UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2020

OR

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

For the transition period from

Commission File Number: 001-38952

CAMBIUM NETWORKS CORPORATION
(Exact Name of Registrant as Specified in its Charter)

Cayman Islands	**Not Applicable**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
c/o Cambium Networks, Inc. **3800 Golf Road, Suite 360** **Rolling Meadows, Illinois 60008**	**(345) 943-3100**
(Address of principal executive offices, including zip code)	**(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
Ordinary shares, $0.0001 par value	CMBM	Nasdaq Global Market

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

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

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

Large accelerated filer	☐	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 ☒

As of November 1, 2020 the registrant had 25,708,837 shares of ordinary shares, $0.0001 par value per share, outstanding.

Table of Contents

Note regarding forward-looking statements

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of the federal securities laws. All statements other than statements of historical fact contained in this Quarterly Report on Form 10-Q, including statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, forward-looking statements may be identified by terms such as “may,” “should,” “expects,” “plans,” “anticipates,” “could,” “intends,” “target,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this quarterly report and are subject to a number of risks, uncertainties and assumptions. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, they should not be relied upon as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Some of the key factors that could cause actual results to differ from our expectations include:

- the unpredictability of our operating results;
- our inability to predict and respond to emerging technological trends and network operators’ changing needs;
- the impact of actual or threatened health epidemics and other outbreaks including the impact of the COVID-19 pandemic;
- our reliance on third-party manufacturers, which subjects us to risks of product delivery delays and reduced control over product costs and quality;
- our reliance on distributors and value-added resellers for the substantial majority of our sales;
- the inability of our third-party logistics and warehousing providers to deliver products to our channel partners and network operators in a timely manner;
- the quality of our support and services offerings;
- our expectations regarding outstanding litigation;
- our or our distributors’ and channel partners’ inability to attract new network operators or sell additional products to network operators that currently use our products;
- the difficulty of comparing or forecasting our financial results on a quarter-by-quarter basis due to the seasonality of our business;
- our limited or sole source suppliers’ inability to produce third-party components to build our products;
- the technological complexity of our products, which may contain undetected hardware defects or software bugs;
- our channel partners’ inability to effectively manage inventory of our products, timely resell our products or estimate expected future demand;
- credit risk of our channel partners, which could adversely affect their ability to purchase or pay for our products;
- our inability to manage our growth and expand our operations;
- unpredictability of sales and revenues due to lengthy sales cycles;
- our inability to maintain an effective system of internal controls, produce timely and accurate financial statements or comply with applicable regulations;
- our reliance on the availability of third-party licenses;
- risks associated with international sales and operations;
- current or future unfavorable economic conditions, both domestically and in foreign markets; and
- our inability to obtain intellectual property protections for our products.

We caution you that the foregoing list may not contain all of the forward-looking statements made in this Quarterly Report on Form 10-Q.

Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events or otherwise.

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements

Cambium Networks Corporation
Condensed Consolidated Balance Sheets
(in thousands, except for share and per share data)

	December 31, 2019	September 30, 2020 (unaudited)
ASSETS		
Current assets		
Cash	$ 19,346	$ 50,120
Receivables, net of allowances	58,628	53,866
Inventories, net	41,670	29,054
Recoverable income taxes	—	361
Prepaid expenses	5,323	4,036
Other current assets	4,350	5,074
Total current assets	129,317	142,511
Noncurrent assets		
Property and equipment, net	8,314	7,627
Software, net	3,395	3,045
Operating lease assets	6,872	5,494
Intangible assets, net	15,100	13,446
Goodwill	8,552	9,842
Deferred tax assets, net	929	1,276
Other noncurrent assets	—	291
TOTAL ASSETS	$ 172,479	$ 183,532
LIABILITIES AND EQUITY		
Current liabilities		
Accounts payable	$ 25,214	$ 25,107
Accrued liabilities	15,034	19,771
Employee compensation	4,652	9,169
Current portion of long-term external debt, net	9,454	9,454
Deferred revenues	7,430	6,731
Other current liabilities	6,084	6,218
Total current liabilities	67,868	76,450
Noncurrent liabilities		
Long-term external debt, net	54,158	47,068
Deferred revenues	4,852	4,278
Noncurrent operating lease liabilities	5,335	3,689
Deferred tax liabilities, net	337	—
Other noncurrent liabilities	—	1,451
Total liabilities	132,550	132,936
Shareholders' equity		
Share capital; $0.0001 par value; 500,000,000 shares authorized at December 31, 2019 and September 30, 2020; 25,753,603 shares issued and 25,672,983 outstanding at December 31, 2019 and 25,791,702 shares issued and 25,700,741 outstanding at September 30, 2020	3	3
Additional paid in capital	104,773	107,641
Treasury shares, at cost, 80,620 shares at December 31, 2019 and 90,961 shares at September 30, 2020	(1,094)	(1,063)
Accumulated deficit	(63,374)	(55,305)
Accumulated other comprehensive loss	(379)	(680)
Total shareholders' equity	39,929	50,596
TOTAL LIABILITIES AND EQUITY	$ 172,479	$ 183,532

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

Cambium Networks Corporation
Condensed Consolidated Statements of Operations
(in thousands, except for share and per share data)
(unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2020	2019	2020
Revenues	$ 65,703	$ 72,971	$ 202,966	$ 195,654
Cost of revenues	33,871	36,902	105,032	98,481
Gross profit	31,832	36,069	97,934	97,173
Operating expenses				
Research and development	9,895	10,213	35,566	31,326
Sales and marketing	10,363	8,293	34,808	26,632
General and administrative	5,996	8,604	24,189	21,675
Depreciation and amortization	1,449	1,643	3,957	5,038
Total operating expenses	27,703	28,753	98,520	84,671
Operating income (loss)	4,129	7,316	(586)	12,502
Interest expense, net	2,105	1,259	6,674	4,129
Other expense, net	61	318	251	80
Income (loss) before income taxes	1,963	5,739	(7,511)	8,293
Provision for income taxes	3	144	9,041	224
Net income (loss)	$ 1,960	$ 5,595	$ (16,552)	$ 8,069
Earnings (loss) per share				
Basic	$ 0.08	$ 0.22	$ (0.93)	$ 0.31
Diluted	$ 0.08	$ 0.21	$ (0.93)	$ 0.31
Weighted-average number of shares outstanding to compute net earnings (loss) per share				
Basic	25,634,417	25,691,357	17,743,703	25,683,969
Diluted	25,634,417	26,346,673	17,743,703	25,867,164
Share-based compensation included in costs and expenses:				
Cost of revenues	$ 14	$ 16	$ 196	$ 51
Research and development	199	396	5,062	1,186
Sales and marketing	374	251	3,981	726
General and administrative	241	291	7,667	742
Total share-based compensation	$ 828	$ 954	$ 16,906	$ 2,705

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

Cambium Networks Corporation
Condensed Consolidated Statements of Comprehensive Income (Loss)
(in thousands)
(unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2020	2019	2020
Net income (loss)	$ 1,960	$ 5,595	$ (16,552)	$ 8,069
Other comprehensive (loss) income				
Foreign currency translation adjustment	(166)	103	(140)	(301)
Comprehensive income (loss)	**$ 1,794**	**$ 5,698**	**$ (16,692)**	**$ 7,768**

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

Cambium Networks Corporation
Condensed Consolidated Statements of Shareholders' (Deficit) Equity
(in thousands)
(unaudited)

	Three Months Ended September 30, 2019							
	Share Capital							
	Shares	Amount	Additional paid in capital	Capital contribution	Treasury shares	Accumulated deficit	Accumulated other comprehensive loss	Total shareholders' equity
Balance at June 30, 2019	25,632	$ 3	$ 103,543	$ —	$ (1,133)	$ (64,285)	$ (195)	$ 37,933
Net income	—	—	—	—	—	1,960	—	1,960
Share-based compensation	—	—	828	—	—	—	—	828
Additional issuance costs in initial public offering	—	—	(361)	—	—	—	—	(361)
Treasury shares withheld for net settlement in Recapitalization	2	—	(18)	—	39	—	—	21
Foreign currency translation	—	—	—	—	—	—	(166)	(166)
Balance at September 30, 2019	25,634	$ 3	$ 103,992	$ —	$ (1,094)	$ (62,325)	$ (361)	$ 40,215

