduced or withheld;" (5) changes to the Risk Factor below entitled: "The Israeli tax benefits that we currently receive and the government programs in which we participate require us to meet certain conditions and may be terminated or reduced in the future, which could increase our tax expenses;" (6) changes to the Risk Factor below entitled "Our product development efforts are time-consuming and expensive and may not generate an acceptable return, if any;" and (7) changes to the Risk Factor below entitled "The COVID-19 pandemic, or other outbreak of disease or similar public health threat, could materially and adversely affect our business, financial condition and results of operations."

The COVID-19 pandemic, or other outbreak of disease or similar public health threat, could materially and adversely affect our business, financial condition and results of operations.

The COVID-19 pandemic has resulted in government authorities implementing numerous measures to try to contain the virus, such as travel bans and restrictions, quarantines, shelter in place orders, and shutdowns. These measures have impacted and may further impact our workforce and operations, the operations of our customers, and those of our respective vendors and suppliers, as well as consumer confidence and demand. There is considerable uncertainty regarding the impact, and expected duration, of such measures and potential future measures, and restrictions on our access to our facilities or on our support operations or workforce, or similar limitations for our customers, vendors and suppliers. Continued restrictions may have a material adverse effect on our business, financial condition and results of operations.

The outbreak has significantly increased economic and demand uncertainty. The COVID-19 pandemic has caused an economic slowdown that is likely to continue and could cause a global recession.

We have seen that demand for consumer electronic products has softened due to social distancing and shelter-in-place restrictions. Therefore, we may face some near-term softness, mainly related to a shortfall in consumer spending and its implications on demand for consumer electronic products.

The spread of COVID-19 also has caused us to modify our business practices (including employee travel, employee work locations, and cancellation of physical participation in meetings, events and conferences), and we may take further actions as may be required by government authorities or that we determine are in the best interests of our employees, customers, and communities. Such actions may result in further disruptions to our supply chain, operations and facilities, and workforce. We cannot assure you that such measures will be sufficient to mitigate the risks posed by COVID-19, and our ability to perform critical functions could be harmed.

In recent weeks, the spread of COVID-19 has led to disruption and volatility in the global capital markets, which may adversely affect our and our customers' and suppliers' liquidity, cost of capital and ability to access the capital markets. As a result, the continued spread of COVID-19 could cause further disruption in our supply chain and customer demand, and could adversely affect the ability of our customers to perform, including in making timely payments to us, which could further adversely impact our business, financial condition and results of operations.

We cannot at this time quantify or forecast the business impact of COVID-19. The degree to which COVID-19 impacts our business, financial condition, and results of operations will depend on future developments, which are highly uncertain, and we cannot assure you as to the duration and spread of the outbreak, its severity, the actions to contain the virus or treat its impact, or how quickly and to what extent normal economic and operating conditions can resume.

The markets in which we operate are highly competitive, and as a result we could experience a loss of sales, lower prices and lower revenues.

The markets for the products in which our technology is incorporated are highly competitive. Aggressive competition could result in substantial declines in the prices that we are able to charge for our intellectual property or lose design wins to competitors. Many of our competitors are striving to increase their share of the growing signal processing IP markets and are reducing their licensing and royalty fees to attract customers. The following industry players and factors may have a significant impact on our competitiveness:

- we compete directly in the signal processing cores space with Verisilicon, Cadence and Synopsys;
- we compete with CPU IP or configurable CPU IP (offering DSP configured CPU and/or DSP acceleration and/or connectivity capabilities to their IP) providers, such as ARM (acquired by SoftBank), Synopsys and Cadence and the RISC-V open source;
- we compete with internal engineering teams at companies such as Mediatek, Qualcomm, Samsung, Huawei and NXP that may design programmable DSP core products and signal processing cores in-house and therefore not license our technologies;
- we compete in the short range wireless markets with ARM, Imagination Technologies (acquired by Canyon Bridge) and Mindtree;
- we compete in embedded imaging and vision market with Cadence, Synopsys, Videantis, Verislicon, ARM and Verisilicon;
- we compete in AI processor marketing with AI processor and accelerator providers, including AImotive, Arm Limited, Cadence, Synopsys, Cambricon, Digital Media Professionals (DMP), Imagination Technologies, Nvidia open source NVDLA and Verisilicon; and
- we compete in the audio and voice applications market with Arm Limited, Cadence, Synopsys and Verisilicon.

In addition, we may face increased competition from smaller, niche semiconductor design companies in the future. Some of our customers also may decide to satisfy their needs through in-house design. We compete on the basis of signal processing IP performance, overall chip cost, power consumption, flexibility, reliability, communication and multimedia software availability, design cycle time, tool chain, customer support, name recognition, reputation and financial strength. Our inability to compete effectively on these bases could have a material adverse effect on our business, results of operations and financial condition.

Our quarterly operating results fluctuate from quarter to quarter due to a variety of factors, including our lengthy sales cycle, and may not be a meaningful indicator of future performance.

In some quarters our operating results could be below the expectations of securities analysts and investors, which could cause our stock price to fall. Factors that may affect our quarterly results of operations in the future include, among other things:

- the gain or loss of significant licensees, partly due to our dependence on a limited number of customers generating a significant amount of quarterly revenues;
- any delay in execution of any anticipated licensing arrangement during a particular quarter;
- delays in revenue recognition for some license agreements based on percentage of completion of customized work or other accounting reasons;
- the timing and volume of orders and production by our customers, as well as fluctuations in royalty revenues resulting from fluctuations in unit shipments by our licensees;
- royalty pricing pressures and reduction in royalty rates due to an increase in volume shipments by customers, end-product price erosion and competitive pressures;
- earnings or other financial announcements by our major customers that include shipment data or other information that implicates expectations for our future royalty revenues;
- the mix of revenues among licensing and related revenues, and royalty revenues;
- the timing of the introduction of new or enhanced technologies by us and our competitors, as well as the market acceptance of such technologies;
- the discontinuation, or public announcement thereof, of product lines or market sectors that incorporate our technology by our significant customers;
- our lengthy sales cycle and specifically in the third quarter of any fiscal year during which summer vacations slow down decision-making processes of our customers in executing contracts;
- delays in the commercialization of end products that incorporate our technology;
- currency fluctuations, mainly the EURO and the NIS versus the U.S. dollar;

- fluctuations in operating expenses and gross margins associated with the introduction of, and research and development investments in, new or enhanced technologies and adjustments to operating expenses resulting from restructurings;
- the approvals, amounts and timing of Israeli research and development government grants from the Israeli Innovation Authority of the Ministry of Economy and Industry in Israel (the “IIA”), EU grants and French research tax credits;
- the impact of new accounting pronouncements, including the new revenue recognition rules;
- the timing of our payment of royalties to the IIA, which is impacted by the timing and magnitude of license agreements and royalty revenues derived from technologies that were funded by grant programs of the IIA;
- statutory changes associated with research tax benefits applicable to French technology companies;
- our ability to scale our operations in response to changes in demand for our technologies;
- entry into new end markets that utilize our signal processing IPs, software and platforms;
- changes in our pricing policies and those of our competitors;
- restructuring, asset and goodwill impairment and related charges, as well as other accounting changes or adjustments;
- general political conditions, including global trade wars resulting from tariffs and business restrictions and bans imposed by government entities, like the well publicized 2018 ban associated with ZTE, as well as other regulatory actions and changes that may adversely affect the business environment;
- general economic conditions, including the current economic conditions, and its effect on the semiconductor industry and sales of consumer products into which our technologies are incorporated;
- delays in final product delivery due to unexpected issues introduced by our service or EDA tool providers; and
- delays in ratification of standards for Bluetooth, WiFi or NB-IoT that can affect the introduction of new products.

Each of the above factors is difficult to forecast and could harm our business, financial condition and results of operations. Also, we license our technology to OEMs and semiconductor companies for incorporation into their end products for consumer markets, including handsets and consumer electronics products. The royalties we generate are reported by our customers. Our royalty revenues are affected by seasonal buying patterns of consumer products sold by our OEM customers that incorporate our technology and the market acceptance of such end products supplied by our OEM customers. The first quarter in any given year is usually a sequentially down quarter for us in relation to royalty revenues as this period represents lower post-Christmas fourth quarter consumer product shipments. However, the magnitude of this first quarter decrease varies annually and has been impacted by global economic conditions, market share changes, exiting or refocusing of market sectors by our customers and the timing of introduction of new and existing handset devices powered by CEVA technology sold in any given quarter compared to the prior quarter.

Moreover, the semiconductor and consumer electronics industries remain volatile, which makes it extremely difficult for our customers and us to accurately forecast financial results and plan for future business activities. As a result, our past operating results should not be relied upon as an indication of future performance.

We rely significantly on revenues derived from a limited number of customers who contribute to our royalty and license revenues.

We derive a significant amount of revenues from a limited number of customers. One customer, Spreadtrum, accounted for 9.6% and 12% of our total revenues for 2020 and 2019, respectively. With respect to our royalty revenues, three royalty paying customers each represented 10% or more of our total royalty revenues for both the first quarter of 2020 and 2019, and collectively represented 70% of our total royalty revenues for both the first quarter of 2020 and 2019. We expect that a significant portion of our future revenues will continue to be generated by a limited number of customers. The loss of any significant royalty paying customer could adversely affect our near-term future operating results. Furthermore, consolidation among our customers may negatively affect our revenue source, increase our existing customers’ negotiation leverage and make us further dependent on a limited number of customers. Moreover, the discontinuation of product lines or market sectors that incorporate our technology by our significant customers or a change in direction of their business and our inability to adapt our technology to their new business needs could have material negative implications for our future royalty revenues.

Our business is dependent on licensing revenues, which may vary period to period.

License agreements for our signal processing IP cores and platforms have not historically provided for substantial ongoing license payments so past licensing revenues may not be indicative of the amount of such revenues in any future period. We believe that there is a similar risk with RivieraWaves’ operations associated with Bluetooth and Wi-Fi connectivity technologies. Significant portions of our anticipated future revenues, therefore, will likely depend upon our success in attracting new customers or expanding our relationships with existing customers. However, revenues recognized from licensing arrangements vary significantly from period to period, depending on the number and size of deals closed during a quarter, and is difficult to predict. In addition, as we expand our business into the non-handset baseband markets, our licensing deals may be smaller but greater in volume which may further fluctuate our licensing revenues quarter to quarter. Our ability to succeed in our licensing efforts will depend on a variety of factors, including the performance, quality, breadth and depth of our current and future products as well as our sales and marketing skills. In addition, some of our licensees may in the future decide to satisfy their needs through in-house design and production. Our failure to obtain future licensing customers would impede our future revenue growth and could materially harm our business.

Royalty rates could decrease for existing and future license agreements, which could materially adversely affect our operating results.