	Nine Months Ended September 30, 2019							
	Share Capital							
	Shares	Amount	Additional paid in capital	Capital contribution	Treasury shares	Accumulated deficit	Accumulated other comprehensive loss	Total shareholders' (deficit) equity
Balance at December 31, 2018	77	$ —	$ 772	$ 24,651	$ —	$ (45,773)	$ (221)	$ (20,571)
Net loss	—	—	—	—	—	(16,552)	—	(16,552)
Share-based compensation	—	—	16,906	—	—	—	—	16,906
Issuance of shares in Recapitalization and related reclassification	19,848	2	24,651	(24,651)	—	—	—	2
Issuance of shares in initial public offering, net of issuance costs of $7,866	5,800	1	61,373	—	—	—	—	61,374
Treasury shares withheld for net settlement in Recapitalization	(91)	—	290	—	(1,094)	—	—	(804)
Foreign currency translation	—	—	—	—	—	—	(140)	(140)
Balance at September 30, 2019	25,634	$ 3	$ 103,992	$ —	$ (1,094)	$ (62,325)	$ (361)	$ 40,215

	Three Months Ended September 30, 2020							
	Share Capital							
	Shares	Amount	Additional paid in capital	Capital contribution	Treasury shares	Accumulated deficit	Accumulated other comprehensive loss	Total shareholders' equity
Balance at June 30, 2020	25,684	$ 3	$ 106,524	$ —	$ (1,048)	$ (60,900)	$ (783)	$ 43,796
Net income	—	—	—	—	—	5,595	—	5,595
Share-based compensation	—	—	954	—	—	—	—	954
Issuance of vested shares	4	—	—	—	—	—	—	—
Treasury shares withheld for net settlement	(1)	—	—	—	(15)	—	—	(15)
Share options exercised	14	—	163	—	—	—	—	163
Foreign currency translation	—	—	—	—	—	—	103	103
Balance at September 30, 2020	25,701	$ 3	$ 107,641	$ —	$ (1,063)	$ (55,305)	$ (680)	$ 50,596

	Nine Months Ended September 30, 2020							
	Share Capital							
	Shares	Amount	Additional paid in capital	Capital contribution	Treasury shares	Accumulated deficit	Accumulated other comprehensive loss	Total shareholders' equity
Balance at December 31, 2019	25,673	$ 3	$ 104,773	$ —	$ (1,094)	$ (63,374)	$ (379)	$ 39,929
Net income	—	—	—	—	—	8,069	—	8,069
Share-based compensation	—	—	2,705	—	—	—	—	2,705
Issuance of vested shares	24	—	—	—	—	—	—	—
Treasury shares withheld for net settlement	(10)	—	—	—	31	—	—	31
Share options exercised	14	—	163	—	—	—	—	163
Foreign currency translation	—	—	—	—	—	—	(301)	(301)
Balance at September 30, 2020	25,701	$ 3	$ 107,641	$ —	$ (1,063)	$ (55,305)	$ (680)	$ 50,596

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

Cambium Networks Corporation
Condensed Consolidated Statements of Cash Flows
(in thousands)
(unaudited)

	Nine Months ended September 30,	
	2019	2020
Cash flows from operating activities:		
Net (loss) income	$ (16,552)	$ 8,069
Adjustments to reconcile net (loss) income to net cash (used in) provided by operating activities:		
Depreciation	2,633	2,817
Amortization of software and intangible assets	1,688	2,688
Amortization of debt issuance costs	1,005	409
Share-based compensation	16,906	2,705
Deferred income taxes	7,499	(684)
Provision for inventory excess and obsolescence	325	1,933
Other	81	571
Change in assets and liabilities:		
Receivables	653	7,931
Inventories	(8,662)	10,567
Accounts payable	(1,657)	175
Accrued employee compensation	343	5,313
Accrued liabilities	164	(147)
Accrued Sponsor interest and payables	(5,457)	—
Other assets and liabilities	(1,561)	(528)
Net cash (used in) provided by operating activities	(2,592)	41,819
Cash flows from investing activities:		
Purchase of property and equipment	(2,535)	(2,432)
Purchase of software	(872)	(921)
Cash paid for acquisition	(2,000)	(334)
Net cash used in investing activities	(5,407)	(3,687)
Cash flows from financing activities:		
Proceeds from issuance of revolver debt	—	10,000
Repayment of term loan	(27,837)	(7,500)
Repayment of revolver debt	(10,000)	(10,000)
Payment of debt issuance costs	(336)	—
Proceeds from initial public offering, net of underwriting commission and fees	65,988	—
Taxes paid from shares withheld	(802)	31
Proceeds from share option exercises	—	163
Payment of deferred offering costs	(4,435)	—
Net cash provided by (used in) financing activities	22,578	(7,306)
Effect of exchange rate on cash	(70)	(52)
Net increase in cash	14,509	30,774
Cash, beginning of period	4,441	19,346
Cash, end of period	$ 18,950	$ 50,120
Supplemental disclosure of cash flow information:		
Income taxes paid	$ 1,432	$ 1,626
Interest paid	$ 5,270	$ 3,138
Significant non-cash activities:		
Issuance of shares for unreturned capital and accumulated yield	$ 49,252	$ —
Deferred offering costs included in accrued liabilities	$ 179	$ —

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

Note 1. Business and significant accounting policies

Business

Cambium Networks Corporation ("Cambium" or the "Company"), incorporated under the laws of the Cayman Islands, is a holding company whose principal operating entities are Cambium Networks, Ltd. (UK), Cambium Networks, Inc. (USA), and Cambium Networks Private Limited (India). On October 28, 2011, Cambium acquired the point-to-point ("PTP") and point-to-multi-point ("PMP") businesses from Motorola Solutions, Inc. The acquisition was funded by investment funds affiliated with Vector Capital ("Sponsor") and Cambium became the renamed entity subsequent to the acquisition.

Cambium Networks Corporation and its wholly owned subsidiaries provide wireless broadband networking solutions for network operators, including medium-sized wireless internet service providers, enterprises and government agencies.

Basis of Presentation

The unaudited condensed consolidated financial statements include the accounts of Cambium Networks Corporation and its wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated. The condensed consolidated financial statements as of September 30, 2020, and for the three-month and nine-month periods ended September 30, 2019 and 2020, and the related notes are unaudited. The unaudited condensed consolidated financial statements have been prepared on the same basis as the annual audited consolidated financial statements, and, in the opinion of management, reflect all adjustments, which comprise only normal recurring adjustments necessary to state fairly the Company's financial position as of September 30, 2020 and results of operations for the three-month and nine-month periods ended September 30, 2019 and 2020 and cash flows for the nine-month periods ended September 30, 2019 and 2020. The condensed consolidated balance sheet as of December 31, 2019 has been derived from the audited financial statements at that date.

Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principals generally accepted in the United States ("U.S. GAAP") have been condensed or omitted. The condensed consolidated financial statements contained herein should be read in conjunction with the consolidated financial statements and related notes thereto for the year ended December 31, 2019 included in the Company's annual report on Form 10-K and filed with the SEC on March 23, 2020. The results of operations for the three-month and nine-month periods ended September 30, 2020 are not necessarily indicative of the operating results to be expected for the full year.

The Company has reclassified certain prior period amounts in the condensed consolidated statement of cash flows to conform to the current period's presentation. Specifically, within the condensed consolidated statements of cash flows, the provision for inventory excess and obsolescence has been reclassified from "Other" to "Provision for inventory excess and obsolescence". This change in classification does not affect previously reported cash flows from operating activities in the condensed consolidated statements of cash flows.

Update to Significant Accounting Policies

There have been no material changes to the Company's signifiant accounting policies disclosed in the 2019 Form 10-K, Part II, Item 8.

Receivables and concentration of credit risk

Trade accounts receivable are recorded at invoiced amounts, net of the allowance for credit losses. The Company considers the credit risk of all customers and regularly monitors credit risk exposure in its trade receivables. The Company's standard credit terms with its customers are generally net 30 to 60 days. The Company had one customer representing more than 10% of trade receivables at December 31, 2019 and one customer at September 30, 2020. The Company had two customers representing more than 10% of revenues for the three-month period ended September 30, 2019 and two customers representing more than 10% of revenues for the three-month period ended September 30, 2020. The Company had two customers representing more than 10% of revenues for the nine-month period ended September 30, 2019 and two customers representing more than 10% of revenues for the nine-month period ended September 30, 2020.

The Company establishes an allowance for credit losses to present the net amount of accounts receivable expected to be collected. The allowance is determined by using the loss-rate method, which requires an estimation of loss rates based upon historical loss experience adjusted for factors that are relevant to determining the expected collectability of accounts receivables. Some of these factors include macroeconomic conditions that correlate with historical loss experience, delinquency trends, aging behavior of receivables, and credit and liquidity indicators for individual customers.