Royalty payments to us under existing and future license agreements could be lower than currently anticipated for a variety of reasons. Average selling prices for semiconductor products generally decrease over time during the lifespan of a product. In addition, there is increasing downward pricing pressures in the semiconductor industry on end products incorporating our technology, especially end products for the handsets and consumer electronics markets. As a result, notwithstanding the existence of a license agreement, our customers may demand that royalty rates for our products be lower than our historic royalty rates. We have in the past and may be pressured in the future to renegotiate existing license agreements with our customers. In addition, certain of our license agreements provide that royalty rates may decrease in connection with the sale of larger quantities of products incorporating our technology. Furthermore, our competitors may lower the royalty rates for their comparable products to win market share which may force us to lower our royalty rates as well. As a consequence of the above referenced factors, as well as unforeseen factors in the future, the royalty rates we receive for use of our technology could decrease, thereby decreasing future anticipated revenues and cash flow. Royalty revenues were approximately 39% and 35% of our total revenues for the first quarter of 2020 and 2019, respectively. Therefore, a significant decrease in our royalty revenues could materially adversely affect our operating results.

Moreover, royalty rates may be negatively affected by macroeconomic trends (including from the recent COVID-19 pandemic and its global impact) or changes in products mix. Furthermore, consolidation among our customers may increase the leverage of our existing customers to extract concessions from us in royalty rates. Moreover, changes in products mix such as an increase in lower royalty bearing products shipped in high volume like low-cost feature phones and Bluetooth-based products in lieu of higher royalty bearing products like LTE phones could lower our royalty revenues.

We generate a significant amount of our total revenues, especially royalty revenues, from the handset baseband market (for mobile handsets and for other modem connected devices) and our business and operating results may be materially adversely affected if we do not continue to succeed in these highly competitive markets.

A significant portion of our revenues in general, and in particular our royalty revenues, are derived from baseband for handsets. Any adverse change in our ability to compete and maintain our competitive position in the handset baseband market, including through the introduction by competitors of enhanced technologies that attract OEM customers that target those markets, would harm our business, financial condition and results of operations. Moreover, the handset baseband market is extremely competitive and is facing intense pricing pressures, and we expect that competition and pricing pressures will only increase. Furthermore, it can be very volatile with regards to volume shipments of different phones, standards and connected devices due to inventory build out or consumer demand changes or geographical macroeconomics, pricing changes, product discontinuations due to technical issues and timing of introduction of new phones and products. Our existing OEM customers also may fail to introduce new handset devices that attract consumers, or encounter significant delays in developing, manufacturing or shipping new or enhanced products in those markets or find alternative technological solutions and suppliers. The inability of our OEM customers to compete would result in lower shipments of products powered by our technologies which in turn would have a material adverse effect on our business, financial condition and results of operations. Since a significant portion of our revenues is derived from the handset baseband market, adverse conditions in this market would have a material adverse effect on our business, financial condition and results of operations.

In order to sustain the future growth of our business, we must penetrate new markets and our new products must achieve widespread market acceptance but such additional revenue opportunities may not be implemented and may not be achieved.

In order to expand our business and increase our revenues, we must penetrate new markets and introduce new products, including additional non-baseband related products. We have invested significant resources in pursuing potential opportunities for revenue growth and diversify our revenue streams. Our continued success will depend significantly on our ability to accurately anticipate changes in industry standards and to continue to appropriately fund development efforts to enhance our existing products or introduce new products in a timely manner to keep pace with technological developments. However, there are no assurances that we will develop products relevant for the marketplace or gain significant market share in those competitive markets. Moreover, if any of our competitors implement new technologies before us, those competitors may be able to provide products that are more effective or at lower prices, which could adversely impact our sales and impact our market share. Our inability to penetrate new markets and increase our market share in those markets or lack of customer acceptance of our new products may harm our business and potential growth.

Because our IP solutions are components of end products, if semiconductor companies and electronic equipment manufacturers do not incorporate our solutions into their end products or if the end products of our customers do not achieve market acceptance, we may not be able to generate adequate sales of our products.

We do not sell our IP solutions directly to end-users; we license our technology primarily to semiconductor companies and electronic equipment manufacturers, who then incorporate our technology into the products they sell. As a result, we rely on our customers to incorporate our technology into their end products at the design stage. Once a company incorporates a competitor’s technology into its end product, it becomes significantly more difficult for us to sell our technology to that company because changing suppliers involves significant cost, time, effort and risk for the company. As a result, we may incur significant expenditures on the development of a new technology without any assurance that our existing or potential customers will select our technology for incorporation into their own product and without this “design win,” it becomes significantly difficult to sell our IP solutions. Moreover, even after a customer agrees to incorporate our technology into its end products, the design cycle is long and may be delayed due to factors beyond our control, which may result in the end product incorporating our technology not reaching the market until long after the initial “design win” with such customer. From initial product design-in to volume production, many factors could impact the timing and/or amount of sales actually realized from the design-in. These factors include, but are not limited to, changes in the competitive position of our technology, our customers’ financial stability, and our customers' ability to ship products according to our customers’ schedule. Moreover, current economic conditions may further prolong a customer’s decision-making process and design cycle.

Further, because we do not control the business practices of our customers, we do not influence the degree to which they promote our technology or set the prices at which they sell products incorporating our technology. We cannot assure you that our customers will devote satisfactory efforts to promote their end products which incorporate our IP solutions.

In addition, our royalties from licenses and therefore the growth of our business, are dependent upon the success of our customers in introducing products incorporating our technology and the success of those products in the marketplace. The primary customers for our products are semiconductor design and manufacturing companies, system OEMs and electronic equipment manufacturers, particularly in the telecommunications field. All of the industries we license into are highly competitive, cyclical and have been subject to significant economic downturns at various times. These downturns are characterized by production overcapacity and reduced revenues, which at times may encourage semiconductor companies or electronic product manufacturers to reduce their expenditure on our technology. If we do not retain our current customers and continue to attract new customers, our business may be harmed.

We depend on market acceptance of third-party semiconductor intellectual property.