Recently adopted accounting pronouncements

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments – Credit Losses: Measurement of Credit Losses on Financial Intruments*, and subsequent amendments to the initial guidance: ASUs 2018-19, 2019-04, 2019-05, 2019-11, and 2020-02 (collectively, "Topic 326"). Topic 326 sets forth an expected credit loss model which requires the measurement of expected credit losses for financial instruments based on historical experience, current conditions and reasonable and supportable forecasts. This replaces the existing incurred loss model and is applicable to the measurement of credit losses on financial assets measured at amortized cost, including trade accounts receivable, and certain off-balance sheet credit exposures. The Company adopted Topic 326 on January 1, 2020 using the modified retrospective transition method for all financial assets measured at amortized costs, which is primarily trade accounts receivable. Results for reporting periods beginning after January 1, 2020 are presented under Topic 326 while prior period amounts continue to be reported in accordance with previously applicable U.S. GAAP. The adoption of Topic 326 did not have a material impact on the condensed condolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, *Intangibles – Goodwill and Other Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs incurred in a Cloud Computing Arrangement That is a Service Contract*. The amendments in this update align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by the amendments in this update. The Company adopted this ASU effective January 1, 2020 applying the changes prospectively to all implemenation costs incurred after this date. The adoption of ASU 2018-15 did not have a material impact on the condensed consolidated financial statements as there are no large implementations planned for 2020.

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reportin*g. This update provides optional expedients and exceptions for applying generally accepted accounting principles to certain contract modification and hedging relationships that reference London Inter-bank Offered Rate (LIBOR) or another reference rate that is expected to be discontinued. The guidance is effective for all entities as of March 12, 2020 through December 31, 2022, when the reference rate replacement activity is expected to be completed. The adoption of ASU 2020-04 did not have an impact on the condensed consolidated financial statements.

Recently issued accounting pronouncements not yet adopted

In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*, as part of its Simplification Initiative to reduce the cost and complexity in accounting for income taxes. ASU 2019-12 removes certain exceptions related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period, and the recognition of deferred tax liabilities for outside basis differences. ASU 2019-12 also amends other aspects of the guidance to help simplify and promote consistent application of GAAP. The guidance is effective for interim and annual periods beginning after December 15, 2020, with early adoption permitted. The Company is assessing the impact of adopting this standard on its condensed consolidated financial statements.

Note 2. Business Combinations

In August 2019, the Company acquired select assets and assumed select liabilities of the Xirrus Wi-Fi products and cloud services business from Riverbed Technology, Inc. Xirrus has a portfolio of high performance enterprise Wi-Fi access points and subscription services. The Company paid $2.0 million upon closing and through February 2020, paid the entire additional $3.0 million contingent consideration that was subject to attaining certain booking targets related to sales of Xirrus products, which targets were met by Decemebr 31, 2019. This acquisition will enhance and accelerate the Company's existing network service application capabilities.

The Company accounts for business combinations in accordance with ASC 805, *Business Combinations*. The Company recorded the acquisition using the acquisition method of accounting and recognized assets and liabilities at their fair value as of the date of acquisition. The Company based its preliminary allocation of the puchase price on estimates and assumptions known at the date of acquisition that are subject to change within the purchase price allocation period, which is generally one year from the acquisition date. The Company's review of the purchase price allocation was completed in the period ended June 30, 2020. The Company determined the estimated fair value of identifiable intangible assets acquired primarily using an income approach.

The following table summarizes the final allocation of the purchase price (in thousands):

Goodwill	$	1,782
Customer relationships		7,670
Unpatented technology		540
Deferred revenue		(7,460)
Other net assets acquired		2,468
Total purchase price	$	5,000

The results from this acquisition have been included in the Company's condensed consolidated financial statements since the closing of the acquisition.

Note 3. Fair value

The fair value of the Company's external debt under its Credit Agreement approximates its carrying value because the terms and conditions approximate the terms and conditions of current market debt available to the Company. Due to the floating interest rate the debt is classified as Level 2 of the fair value hierarchy. The external debt was estimated based on the current rates offered to the Company for debt with the same remaining maturities. The fair value of the Company's Credit Agreement was $65.3 million and $57.8 million as of December 31, 2019 and September 30, 2020, respectively.

The fair value of cash approximates its carrying value (Level 1 of the fair value hierarchy).

The Company's Level 3 liability for contingent consideration of $3.0 million that was added during the three-month period ended September 30, 2019 was fully paid to Riverbed Technology, Inc. as of February 2020 in consideration for the sale to the Company of the Xirrus business. The entire $3.0 million was earned as of December 31, 2019 and the Company made a payment of $2.7 million in November 2019 and paid the remaining $0.3 million in February 2020.

Note 4. Balance sheet components

Accounts Receivable, net

The Company's accounts receivable arises from sales on credit to customers. The Company establishes an allowance for credit losses to present the net amount of accounts receivable expected to be collected. With the adoption of Topic 326 on January 1, 2020, the allowance is determined by using the loss-rate method, which requires an estimation of loss rates based upon historical loss experience adjusted for factors that are relevant to determining the expected collectability of accounts receivables. Some of these factors include macroeconomic conditions that correlate with historical loss experience, delinquency trends, aging behavior of receivables and credit and liquidity indicators for individual customers. Prior to the adoption, the Company established the allowance under an incurred loss mode, considering the aging of the accounts receivable, the credit worthiness of each distributor based on payment history, and general economic factors, among other factors.

The components of accounts receivable, net are as follows (in thousands):

		December 31, 2019		September 30, 2020 (unaudited)
Trade accounts receivable	$	58,774	$	54,322
Other receivables		434		454
Total receivables		59,208		54,776
Less: Allowance for credit losses		(580)		(910)
Receivables, net	$	58,628	$	53,866

The allowance for credit losses activity was as follows (in thousands):

	Year ended December 31, 2019	Nine months ended September 30, 2020
		(unaudited)
Beginning balance	$ 503	$ 580
Increase, charged to expense	333	210
Recoveries	(204)	(71)
Provision for late fee charges	—	191
Amounts written-off	(52)	—
Ending balance	$ 580	$ 910

Inventories, net

Inventories, net consisted of the following (in thousands):

	December 31, 2019	September 30, 2020
		(unaudited)
Finished goods	$ 42,402	$ 29,046
Raw materials	4,227	5,900
Gross inventory	46,629	34,946
Less: Excess and obsolete provision	(4,959)	(5,892)
Inventories, net	$ 41,670	$ 29,054

The following table reflects the activity in the Company's inventory excess and obsolete provision (in thousands):

	Year ended December 31, 2019	Nine months ended September 30, 2020
		(unaudited)
Beginning balance	$ 3,950	$ 4,959
Inventory written off	(149)	(1,537)
Increase in excess and obsolete provision	1,158	2,470
Ending balance	$ 4,959	$ 5,892

Accrued liabilities

Accrued liabilities consisted of the following (in thousands):

	December 31, 2019	September 30, 2020
		(unaudited)
Accrued goods and services	$ 8,364	$ 8,436
Accrued inventory purchases	3,094	4,261
Accrued customer rebates	3,569	7,064
Other	7	10
Accrued liabilities	$ 15,034	$ 19,771

Accrued warranty

Provisions for warranty claims are primarily related to our hardware products and are recorded at the time products are sold. The change to accrued warranty was as follows (in thousands):

	Year ended December 31, 2019	Nine months ended September 30, 2020
		(unaudited)
Beginning balance	$ 488	$ 706
Warranties assumed due to acquisition	180	1,174
Fulfillment of assumed acquisition warranty	—	(387)
Provision increase, net	38	282
Ending balance	$ 706	$ 1,775

At December 31, 2019, $0.7 million is included in Other current liabilities on the Company's condensed consolidated balance sheet. At September 30, 2020, $1.1 million is included in Other current liabilities and $0.7 million is included in Other noncurrent liabilities on the Company's condensed consolidated balance sheet.

Note 5. Property and equipment

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

	Useful Life	December 31, 2019	September 30, 2020
			(unaudited)
Equipment and tooling	3 to 5 years	$ 22,150	$ 23,729
Computer equipment	3 to 5 years	2,888	3,039
Furniture and fixtures	10 years	749	742
Leasehold improvements	2 to 3 years	—	282
Total cost		25,787	27,792
Less: Accumulated depreciation		(17,473)	(20,165)
Property and equipment, net		$ 8,314	$ 7,627

Total depreciation expense was $0.9 million and $0.9 million for the three-month periods ended September 30, 2019 and 2020, respectively and $2.6 million and $2.8 million for the nine-month periods ended September 30, 2019 and 2020, respectively.