The semiconductor intellectual property (SIP) industry is a relatively small and emerging industry. Our future growth will depend on the level of market acceptance of our third-party licensable intellectual property model, the variety of intellectual property offerings available on the market, and a shift in customer preference away from in-house development of proprietary signal processing IP towards licensing open signal processing IP cores and platforms. Furthermore, the third-party licensable intellectual property model is highly dependent on the market adoption of new services and products, such as low cost smartphones in emerging markets, LTE-based smartphones, mobile broadband, small cell base stations and the increased use of advanced audio, voice, computational photography and embedded vision in mobile, automotive and consumer products, as well as in IoT and connectivity applications. Such market adoption is important because the increased cost associated with ownership and maintenance of the more complex architectures needed for the advanced services and products may motivate companies to license third-party intellectual property rather than design them in-house.

The trends that would enable our growth are largely beyond our control. Semiconductor customers also may choose to adopt a multi-chip, off-the-shelf chip solution versus licensing or using highly-integrated chipsets that embed our technologies. If the above referenced market shifts do not materialize or third-party SIP does not achieve market acceptance, our business, results of operations and financial condition could be materially harmed.

Because we have significant international operations, we may be subject to political, economic and other conditions relating to our international operations that could increase our operating expenses and disrupt our revenues and business.

Approximately 86% and 90% of our total revenues for the first quarter of 2020 and 2019, respectively, were derived from customers located outside of the United States. We expect that international customers will continue to account for a significant portion of our revenues for the foreseeable future. As a result, the occurrence of any negative international political, economic or geographic events could result in significant revenue shortfalls. These shortfalls could cause our business, financial condition and results of operations to be harmed. Some of the risks of doing business internationally include:

- unexpected changes in regulatory requirements;

- fluctuations in the exchange rate for the U.S. dollar;
- imposition of tariffs and other barriers and restrictions;
- potential negative international community's reaction to the U.S. Tax Cuts and Jobs Act;
- burdens of complying with a variety of foreign laws, treaties and technical standards;
- uncertainty of laws and enforcement in certain countries relating to the protection of intellectual property;
- multiple and possibly overlapping tax structures and potentially adverse tax consequences;
- political and economic instability, including terrorist attacks and protectionist polices; and
- changes in diplomatic and trade relationships.

Revenues from customers located in the Asia Pacific region account for a substantial portion of our total revenues. We expect that revenue from international sales generally, and sales to the Asia Pacific region specifically, will continue to be a material part of our total revenues. Therefore, any financial crisis, trade negotiations or disputes or other major event causing business disruption in international jurisdictions generally, and in specific countries in the Asia Pacific region in particular, could negatively affect our future revenues and results of operations. For example, in 2018, the U.S. Department of Commerce's Bureau of Industry and Security's initial ban on exports of U.S. products to Chinese telecommunications OEM ZTE disrupted ZTE's operations, which caused delays with our engagements with ZTE and negatively impacted our royalty revenues. Actions of any nature with respect to such customers may reduce our revenues from them and adversely affect our business and financial results.

New tariffs and other trade measures could adversely affect our consolidated results of operations, financial position and cash flows.

General trade tensions between the U.S. and China have been escalating since 2018, and are not fully resolved yet. While tariffs and other retaliatory trade measures imposed by other countries on U.S. goods have not yet had a significant impact on our business or results of operations, we cannot predict further developments, and such existing or future tariffs could have a material adverse effect on our consolidated results of operations, financial position and cash flows. Furthermore, changes in U.S. trade policy could trigger retaliatory actions by affected countries, which could impose restrictions on our ability to do business in or with affected countries or prohibit, reduce or discourage purchases of our products by foreign customers and higher prices for our products in foreign markets. For example, there are risks that the Chinese government may, among other things, require the use of local suppliers, compel companies that do business in China to partner with local companies to conduct business and provide incentives to government-backed local customers to buy from local suppliers. Changes in, and responses to, U.S. trade policy could reduce the competitiveness of our products and cause our sales and revenues to drop, which could materially and adversely impact our business and results of operations.

We depend on a limited number of key personnel who would be difficult to replace.

Our success depends to a significant extent upon certain of our key employees and senior management, the loss of which could materially harm our business. Competition for skilled employees in our field is intense. We cannot assure you that in the future we will be successful in attracting and retaining the required personnel.

The sales cycle for our IP solutions is lengthy, which makes forecasting of our customer orders and revenues difficult.

The sales cycle for our IP solutions is lengthy, often lasting three to nine months. Our customers generally conduct significant technical evaluations, including customer trials, of our technology as well as competing technologies prior to making a purchasing decision. In addition, purchasing decisions also may be delayed because of a customer's internal budget approval process. Furthermore, given the current market conditions, we have less ability to predict the timing of our customers' purchasing cycle and potential unexpected delays in such a cycle. Because of the lengthy sales cycle and potential delays, our dependence on a limited number of customers to generate a significant amount of revenues for a particular period and the size of customer orders, if orders forecasted for a specific customer for a particular period do not occur in that period, our revenues and operating results for that particular quarter could suffer. Moreover, a portion of our expenses related to an anticipated order is fixed and difficult to reduce or change, which may further impact our operating results for a particular period.

Because our IP solutions are complex, the detection of errors in our products may be delayed, and if we deliver products with defects, our credibility will be harmed, the sales and market acceptance of our products may decrease and product liability claims may be made against us.