Note 6. Software

Software consisted of the following (in thousands):

		December 31, 2019			September 30, 2020		
	Useful Life	Gross carrying amount	Accumulated amortization	Net balance	Gross carrying amount	Accumulated amortization	Net balance
					(unaudited)	(unaudited)	(unaudited)
Acquired and Software for internal use	3 to 7 years	$ 15,870	$ (13,471)	$ 2,399	$ 15,678	$ (14,032)	$ 1,646
Software marketed for external sale	3 years	1,805	(809)	996	2,675	(1,276)	1,399
Total		$ 17,675	$ (14,280)	$ 3,395	$ 18,353	$ (15,308)	$ 3,045

Amortization of acquired and internal use software is computed using the straight-line method over an estimated useful life of generally three to seven years. Amortization expense recognized on acquired and internal use software is reflected in depreciation and amortization in the condensed consolidated statements of operations. Amortization expense was $0.1 million and $0.2 million for the three-month periods ended September 30, 2019 and 2020, respectively, and $0.3 million and $0.6 million for the nine-month periods ended September 30, 2019 and 2020, respectively.

Amortization expense recognized on software to be sold or marketed externally was $0.2 million and $0.2 million for the three-month periods ended September 30, 2019 and 2020, respectively, and $0.4 million and $0.5 million for the nine-month periods ended September 30, 2019 and 2020, respectively, and is included in cost of revenues on the condensed consolidated statements of operations.

Based on capitalized software assets at September 30, 2020, estimated amortization expense in future fiscal years is as follows (unaudited and in thousands):

Year ending December 31,	Acquired and internal use software	Software marketed for external use	Total
2020 (October - December)	$ 180	$ 184	$ 364
2021	683	555	1,238
2022	411	395	806
2023	162	234	396
2024	68	31	99
Thereafter	142	—	142
Total amortization	$ 1,646	$ 1,399	$ 3,045

Note 7. Goodwill and Intangible Assets

When the Company acquired the trade assets of Motorola Solutions, Inc.’s wireless point-to-point and point-to-multi-point businesses, the transaction generated goodwill and certain intangible assets. The goodwill associated with this transaction was recorded by Cambium Networks Corporation and allocated to Cambium Networks, Ltd. and Cambium Networks, Inc. using a revenue and asset allocation method. Although goodwill has been allocated to two operating subsidiaries, as noted in Note 16 – Segment information and revenues by geography, the Company operates as one operating segment and one reporting unit and therefore, goodwill is reported, and impairment testing performed, at the Cambium Networks Corporation consolidated level.

See Note 2 – Business combinations for further information regarding the acquisition completed during 2019.

The change in the carrying amount of goodwill for the year ended and nine-month period ended was as follows (in thousands):

	December 31, 2019	September 30, 2020
		(unaudited)
Beginning balance	$ 8,060	$ 8,552
Additions attributable to acquisition	492	—
Acquisition adjustments	—	1,290
Ending balance	$ 8,552	$ 9,842

The Company tests goodwill and intangible assets for impairment annually on December 31 and more frequently if impairment indicators exist. Accordingly, the Company performs quarterly qualitative assessments of significant events and circumstances such as a reporting unit’s historical and current results, assumptions regarding future performance, strategic initiatives and overall economic factors, including the impact of the current global outbreak of the coronavirus (or COVID-19) and macro-economic developments, to determine the existence of potential indicators of impairment and assess if it is more likely than not that the fair value of the reporting unit or intangible asset is less than their carrying value. If indicators of impairment are identified, a quantitative impairment test is performed.

Qualitative assessments for the quarter did not indicate the existence of impairment indicators. Based on the operating results for the nine-month period ended September 30, 2020 and other considerations, the Company believes that it is more likely than not that the enterprise value for its one reporting unit and the fair value of intangibles is still greater than their carrying values. Accordingly, no goodwill impairment indicators were present at September 30, 2020 that would necessitate an interim impairment assessment. The Company will continue to monitor business performance and economic conditions, particularly the impact of the COVID-19 pandemic, throughout 2020 to determine if an interim evaluation should be conducted.

The useful life, gross carrying value, accumulated amortization, and net balance for each major class of definite-lived intangible assets at each balance sheet date were as follows (in thousands):

		December 31, 2019			September 30, 2020		
	Useful Life	Gross carrying amount	Accumulated amortization	Net balance	Gross carrying amount (unaudited)	Accumulated amortization (unaudited)	Net balance (unaudited)
Unpatented technology	3 - 7 years	$ 14,660	$ (14,195)	$ 465	$ 14,660	$ (14,330)	$ 330
Customer relationships	5 - 18 years	19,300	(5,631)	13,669	19,300	(6,754)	12,546
Patents	7 years	11,300	(11,300)	—	11,300	(11,300)	—
Trademarks	10 years	5,270	(4,304)	966	5,270	(4,700)	570
Total		$ 50,530	$ (35,430)	$ 15,100	$ 50,530	$ (37,084)	$ 13,446

Intangible assets are amortized over their expected useful life and none are expected to have a significant residual value at the end of their useful life. Intangible assets amortization expense was $0.4 million and $0.6 million for the three-month periods ended September 30, 2019 and 2020, respectively, and $1.0 million and $1.7 million for the nine-month periods ended September 30, 2019 and 2020, respectively.

Based on capitalized intangible assets as of September 30, 2020, estimated amortization expense amounts in future fiscal years are as follows (unaudited and in thousands):

Year ending December 31,	Amortization
2020 (October - December)	$ 552
2021	2,118
2022	1,603
2023	1,498
2024	1,498
Thereafter	6,177
Total amortization	$ 13,446

Note 8. Debt

As of September 30, 2020, the Company had $57.8 million outstanding under its current term loan facility and $0.0 million in borrowings under its revolving credit facility. The Company has available $10.0 million under its revolving credit facility (unaudited).

The following table reflects the current and noncurrent portions of the external debt facilities at December 31, 2019 and September 30, 2020 (in thousands):

	December 31, 2019	September 30, 2020 (unaudited)
Term loan facility	$ 65,250	$ 57,750
Less debt issuance costs	(1,638)	(1,228)
Total debt	63,612	56,522
Less current portion of term facility	(10,000)	(10,000)
Current portion of debt issuance costs	546	546
Total long-term external debt, net	$ 54,158	$ 47,068

Secured credit agreement

Both the term loan facility and the revolving credit facility mature on December 22, 2022. Following the completion of the Third Amendment ("Third Amendment") to the December 21, 2017 credit agreement (as amended and restated, the "Credit Agreement") entered into on June 28, 2019, the total term loan commitment was reduced to $70.0 million and the revolving agreement had an available commitment of $10.0 million.

Interest accrues on the outstanding principal amount of the term loan on a quarterly basis and is equal to the three-month USD LIBOR rate plus a base rate of 4.75%, 4.25%, or 4.00%. The rate on the term loan at December 31, 2019 was 6.85%, was reduced to 6.0% on March 31, 2020, and remains at 6.0% at September 30, 2020 as a result of resetting the LIBOR rate applicable to the loan. In addition to paying interest on the outstanding principal under the term loan facility, the Company is required to pay a commitment fee in respect of the unutilized commitments under the revolving credit facility, payable quarterly in arrears. The Company is also required to pay letter of credit fees on the maximum amount available to be drawn under all outstanding letters of credit in an amount equal to the applicable margin on LIBOR based borrowings under the revolving credit facility on a per annum basis, payable in arrears, as well as customer fronting fees for the issuance of letters of credit and agency fees.

The Company is permitted to voluntarily reduce the unutilized portion of the commitment amount and repay outstanding loans under the Credit Agreement at any time without premium or penalty, other than customary breakage costs with respect to LIBOR based loans.

Maturities on the external debt outstanding at September 30, 2020 is as follows (unaudited and in thousands):

Year ending December 31,		
2020 (October - December)	$	2,500
2021		10,000
2022		45,250
Total	$	57,750

Borrowings under the Credit Agreement are secured by a first-priority lien on substantially all of the Company's assets, the equity interests in the Company's subsidiaries, and any intercompany debt. The Credit Agreement contains certain customary affirmative and negative covenants that are usual and customary for companies with similar credit ratings. As of September 30, 2020, the Company was in compliance with all affirmative and negative covenants (unaudited).

The Company's current debt covenant requirements for the next four quarters reflect the following limits, based on the time period noted, for compliance with the covenant.:

		Quarter ending			
Covenant	**Criteria**	**December 31, 2020**	**March 31, 2021**	**June 30, 2021**	**September 30, 2021**
Monthly minimum adjusted quick ratio	Min ratio	Non quarter-end months 1.00:1.00		Quarter-end months 1.15:1.00	
Quarterly consolidated fixed charge coverage ratio	Min ratio	1.25:1.00	1.25:1.00	1.25:1.00	1.25:1.00
Quarterly consolidated fixed charge coverage ratio	Time period	Trailing twelve-month			
Quarterly consolidated leverage ratio	Max ratio	2.50:1.00	2.25:1.00	2.25:1.00	2.00:1.00
Quarterly consolidated leverage ratio	Time period	Trailing twelve-month			

Expected Discontinuation of LIBOR

In July 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced it will no longer compel banks to submit rates for the calculation of LIBOR after 2021. The Alternative Reference Rates Committee has proposed the Secured Overnight Financing Rate ("SOFR") as its recommended alternative to LIBOR, and the first publication of SOFR rates was released in April 2018.

The Company is evaluating the potential impact of the transition from LIBOR as an interest rate benchmark to other potential alternative reference rates, including SOFR. The Company's Credit Agreement is currently indexed to LIBOR and the maturity date of the Credit Agreement extends beyond 2021. The Credit Agreement contemplates the discontinuation of LIBOR and provides options for the Company in such an event. The Company will continue to actively assess the related opportunities and risks involved in this transition.

Net interest expense, including bank charges and amortization of debt issuance costs on the external debt, was $2.1 million and $1.2 million for the three-month period ended September 30, 2019 and 2020, respectively, and $6.7 million and $4.1 million for the nine-month periods ended September 30, 2019 and 2020, respectively.

Note 9. Employee benefit plans

The Company's employee benefit plans currently consist of a defined contribution plan in the United States and a separate defined contribution plan in the UK. The Company does not offer any other postretirement benefit plans, such as retiree medical and dental benefits or deferred compensation agreements to its employees or officers.

U.S. plan

U.S. regular, full-time employees are eligible to participate in the Cambium Networks, Inc. 401(k) Plan, which is a qualified defined contribution plan under section 401(k) of the Internal Revenue Service Code. Under the Cambium Networks, Inc. 401(k) Plan, the Company contributes a dollar-for-dollar match of the first 4% an employee contributes to the plan. Employees are eligible to participate on the first day of the month following their date of hire and begin receiving company contributions three-months after they become eligible to participate in the plan. Company matching contributions are made each pay period, but the funds do not vest until the employee's second anniversary of employment with the Company. Employees are always fully vested in their own contributions. All contributions, including the Company match, are made in cash and invested in accordance with the participants' investment elections. Contributions made by the Company under the Cambium Networks, Inc. 401(k) Plan were $0.2 million and $0.3 million for the three-month periods ended September 30, 2019 and 2020, respectively, and $0.7 million and $0.8 million for the nine-month periods ended September 30, 2019 and 2020, respectively.

UK plan

Regular, full-time UK employees are eligible to participate in the Cambium Networks Ltd. Stakeholder Pension Scheme, which is a qualified defined contribution plan. Employees are eligible to participate on the first of the month following receipt of their enrollment form, and eligible employees are automatically enrolled in the plan at a default employee contribution rate of 3% and a company contribution rate of 5% of the employee's basic salary. The Company contribution rate increases by 1% for each additional 1% that the employee contributes up to a maximum of 7%. Company matching contributions vest immediately and employees are always vested in their own contributions. All contributions, including the Company match, are made in cash and deposited in the participant's account each pay period. The total contributed by the Company under this plan was $0.1 million and $0.1 million for the three-month periods ended September 30, 2019 and 2020, respectively, and $0.3 million and $0.3 million for the nine-month periods ended September 30, 2019 and 2020, respectively.

Note 10. Other expense

Net other expense was $0.1 million and $0.3 million for the three-month periods ended September 30, 2019 and 2020, respectively, and $0.3 million and $0.1 million for the nine-month periods ended September 30, 2019 and 2020, respectively, and represents foreign exchange gains and losses.

Note 11. Share-based compensation

2019 Share incentive plan

In June 2019, the Company's Board of Directors adopted, and its shareholders approved, the 2019 Share Incentive Plan ("2019 Plan"). The 2019 Plan provides for the grant of incentive share options, nonqualified share options, share appreciation rights, restricted share awards ("RSAs"), restricted share units ("RSUs"), other share-based awards and performance awards. The number of shares that were reserved for issuance under the 2019 Plan was 3,400,000, in addition to the 240,037 RSAs and RSUs the Company granted in substitution for unvested Class B Units or phantom units in Vector Cambium Holdings (Cayman), L.P. ("VCH L.P.") in connection with the Company's initial public offering ("IPO") based on a price of $12.00 per share ("Recapitalization Awards"). The share reserve under the 2019 Plan will be automatically increased on the first day of each fiscal year, beginning with the fiscal year ending December 31, 2020 and continue until, and including, the fiscal year ending December 31, 2029. The number of shares added annually will be equal to the lowest of 1,320,000 shares, 5% of the number of the Company's shares outstanding on the first day of such fiscal year, or an amount determined by the Board of Directors. On March 24, 2020, the Company registered 1,283,649 additional shares that may be issued under the 2019 Plan.

The Company's employees, officers, directors, consultants, and advisors are eligible to receive awards under the 2019 Plan. Incentive share options, however, may only be granted to its employees. Participants in the 2019 Plan will also consist of persons to whom Recapitalization Awards were granted.

The following table summarizes changes in the number of shares available for grant under the Company's equity incentive plans during the nine-month period ended September 30, 2020 (unaudited):

	Number of shares
Available for grant at December 31, 2019	426,022
Added to 2019 Share Incentive Plan	1,283,649
RSUs granted	(506,500)
Options granted	(560,000)
Shares withheld in settlement of taxes	10,341
Forfeitures	160,250
Available for grant at September 30, 2020	813,762

Share-based compensation

The following table shows total share-based compensation expense for the three-month and nine-month periods ended September 30, 2019 and 2020 (unaudited and in thousands):

	Three Months Ended September 30		Nine Months Ended September 30,	
	2019	2020	2019	2020
Cost of revenues	$ 14	$ 16	$ 196	$ 51
Research and development	199	396	5,062	1,186
Sales and marketing	374	251	3,981	726
General and administrative	241	291	7,667	742
Total share-based compensation expense	$ 828	$ 954	$ 16,906	$ 2,705

For the three-month period ended September 30, 2019 and 2020, the Company recorded corresponding tax benefits of $0.1 million and $0.2 million, respectively, and for the nine-month period ended September 30, 2019 and 2020, the Company recorded corresponding tax benefits of $0.5 million and $0.5 million, respectively.

The Company began recognizing share-based compensation expense during the three-month period ended June 30, 2019, the period in which the Company completed its Recapitalization and IPO. As a result, the Company recorded a one-time expense of $15.4 million of share-based compensation expense during the three-month period ended June 30, 2019 related to the Recapitalization Awards.

As of September 30, 2020, the Company estimates the pre-tax unrecognized compensation expense of $13.4 million related to all unvested share-based awards, including share options, restricted share units and restricted share awards will be recognized through the second quarter of 2029. The Company expects to satisfy the exercise of share options and future distributions of shares for restricted share units and restricted share awards by issuing new ordinary shares which have been reserved under the 2019 Plan.

The Company utilized a forfeiture rate of 5% during the nine-month period ended September 30, 2020 for estimating the forfeitures of share options and restricted share units granted.

Share options

The following is a summary of option activity for the Company's share incentive plans for the nine-month period ended September 30, 2020 (unaudited):

	Options		Weighted average exercise price	Weighted Average remaining contractual term (years)		Aggregate intrinsic value
Outstanding at December 31, 2019	2,920,500	$	10.40	9.6	$	1,932,000
Options granted	560,000	$	15.65	—	$	—
Options exercised	(13,594)	$	12.00	—	$	—
Options forfeited	(160,250)	$	10.76	—	$	—
Outstanding at September 30, 2020	3,306,656	$	11.26	9.1	$	18,548,215
Options exercisable at September 30, 2020	696,461	$	11.97	8.7	$	3,416,065
Options vested and expected to vest at September 30, 2020	3,119,588	$	11.24	9.1	$	17,576,131

Share options typically have a contractual term of ten years from grant date.