Our IP solutions are complex and may contain errors, defects and bugs when introduced. If we deliver products with errors, defects or bugs, our credibility and the market acceptance and sales of our products could be significantly harmed. Furthermore, the nature of our products may also delay the detection of any such error or defect. If our products contain errors, defects and bugs, then we may be required to expend significant capital and resources to alleviate these problems. This could result in the diversion of technical and other resources from our other development efforts. Any actual or perceived problems or delays may also adversely affect our ability to attract or retain customers. Furthermore, the existence of any defects, errors or failure in our products could lead to product liability claims or lawsuits against us or against our customers. A successful product liability claim could result in substantial cost and divert management's attention and resources, which would have a negative impact on our financial condition and results of operations.

Our success will depend on our ability to successfully manage our geographically dispersed operations.

Most of our research and development staff is located in Israel. We also have research and development teams in France, Ireland, the United Kingdom and United States (following our recent acquisition of the Hillcrest Labs business from InterDigital in July 2019). Accordingly, our ability to compete successfully will depend in part on the ability of a limited number of key executives located in geographically dispersed offices to manage our research and development staff and integrate them into our operations to effectively address the needs of our customers and respond to changes in our markets. If we are unable to effectively manage and integrate our remote operations, our business may be materially harmed.

Our operations in Israel may be adversely affected by instability in the Middle East region.

One of our principal research and development facilities is located in Israel, and most of our executive officers and some of our directors are residents of Israel. Although substantially all of our sales currently are being made to customers outside Israel, we are nonetheless directly influenced by the political, economic and military conditions affecting Israel. Any major hostilities involving Israel could significantly harm our business, operating results and financial condition.

In addition, certain of our employees are currently obligated to perform annual reserve duty in the Israel Defense Forces and are subject to being called to active military duty at any time. Although we have operated effectively under these requirements since our inception, we cannot predict the effect of these obligations on the company in the future. Our operations could be disrupted by the absence, for a significant period, of one or more of our key employees due to military service.

Terrorist attacks, acts of war or military actions and/or other civil unrest may adversely affect the territories in which we operate, and our business, financial condition and operating results.

Terrorist attacks and attempted terrorist attacks, military responses to terrorist attacks, other military actions, or governmental action in response to or in anticipation of a terrorist attack, or civil unrest, may adversely affect prevailing economic conditions, resulting in work stoppages, reduced consumer spending or reduced demand for end products that incorporate our technologies. These developments subject our worldwide operations to increased risks and, depending on their magnitude, could reduce net sales and therefore could have a material adverse effect on our business, financial condition and operating results.

Our research and development expenses may increase if the grants we currently receive from the Israeli government are reduced or withheld.

We currently receive research grants mainly from programs of the IIA. We recorded an aggregate of $339,000 and $1,138,000 in the first quarter of 2020 and 2019, respectively. To be eligible for these grants, we must meet certain development conditions and comply with periodic reporting obligations. Although we have met such conditions in the past, should we fail to meet such conditions in the future our research grants may be repayable, reduced or withheld. The repayment or reduction of such research grants may increase our research and development expenses which in turn may reduce our operating income. Also, the timing of such payments from the IIA may vary from year to year and quarter to quarter, and we have no control on the timing of such payment.

Enacted tax legislation in the United States may impact our business.

We are subject to taxation in the United States, as well as a number of foreign jurisdictions. In December 2017, the United States enacted U.S. tax reform. The legislation implements many new U.S. domestic and international tax provisions. Some aspects of U.S. tax reform still remain unclear, and although additional clarifying guidance has been issued (by the Internal Revenue Services and the U.S. Treasury Department), there are still some areas that may not be clarified for some time. Also, many of U.S. states have not yet updated their laws to take into account the new federal legislation. As a result, there may be further impact of new laws on our future results of operations and financial condition. It is possible that U.S. tax reform, or interpretations under it, could change and could have an adverse effect on us, and such effect could be material.

The nature of our business requires the application of complex revenue recognition rules. Significant changes in U.S. generally accepted accounting principles, or GAAP, including the adoption of the new revenue recognition rules, could materially affect our financial position and results of operations.

We prepare our financial statements in accordance with GAAP, which is subject to interpretation or changes by the Financial Accounting Standards Board, or FASB, the SEC, and other various bodies formed to promulgate and interpret appropriate accounting principles. New accounting pronouncements and changes in accounting principles have occurred in the past and are expected to occur in the future, which may have a significant effect on our financial results. For example, pursuant to the new revenue recognition rules, effective as of January 1, 2018, an entity recognizes sales and usage-based royalties as revenue only when the later of the following events occurs: (1) the subsequent sale or usage occurs or (2) the performance obligation to which some or all of the sales-based or usage-based royalty allocated has been satisfied (or partially satisfied). Recognizing royalty revenue on a lag time basis is not permitted. As a result, the royalties we generate from customers is based on royalty of units shipped during the quarter as estimated by our customers, not a quarter in arrears that we previously report. Adoption of this standard and any difficulties in implementation of changes in accounting principles, including uncertainty associated with royalty revenues for the quarter based on estimates provided by our customer, could cause us to fail to meet our financial reporting obligations, which could result in regulatory discipline and harm investors' confidence in us.

The Israeli tax benefits that we currently receive and the government programs in which we participate require us to meet certain conditions and may be terminated or reduced in the future, which could increase our tax expenses.

We enjoy certain tax benefits in Israel, particularly as a result of the "Approved Enterprise" and the "Benefited Enterprise" status of our facilities and programs through 2019, and the "Technological Preferred Enterprise" status of our facilities and programs from 2020 and onward. To maintain our eligibility for these tax benefits, we must continue to meet certain conditions, relating principally to adherence to the investment program filed with the Investment Center of the Israeli Ministry of Industry and Trade and to periodic reporting obligations. Should we fail to meet such conditions, these benefits would be cancelled and we would be subject to corporate tax in Israel at the standard corporate rate (23% in 2020) and could be required to refund tax benefits already received. Additionally, if we increase our activities outside of Israel, for example, by acquisitions, our increased activities may not be eligible for inclusion in Israeli tax benefit programs. The termination or reduction of certain programs and tax benefits or a requirement to refund tax benefits already received may seriously harm our business, operating results and financial condition.