At September 30, 2020, the aggregate intrinsic value of options exercisable under the Company's share incentive plans was $3.4 million. The Company had 13,594 options exercised during the nine-month period ended September 30, 2020.

At September 30, 2020, there was $11.2 million in unrecognized pre-tax share-based compensation expense, net of estimated forfeitures, related to unvested share option awards. The unrecognized share-based compensation expense is expected to be recognized through the third quarter of 2024.

The fair value of options granted are estimated on the date of grant using the Black-Scholes option pricing model. The fair value of share options is being amortized on a straight-line basis over the requisite service period of the awards. The fair value of share options is estimated using the following weighted-average assumptions (unaudited):

	For the nine months ended September 30,			
		2019		2020
Expected dividend yield		—		—
Risk-free interest rate		1.82%		0.39%
Weighted-average expected volatility		40.8%		50.0%
Expected term (in years)		6.0		6.5
Weighted average grant-date fair value per share of options granted	$	5.00	$	7.56

Restricted shares

The following is a summary of restricted shares activity for the Company's share incentive plans for the nine-month period ended September 30, 2020 (unaudited):

	Units		Weighted average grant date fair value
RSU and RSA balance at December 31, 2019	257,119	$	12.00
RSUs and RSAs granted	506,500	$	4.56
RSUs and RSAs vested	(18,055)	$	12.00
RSUs and RSAs forfeited	(5,078)	$	12.00
RSU and RSA balance at September 30, 2020	740,486	$	6.91
RSUs and RSAs expected to vest at September 30, 2020	740,486	$	6.91

During the nine-month period ended September 30, 2020, 506,500 RSUs were granted under the Company's 2019 Share Incentive Plan and 18,055 RSUs vested. The Company withheld 3,889 of those shares to pay the employees' portion of the minimum payroll withholding taxes.

As of September 30, 2020, there was $2.2 million in unrecognized pre-tax compensation expense, net of estimated forfeitures, related to unvested share awards. The unrecognized compensation expense is expected to be recognized through the second quarter of 2029.

Employee share purchase plan

In June 2019, the Company's Board of Directors adopted, and its shareholders approved, the Employee Share Purchase Plan ("ESPP"). The ESPP was effective on June 25, 2019; however, no offering period or purchase period under the ESPP has begun as of September 30, 2020 and will only begin when determined by the Company's Board of Directors. During 2019, a total of 550,000 shares were made available under the ESPP. Per the ESPP, the number of shares that will be available for sale also includes an annual increase on the first day of each fiscal year beginning in 2020, equal to the lesser of: 275,000 shares; 1% of the outstanding shares as of the last day of the immediately preceding fiscal year, or such other amount as the administrator may determine. The purchase price of the shares will be 85% of the lower of the fair market value of our shares on the first trading day of each offering period or on the purchase date. On March 24, 2020, the Company registered 256,730 additional shares for the year ending December 31, 2020 that may be issued under the ESPP.

Note 12. Share capital - shares

The following table reflects the share capital activity (unaudited):

	Number of shares	Value (in thousands)
Balance at December 31, 2019	25,672,983	$ 3
Shares withheld for net settlement of shares issued	(10,341)	—
Share options exercised	13,594	—
Issuance of vested shares	24,505	—
Balance at September 30, 2020	25,700,741	$ 3

As of September 30, 2020, no dividends have been declared or paid.

Note 13. Earnings per share

Basic net earnings (loss) per share is computed by dividing net income (loss) by the weighted-average number of shares outstanding during the period. Diluted net earnings per share is computed by giving effect to all potentially dilutive ordinary share equivalents outstanding for the period. For purposes of this calculation, share options, RSUs, and RSAs are considered to be ordinary share equivalents but are excluded from the calculation of diluted earnings (loss) per share when including them would have an anti-dilutive effect. The following table sets forth the computation of basic and diluted net earnings (loss) per share (unaudited and in thousands, except for share and per share data):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2020	2019	2020
Numerator:				
Net income (loss)	$ 1,960	$ 5,595	$ (16,552)	$ 8,069
Denominator:				
Basic weighted average shares outstanding	25,634,417	25,691,357	17,743,703	25,683,969
Dilutive effect of share option awards	—	281,244	—	—
Dilutive effect of restricted share units and restricted share awards	—	374,072	—	183,195
Diluted weighted average shares outstanding	25,634,417	26,346,673	17,743,703	25,867,164
Net earnings (loss) per share, basic	$ 0.08	$ 0.22	$ (0.93)	$ 0.31
Net earnings (loss) per share, diluted	$ 0.08	$ 0.21	$ (0.93)	$ 0.31

The following outstanding shares of ordinary share equivalents were excluded from the computation of diluted net loss per share for the periods presented because including them would have had an anti-dilutive effect (unaudited and in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2020	2019	2020
Share options	—	1,966	2,076	2,821
Restricted shares (RSUs and RSAs)	—	—	268	240
Total	—	1,966	2,344	3,061

Note 14. Income taxes

The Company's provision for income taxes is based upon estimated annual tax rates for the year applied to federal, state and foreign income. The Company recorded a provision for income taxes of $0.0 million and $0.1 million for the three-month periods ended September 30, 2019 and 2020, with an effective tax rate of 0.2 % and 2.5%, respectively. The Company recorded a provision for income taxes of $9.0 million and $0.2 million for the nine-month periods ended September 30, 2019 and 2020, with an effective tax rate of (120.4)% and 2.7%, respectively. The change in the effective tax rate from 0.2% for the three-month period ended September 30, 2019 to 2.5% for the three-month period ended September 30, 2020 was primarily due to the effects of higher income in the three-month period ended September 30, 2020 when compared to the three-month period ended September 30, 2019, and effects of changes to the valuation allowance. The change in the effective tax rate from (120.4)% for the nine-month period ended September 30, 2019 to 2.7% for the nine-month period ended September 30, 2020 was primarily due to the fact that the nine-month period ended September 30, 2019 included a tax expense due to the recognition of a valuation allowance against the UK deferred tax assets. For the three-month and nine-month periods ended September 30, 2020, the Company's effective tax rate of 2.5 % and 2.7%, respectively, were different from the statutory rate of 21.0% primarily due to the utilization of previously unrecognized loss carryforwards in a foreign jurisdiction, resulting in recognition of a tax benefit.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security ("CARES") Act was enacted and signed into U.S. law to provide emergency aid and health care for individuals and businesses affected by the COVID-19 pandemic, generally supporting the U.S. economy. The CARES Act, among other things, includes provisions related to deferral of the employer portion of social security payments, refundable payroll tax credits, net operating loss carryback limitations, modifications to the net interest deduction thresholds, and technical corrections to tax depreciation methods for qualified improvement property. The Company has chosen to take advantage of the deferral of the employer portion of social security payments and recorded the deferral as a noncurrent liability in the condensed consolidated balance sheets. The remaining provision of the CARES Act is not expected to apply, and the Company does not currently expect the Act to have a material impact on its consolidated financial condition or results of operations.

On July 22, 2020, the UK 2020 Finance Act became law. This new law raises the UK tax rate to 19% for all of 2020. The effects of this tax rate change on deferred tax assets is an increase to the asset of $0.9 million with an equal and offsetting increase in the valuation allowance, with an overall net impact of zero.

Note 15. Commitments and contingencies

In accordance with ASC 460, *Guarantees*, the Company recognizes the fair value for guarantee and indemnification arrangements it issues or modifies, if these arrangements are within the scope of the interpretation. In addition, the Company must continue to monitor the conditions that are subject to the guarantees and indemnifications in order to identify if a loss has incurred. If the Company determines it is probable that a loss has occurred, then any such estimated loss would be recognized under those guarantees and indemnifications and would be recognized in the Company's condensed consolidated statements of operations and corresponding condensed consolidated balance sheets during that period.

Indemnification

The Company generally indemnifies its distributors, value added reseller and network operators against claims brought by a third party to the extent any such claim alleges that the Company's product infringes a patent, copyright or trademark or violates any other proprietary rights of that third party. Although the Company generally tries to limit the maximum amount of potential future liability under its indemnification obligations, in certain agreements this liability may be unlimited. The maximum potential amount of future payments the Company may be required to make under these indemnification agreements is not estimable.