We may have exposure to additional tax liabilities as a result of our foreign operations.

We are subject to income taxes in the United States and various foreign jurisdictions. In addition to our significant operations in Israel, we have operations in Ireland, France, the United Kingdom, China and Japan. Significant judgment is required in determining our worldwide provision for income taxes and other tax liabilities. In the ordinary course of a global business, there are many intercompany transactions and calculations where the ultimate tax determination is uncertain. We are regularly under audit by tax authorities. Our intercompany transfer pricing may be reviewed by the U.S. Internal Revenue Service and by foreign tax jurisdictions. Although we believe that our tax estimates are reasonable, due to the complexity of our corporate structure, the multiple intercompany transactions and the various tax regimes, we cannot assure you that a tax audit or tax dispute to which we may be subject will result in a favorable outcome for us. If taxing authorities do not accept our tax positions and impose higher tax rates on our foreign operations, our overall tax expenses could increase.

Our failure to maintain certain research tax benefits applicable to French technology companies may adversely affect the results of operations of our RivieraWaves operations.

Pursuant to our acquisition of the RivieraWaves operations, we will benefit from certain research tax credits applicable to French technology companies, including, for example, the Crédit Impôt Recherche ("CIR"). The CIR is a French tax credit aimed at stimulating research activities. The CIR can be offset against French corporate income tax due and the portion in excess (if any) may be refunded every three years. The French Parliament can decide to eliminate, or reduce the scope or the rate of, the CIR benefit, at any time or challenge our eligibility or calculations for such tax credits, all of which may have an adverse impact on our results of operations and future cash flows.

We are exposed to fluctuations in currency exchange rates.

A significant portion of our business is conducted outside the United States. Although most of our revenues are transacted in U.S. dollars, we may be exposed to currency exchange fluctuations in the future as business practices evolve and we are forced to transact business in local currencies. Moreover, the majority of our expenses are denominated in foreign currencies, mainly New Israeli Shekel (NIS) and the EURO, which subjects us to the risks of foreign currency fluctuations. Our primary expenses paid in currencies other than the U.S. dollar are employee salaries. Increases in the volatility of the exchange rates of currencies other than the U.S. dollar versus the U.S. dollar could have an adverse effect on the expenses and liabilities that we incur in currencies other than the U.S. dollar when remeasured into U.S. dollars for financial reporting purposes. We have instituted a foreign cash flow hedging program to minimize the effects of currency fluctuations. However, hedging transactions may not successfully mitigate losses caused by currency fluctuations, and our hedging positions may be partial or may not exist at all in the future. We also review our monthly expected non-U.S. dollar denominated expenditure and look to hold equivalent non-U.S. dollar cash balances to mitigate currency fluctuations. However, in some cases, we expect to continue to experience the effect of exchange rate currency fluctuations on an annual and quarterly basis. For example, our EURO cash balances increase significantly on a quarterly basis beyond our EURO liabilities from the CIR, which is generally refunded every three years.

We are exposed to the credit risk of our customers, which could result in material losses.

As we diversify and expand our addressable market, we will enter into licensing arrangements with first time customers with whom we don't have full visible of their creditworthiness. Furthermore, we have increased business activities in the Asia Pacific region. As a result, our future credit risk exposure may increase. Although we monitor and attempt to mitigate credit risks, there can be no assurance that our efforts will be effective. Although any losses to date relating to credit exposure of our customers have not been material, future losses, if incurred, could harm our business and have a material adverse effect on our operating results and financial condition.

Our product development efforts are time-consuming and expensive and may not generate an acceptable return, if any.

Our product development efforts require us to incur substantial research and development expense. Our research and development expenses were approximately $15.1 million and $12.3 million for the first quarter of 2020 and 2019, respectively. We may not be able to achieve an acceptable return, if any, on our research and development efforts.

The development of our products is highly complex. We occasionally have experienced delays in completing the development and introduction of new products and product enhancements, and we could experience delays in the future. Unanticipated problems in developing products could also divert substantial engineering resources, which may impair our ability to develop new products and enhancements and could substantially increase our costs. Furthermore, we may expend significant amounts on research and development programs that may not ultimately result in commercially successful products. Our research and development expense levels have increased steadily in the past few years. As a result of these and other factors, we may be unable to develop and introduce new products successfully and in a cost-effective and timely manner, and any new products we develop and offer may never achieve market acceptance. Any failure to successfully develop future products would have a material adverse effect on our business, financial condition and results of operations.

If we are unable to meet the changing needs of our end-users or address evolving market demands, our business may be harmed.

The markets for signal processing IPs are characterized by rapidly changing technology, emerging markets and new and developing end-user needs, and requiring significant expenditure for research and development. We cannot assure you that we will be able to introduce systems and solutions that reflect prevailing industry standards, on a timely basis, meet the specific technical requirements of our end-users or avoid significant losses due to rapid decreases in market prices of our products, and our failure to do so may seriously harm our business.

We may seek to expand our business in ways that could result in diversion of resources and extra expenses.

We may in the future pursue acquisitions of businesses, products and technologies, establish joint venture arrangements, make minority equity investments or enhance our existing CEVAnet partner eco-system to expand our business. We are unable to predict whether or when any prospective acquisition, equity investment or joint venture will be completed. The process of negotiating potential acquisitions, joint ventures or equity investments, as well as the integration of acquired or jointly developed businesses, technologies or products may be prolonged due to unforeseen difficulties and may require a disproportionate amount of our resources and management's attention. We cannot assure you that we will be able to successfully identify suitable acquisition or investment candidates, complete acquisitions or investments, or integrate acquired businesses or joint ventures with our operations. If we were to make any acquisition or investment or enter into a joint venture, we may not receive the intended benefits of the acquisition, investment or joint venture or such an acquisition, investment or joint venture may not achieve comparable levels of revenues, profitability or productivity as our existing business or otherwise perform as expected. The expansion of our CEVAnet partner eco-system also may not achieve the anticipated benefits. The occurrence of any of these events could harm our business, financial condition or results of operations. Future acquisitions, investments or joint ventures may require substantial capital resources, which may require us to seek additional debt or equity financing.

Future acquisitions, joint ventures or minority equity investments by us could result in the following, any of which could seriously harm our results of operations or the price of our stock:

- issuance of equity securities that would dilute our current stockholders' percentages of ownership;
- large one-time write-offs or equity investment impairment write-offs;
- incurrence of debt and contingent liabilities;
- difficulties in the assimilation and integration of operations, personnel, technologies, products and information systems of the acquired companies;
- inability to realize cost efficiencies or synergies, thereby incurring higher operating expenditures as a result of the acquisition;

- diversion of management's attention from other business concerns;
- contractual disputes;
- risks of entering geographic and business markets in which we have no or only limited prior experience; and
- potential loss of key employees of acquired organizations.

We may not be able to adequately protect our intellectual property.

Our success and ability to compete depend in large part upon the protection of our proprietary technologies. We rely on a combination of patent, copyright, trademark, trade secret, mask work and other intellectual property rights, confidentiality procedures and licensing arrangements to establish and protect our proprietary rights. These agreements and measures may not be sufficient to protect our technology from third-party infringement or protect us from the claims of others. As a result, we face risks associated with our patent position, including the potential need to engage in significant legal proceedings to enforce our patents, the possibility that the validity or enforceability of our patents may be denied, the possibility that third parties will be able to compete against us without infringing our patents and the possibility that our products may infringe patent rights of third parties.

Our trade names or trademarks may be registered or utilized by third parties in countries other than those in which we have registered them, impairing our ability to enter and compete in those markets. If we were forced to change any of our brand names, we could lose a significant amount of our brand identity.

Our business will suffer if we are sued for infringement of the intellectual property rights of third parties or if we cannot obtain licenses to these rights on commercially acceptable terms.

We are subject to the risk of adverse claims and litigation alleging infringement of the intellectual property rights of others. There are a large number of patents held by others, including our competitors, pertaining to the broad areas in which we are active. We have not, and cannot reasonably, investigate all such patents. From time to time, we have become aware of patents in our technology areas and have sought legal counsel regarding the validity of such patents and their impact on how we operate our business, and we will continue to seek such counsel when appropriate in the future. In addition, patent infringement claims are increasingly being asserted by patent holding companies (so-called patent "trolls"), which do not use technology and whose sole business is to enforce patents against companies, such as us, for monetary gain. Because such patent holding companies do not provide services or use technology, the assertion of our own patents by way of counter-claim may be ineffective. Infringement claims may require us to enter into license arrangements or result in protracted and costly litigation, regardless of the merits of these claims. Any necessary licenses may not be available or, if available, may not be obtainable on commercially reasonable terms. If we cannot obtain necessary licenses on commercially reasonable terms, we may be forced to stop licensing our technology, and our business would be seriously harmed.

The future growth of our business depends in part on our ability to license to system OEMs and small-to-medium-sized semiconductor companies directly and to expand our sales geographically.

Historically, a substantial portion of our licensing revenues has been derived in any given period from a relatively small number of licensees. Because of the substantial license fees we charge, our customers tend to be large semiconductor companies or vertically integrated system OEMs. Part of our current growth strategy is to broaden the adoption of our products by small and mid-size companies by offering different versions of our products targeted at these companies. If we are unable to develop and market effectively our intellectual property through these models, our revenues will continue to be dependent on a smaller number of licensees and a less geographically dispersed pattern of licensees, which could materially harm our business and results of operations.

Our operating results are affected by the highly cyclical nature of the semiconductor industry.

We operate within the semiconductor industry which experiences significant fluctuations in sales and profitability. Downturns in the semiconductor industry are characterized by diminished product demand, excess customer inventories, accelerated erosion of prices and excess production capacity. Various market data suggests that the semiconductor industry may be facing such a negative cycle presently, especially in the global handset market. These factors could cause substantial fluctuations in our revenues and in our results of operations.

If we determine that our goodwill and intangible assets have become impaired, we may incur impairment charges, which would negatively impact our operating results.

Goodwill represents the excess of cost over the fair value of net assets acquired in business combinations. Under accounting principles generally accepted in the United States of America, we assess potential impairment of our goodwill and intangible assets at least annually, as well as on an interim basis to the extent that factors or indicators become apparent that could reduce the fair value of any of our businesses below book value. Impairment may result from significant changes in the manner of use of the acquired asset, negative industry or economic trends and significant underperformance relative to historic or projected operating results.

Cybersecurity threats or other security breaches could compromise sensitive information belonging to us or our customers and could harm our business and our reputation.

We store sensitive data, including intellectual property, proprietary business information and our customer and employee information. Despite our security measures, our information technology and infrastructure may be vulnerable to attacks by hackers or breached due to employee error, malfeasance or other disruptions that could result in unauthorized disclosure or loss of sensitive data. Because the techniques used to obtain unauthorized access to networks, or to sabotage systems, change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. Furthermore, in the operation of our business we also use third-party vendors that store certain sensitive data. Any security breach of our own or a third-party vendor's systems could cause us to be non-compliant with applicable laws or regulations, subject us to legal claims or proceedings, disrupt our operations, damage our reputation, and cause a loss of confidence in our products and services, any of which could adversely affect our business.