The Company indemnifies its directors and officers and select key employees, including key employees serving as directors or officers of the Company's subsidiaries, for certain events or occurrences, subject to certain limits, while the director or officer is or was serving at the Company's request in such capacity. The term of the indemnification period is for the director's or officer's term of service. The Company may terminate the indemnification agreements with its directors, officers or key employees upon the termination of their services as directors or officers of the Company or its subsidiaries, or the termination of activities for which indemnification has been provided, but termination will not affect claims for indemnification related to events occurring prior to the effective date of termination. The maximum amount of potential future indemnification is unlimited; however, the Company has a director and officer insurance policy that limits it exposure. The Company believes the fair value of these indemnification agreements is minimal.

Warranties

The Company offers a standard warranty on its products, with the term depending on the product, and records a liability for the estimated future costs associated with potential warranty claims. The Company's responsibility under its standard warranty is the repair or replacement of in-warranty defective product, or to credit the purchase price of the defective product, at its discretion, without charge to the customer. The Company's estimate of future warranty costs is largely based on historical experience factors including product failure rates, material usage, and service delivery cost incurred in correcting product failures. The standard warranty is included in either Other current liabilities or Other noncurrent liabilities on its condensed consolidated balance sheets, depending on the time period covered by the warranty. The Company also offers an extended warranty for purchase that represents a future performance obligation for the Company. The extended warranty is included in deferred revenues (both current and noncurrent) on the condensed consolidated balance sheets and recognized on a straight-line basis over the term of the extended warranty. The warranty costs are reflected in the Company's condensed consolidated statements of operations within cost of revenues.

Legal proceedings

Third parties may from time to time assert legal claims against the Company. The Company records accruals for loss contingencies to the extent that it concludes it is probable that a liability has been incurred and the amount of the related loss can be reasonably estimated. The Company evaluates, on a regular basis, developments in legal proceedings and other matters that could cause a change in amounts recorded. Due to the inherent uncertainty involving legal matters, the ultimate resolution could differ from amounts recorded. There is no pending or threatened legal proceedings to which the Company is a party to, that in the Company's opinion, is likely to have a material adverse effect on its financial condition or results of operations.

On August 7, 2018, Ubiquiti Networks, Inc. filed a lawsuit in the United States District Court, Northern District of Illinois, against the Company, two of its employees, one of its distributors and one of its end users. The complaint alleged that the Company's development of and sales and promotion of its Elevate software as downloaded on a Ubiquiti device violates the Computer Fraud and Abuse Act and Illinois Computer Crimes Prevention Law, the Digital Millennium Copyright Act and the Copyright Act and constitutes misrepresentation and false advertising and false designation of origin in violation of the Lanham Act and state competition laws, breach of contract, tortious interference with contract and unfair competition, and trademark infringement and common law misappropriation. The complaint also asserted additional claims against all defendants alleging that the development and sales of Elevate violated the Racketeer Influenced and Corrupt Organizations Act. On May 22, 2019, the Court issued its order dismissing Ubiquiti's complaint without prejudice. On June 18, 2019, Ubiquiti filed its First Amended Complaint (FAC). The FAC made substantially the same claims against the same parties with the exception that the FAC does not include claims for violation of the Illinois Computer Crime Prevention Law, Infringement of Registered Trademarks, False Designation of Origin, and Common Law Trademark Misappropriation that were included in the initial complaint. The Company filed a motion to dismiss the FAC on July 10, 2019. On November 14, 2019 the Court issued an order denying its motion to dismiss. The Court ordered that fact discovery will close on December 1, 2020 and that dispositive motions must be filed prior to March 26, 2021. The Court referred the case to a magistrate judge for a settlement discussion. The parties are currently working with the magistrate judge on settlement discussions. The Company believes Ubiquiti's claims are without merit and plans to vigorously defend against these claims; however, there can be no assurance that it will prevail in the lawsuit.

Note 16. Segment information and revenues by geography

The Company's chief operating decision maker ("CODM") is its Chief Executive Officer. The Company's CODM reviews financial information presented on a consolidated basis for purposes of allocating resources and evaluating financial performance. Accordingly, the Company determined that it operates as one operating segment and one reporting unit.

Revenues by product were as follows (unaudited and in thousands, except percentages):

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2019		2020		2019		2020	
Point-to-Multi-Point	$ 38,856	59%	$ 43,342	59%	$ 122,913	61%	$ 118,773	61%
Point-to-Point	15,976	24%	17,967	25%	53,440	26%	43,679	22%
Wi-Fi	10,141	16%	9,949	14%	24,157	12%	29,070	15%
Other	730	1%	1,713	2%	2,456	1%	4,132	2%
Total Revenues	$ 65,703	100%	$ 72,971	100%	$ 202,966	100%	$ 195,654	100%

The Company's products are predominately distributed through a third-party logistics provider in the United States, Netherlands and China. The Company has determined the geographical distribution of product revenues based upon the ship-to destinations.

Revenues by geography were as follows (unaudited and in thousands, except percentages):

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2019		2020		2019		2020	
North America	$ 29,032	44%	$ 38,656	53%	$ 93,452	46%	$ 102,145	52%
Europe, Middle East and Africa	21,749	33%	20,250	28%	66,713	33%	59,418	30%
Caribbean and Latin America	8,008	12%	9,138	12%	23,527	12%	19,021	10%
Asia Pacific	6,914	11%	4,927	7%	19,274	9%	15,070	8%
Total Revenues	$ 65,703	100%	$ 72,971	100%	$ 202,966	100%	$ 195,654	100%

Note 17. Revenues from contracts with customers

Revenues consist primarily of revenues from the sale of hardware products with essential embedded software. Revenues also include limited amounts for software products and extended warranty on hardware products. Substantially all products are sold through distributors and other channel partners, such as resellers and systems integrators.

In accordance with ASC 606, *Revenue From Contracts with Customers,* the Company recognizes revenue to reflect the transfer of control of promised products or services to a customer in an amount that reflects the consideration to which the Company expects to be entitled in exchange for products or services. Refer to Note 16 - Segment Information, for further details, including disaggregation of revenue based on product line and geographic location.

The Company accounts for a contract when it has approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable.

The Company identifies its distinct performance obligations under each contract. A performance obligation is a promise in a contract to transfer a distinct product or service to the customer. Hardware products with essential embedded software, software products, and purchased extended warranty on hardware products have been identified as separate and distinct performance obligations.

The transaction price is the amount of consideration to which the Company expects to be entitled in exchange for transferring products or services to a customer. Exchanges made as part of the Company's stock rotation program meet the definition of a right of return under ASC 606. An adjustment to revenue is made to adjust the transaction price to exclude the consideration related to products expected to be returned. The Company records an asset at the carrying amount of the estimated stock returns and a liability for the estimated amount expected to be refunded to the customer. The transaction price also excludes other forms of consideration provided to the customer, such as volume-based rebates and cooperative marketing allowances.

The Company recognizes revenue when, or as, it satisfies a performance obligation by transferring control of a promised product or service to a customer. Revenue from hardware products with embedded software transferred at a point in time is recognized when obligations under the terms of the contract are satisfied. Generally, this occurs when control of the asset is transferred, which is at the time of shipment. Software revenue is from perpetual license software and is recognized at the point in time that the customer is able to use or benefit from the software. Extended warranty on hardware products is a performance obligation that is satisfied over time, beginning on the effective date of the warranty period and ending on the expiration of the warranty period. The Company recognizes revenue on extended warranties on a straight-line basis over the warranty period.

The Company enters into revenue arrangements that may consist of multiple performance obligations, such as hardware with embedded essential software and extended warranty. The Company allocates the transaction price to each performance obligation on a relative standalone selling price basis for each distinct product or service in the contract. The best evidence of standalone selling price is the observable price of a product or service when the Company sells that product or service separately in similar circumstances and to simlar customers. If a standalone selling price is not directly observable, the Company estimates the transaction price allocated to each performance obligation using the expected costs plus a margin approach.

Contract Balances

The following table summarizes contract balances as of December 31, 2019 and September 30, 2020 (in thousands):

	December 31, 2019	September 30, 2020 (unaudited)
Trade accounts receivable, net of allowance for doubtful accounts	$ 58,254	$ 53,472
Deferred revenue - current	7,430	6,731
Deferred revenue - noncurrent	4,852	4,278
Refund liability	$ 2,223	$ 2,119

Trade accounts receivable include amounts billed and currently due from customers. Amounts are billed in accordance with contractual terms and are recorded at face amount less an allowance for credit losses.

The Company had one customer representing more than 10% of trade receivables at December 31, 2019 and one customer representing more than 10% of trade receivables at September 30, 2020.