Our corporate tax rate may increase, which could adversely impact our cash flow, financial condition and results of operations.

We have significant operations in Israel, as well operations in the Republic of Ireland and France. A substantial portion of our taxable income historically has been generated in Israel. Currently, our Israeli and Irish subsidiaries are taxed at rates lower than the U.S. tax rates. If our Israeli and Irish subsidiaries were no longer to qualify for these lower tax rates or if the applicable tax laws were rescinded or changed, our operating results could be materially adversely affected. Moreover, if U.S. or other authorities were to change applicable tax laws or successfully challenge the manner in which our subsidiaries' profits are currently recognized, our overall tax expenses could increase, and our business, cash flow, financial condition and results of operations could be materially adversely affected. Also our taxes on the Irish interest income may be double taxed both in Ireland and in the U.S. due to U.S. tax regulations and Irish tax restrictions on net operating losses to offset interest income. In addition, our Israeli interest income also may be taxed both in Israel and the U.S due to different Controlled Foreign Corporation rules.

The anti-takeover provisions in our certificate of incorporation and bylaws could prevent or discourage a third party from acquiring us.

Our certificate of incorporation and bylaws contain provisions that may prevent or discourage a third party from acquiring us, even if the acquisition would be beneficial to our stockholders. Our board of directors also has the authority to fix the rights and preferences of shares of our preferred stock and to issue such shares without a stockholder vote. Our bylaws also place limitations on the authority to call a special meeting of stockholders. We have advance notice procedures for stockholders desiring to nominate candidates for election as directors or to bring matters before an annual meeting of stockholders. In addition, these factors may also adversely affect the market price of our common stock, and the voting and other rights of the holders of our common stock.

Our stock price may be volatile so you may not be able to resell your shares of our common stock at or above the price you paid for them.

Announcements of developments related to our business, announcements by competitors, quarterly fluctuations in our financial results, changes in the general conditions of the highly dynamic industry in which we compete or the national economies in which we do business, and other factors could cause the price of our common stock to fluctuate, perhaps substantially. For example, if we fail to achieve our near term financial guidance or longer term 2022 strategic goals announced at our analysts day in January 2019, our stock price may significantly decline. In addition, in recent years, the stock market has experienced extreme price fluctuations, which have often been unrelated to the operating performance of affected companies. These factors and fluctuations could have a material adverse effect on the market price of our common stock.

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

The table below sets forth the information with respect to repurchases of our common stock during the three months ended March 31, 2020.

Period	(a) Total Number of Shares Purchased	(b) Average Price Paid per Share	(c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	(d) Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs (1)
Month #1 (January 1, 2020 to January 31, 2020)	—	—	—	—
Month #2 (February 1, 2020 to February 29, 2020)	—	—	—	700, 000
Month #3 (March 1, 2020 to March 31, 2020)	202,392	$ 23.62	202,392	497,608
TOTAL	202,392	$ 23.62	202,392	497,608(2)

(1) In August 2008, we announced that our board of directors approved a share repurchase program for up to one million shares of common stock which was further extended collectively by an additional 5,700,000 shares in 2010, 2013, 2014 and 2018. In February 2020, our board of directors authorized the repurchase of an additional 700,000 shares of common stock under our share repurchase program.

(2) The number represents the number of shares of our common stock that remain available for repurchase pursuant to our share repurchase program.

Item 3. DEFAULTS UPON SENIOR SECURITIES

Not applicable.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

Item 5. OTHER INFORMATION

Not applicable.

Item 6. EXHIBITS

Exhibit No.	Description
31.1	Rule 13a14(a)/15d14(a) Certification of Chief Executive Officer
31.2	Rule 13a14(a)/15d14(a) Certification of Chief Financial Officer
32	Section 1350 Certification of Chief Executive Officer and Chief Financial Officer
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

SIGNATURES

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

	CEVA, INC.
Date: May 11, 2020	By: /s/ GIDEON WERTHEIZER Gideon Wertheizer Chief Executive Officer (principal executive officer)
Date: May 11, 2020	By: /s/ YANIV ARIELI Yaniv Arieli Chief Financial Officer (principal financial officer and principal accounting officer)

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO

SECTION 302(a) OF THE SARBANES-OXLEY ACT OF 2002

I, Gideon Wertheizer, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of CEVA, Inc. (the “Company”);

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 13a15(e) and 15d15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a15(f) and 15d15(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 11, 2020

/s/ GIDEON WERTHEIZER

Gideon Wertheizer

Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO SECTION 302(a) OF THE SARBANES-OXLEY ACT OF 2002

I, Yaniv Arieli, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of CEVA, Inc. (the “Company”);

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 13a15(e) and 15d15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a15(f) and 15d15(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 11, 2020

/s/ YANIV ARIELI

Yaniv Arieli

Chief Financial Officer

Exhibit 32

CERTIFICATION

PURSUANT TO 18 U.S.C. SECTION 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 CEVA, Inc. (the “Company”) for the quarter ended March 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Gideon Wertheizer, Chief Executive Officer of the Company, and Yaniv Arieli, Chief Financial Officer of the Company, each hereby certifies, that:

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

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

This certification will not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section. This certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the Company specifically incorporates it by reference.

Date: May 11, 2020

/s/ GIDEON WERTHEIZER
Gideon Wertheizer
Chief Executive Officer

/s/ YANIV ARIELI
Yaniv Arieli
Chief Financial Officer