Deferred revenue consists of amounts due or received from customers in advance of the Company satisfying performance obligations under contractual arrangements. Deferred revenue is classified as current or noncurrent based on the timing of when revenue will be recognized. The changes in deferred revenue were due to normal timing differences between the Company's performance and the customers' payment.

The refund liability is the estimated amount expected to be refunded to customers in relation to product exchanges made as part of the Company's stock rotation program and returns that have been authorized, but not yet received by the Company. It is included within Other current liabilities in the condensed consolidated balance sheets.

Remaining performance obligations

Remaining performance obligations represent the revenue that is expected to be recognized in future periods related to performance obligations included in a contract that are unsatisfied, or partially satisfied, as of the end of a period. As of December 31, 2019, deferred revenue (current and noncurrent) of $12.3 million represents the Company's remaining performance obligations, of which $7.4 million is expected to be recognized within one year, with the remainder to be recognized thereafter. As of September 30, 2020, deferred revenue (current and noncurrent) of $11.0 million represents the Company's remaining performance obligations, of which $6.7 million is expected to be recognized within one year, with the remainder to be recognized thereafter (unaudited).

Revenue recognized during the three and nine-month periods ended September 30, 2020 which was previously included in deferred revenues as of December 31, 2019 was $1.5 million and $6.3 million, respectively, compared to $0.4 million and $2.1 million of revenue recognized during the three and nine-month periods ended September 30, 2019, respectively, which was previously included in deferred revenues as of December 31, 2018. The increase in 2020 is driven by the addition of deferred revenue related to the acquisition of the Xirrus business (See Note 2 – Business Combinations).

Cost to obtain a contract

Sales commissions are incremental costs of obtaining a contract. The Company has elected to recognize these expenses as incurred due to the amortization period of these costs being one year or less.

Note 18. Leases

Right-of-use ("ROU") assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at the commencement date. The Company's lease payments are typically fixed or contain fixed escalators. The Company's leases typically include certain lock-in periods and renewal options to extend the leases, but does not consider options to extend the lease it is not reasonably certain to exercise. The Company elected the practical expedient to not separate the lease and non-lease components of its leases and currently has no leases with options to purchase the leased property.

The components of lease expense were as follows and are included in general and administrative expense (unaudited and in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2020	2019	2020
Operating lease cost	$ 596	$ 643	$ 1,773	$ 1,935
Short-term lease cost	47	96	137	245
Variable lease costs	105	67	304	282
Total lease expense	$ 748	$ 806	$ 2,214	$ 2,462

Supplemental balance sheet information related to leases were as follows (in thousands, except lease term and discount rate):

	Balance Sheet Caption	December 31, 2019	September 30, 2020 (unaudited)
Operating leases:			
Operating lease assets	Operating lease assets	$ 6,872	$ 5,494
Current lease liabilities	Other current liabilities	$ 2,125	$ 2,284
Noncurrent lease liabilities	Noncurrent operating lease liabilities	$ 5,335	$ 3,689
Weighted average remaining lease term (years):			
Operating leases		3.98	3.44
Weighted average discount rate:			
Operating leases		8.50%	8.36%

Supplemental cash flow information related to leases were as follows (unaudited and in thousands):

	Nine Months Ended September 30,	
	2019	2020
Supplemental cash flow information:		
Cash paid for amounts included in the measurement of lease liabilities	$ 1,910	$ 1,937

The Company's lease terms range from one to seven years and may include options to extend the lease by one to four years.

Remaining maturities on lease liabilities as of September 30, 2020 is as follows (unaudited and in thousands):

	Operating leases
2020 (October - December)	$ 686
2021	2,515
2022	1,400
2023	1,305
2024	548
Thereafter	464
Total lease payments	6,918
Less: interest	945
Present value of lease liabilities	$ 5,973

As of September 30, 2020, the Company does not have any additional leases for new office facilities that have not yet commenced.

Note 19. Related party transactions

The Company follows ASC 850, *Related Party Disclosures*, for the identification of related parties and disclosure of related party transactions. A party is considered to be related to the Company if the party directly or indirectly or through one or more intermediaries, controls, is controlled by, or is under common control with the Company. Related parties also include principal owners of the Company, its management, members of the immediate families of principal owners of the Company and its management and other parties with which the Company may deal.

For the three-month periods ended September 30, 2019 and 2020, Vector Capital Management, LP, an entity related to the Company's majority shareholder, charged $0.0 million and $0.0 million, respectively and $0.2 million and $0.0 million for the nine-month periods ended September 30, 2019 and 2020, respectively, for management and oversight fees. In connection with the IPO in June 2019, and the payment of all outstanding management and oversight fees, the Vector Capital Management Agreement was terminated, and no further management and oversight fees are payable by the Company.

Note 20. Restructuring

On November 7, 2019, the Company announced a corporate restructuring to better align Cambium's cost structure with current economic conditions and position the Company to achieve long-term targets and operating growth. The restructuring only affected personnel, including contract employees, and was completed in 2019. The Company incurred restructuring charges of approximately $0.7 million, of which $0.1 million was included in Accrued liabilities at December 31, 2019 in the condensed consolidated balance sheets. The $0.1 million was paid in the first quarter of 2020.

On February 10, 2020, the Company announced it was taking additional steps in connection with the abovementioned restructuring. The additional restructuring also only affects personnel, including contract employees, and is expected to be complete by the end of 2020. In the nine-month period ended September 30, 2020, the Company recorded restructuring charges of approximately $1.2 million, consisting of involuntary employee termination costs, and is included in all operating expense lines in the Company's condensed consolidated statements of operations. As of September 30, 2020, the Company paid approximately $1.2 million of this amount, leaving a restructuring liability of $3 thousand included in Accrued liabilities in the condensed consolidated balance sheets. The remaining amount is expected to be paid in the fourth quarter of 2020.

The following table reflects the restructuring liability activity for the nine-month period ended September 30, 2020 (unaudited and in thousands):

Restructuring liability at January 1, 2020	$	138
Restructuring charges		1,180
Cost paid		(1,315)
Restructuring liability at September 30, 2020	$	3

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

The following discussion and analysis of financial condition and results of operation should be read in conjunction with the consolidated financial statements and related notes thereto of Cambium Networks Corporation ("Cambium", "we", "our", or "us") included elsewhere in this Quarterly Report on Form 10-Q and with the financial statements and related notes and Management's Discussion and Analysis in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed March 23, 2020. Results for the three-month and nine-month periods ended September 30, 2020 are not necessarily indicative of the results that may be expected for any period in the future.

Overview

We provide wireless broadband networking infrastructure solutions for network operators, including medium-sized wireless Internet service providers, enterprises, and government agencies. Our scalable, reliable and high-performance solutions create a purpose-built wireless fabric that connects people, places and things across distances ranging from two meters to more than 100 kilometers, indoors and outdoors, using licensed and unlicensed spectrum at attractive economics. Our embedded proprietary RF technology and software enables automated optimization of data flow at the outermost points in the network, which we refer to as the "intelligent edge."

We were formed in 2011 when Cambium Networks acquired the Point-to-Point ("PTP") and Point-to-Multi-Point ("PMP") businesses from Motorola Solutions. Prior to the acquisition, Motorola Solutions had invested over a decade in developing the technology and intellectual property assets that formed the foundation of our business, having launched the Canopy PMP business in 1999 and having acquired the Orthogon Systems PTP business in 2006. Following the acquisition, we renamed the business Cambium Networks Corporation and we leveraged the technology to continue to develop and offer an extensive portfolio of reliable, scalable and secure enterprise-grade fixed wireless broadband and PTP and PMP platforms, Wi-Fi, switch and IIoT solutions.

We offer our wireless broadband solutions in three categories:

- PTP: Our PTP backhaul portfolio is comprised of products operating in unlicensed spectrum below 6 GHz, and those operating in licensed spectrum between 6 and 38 GHz. The mainstay of our backhaul offering is the PTP 670 for commercial applications and PTP 700 for defense and national security applications. In addition, our PTP 820 series offers carrier-grade microwave backhaul in licensed spectrum, and our PTP 550 offers price-performance leadership in spectral efficiency in sub-6GHz unlicensed spectrum.
- PMP: Our PMP portfolio ranges from our top-of-the-line PMP 450 series to our ePMP solutions for network operators that need to optimize for both price and performance to our cnReach family of narrow-bandwidth connectivity products for industrial communications. The PMP 450 series is optimized for performance in high-density and demanding physical environments, and includes the PMP 450m with integrated cnMedusa massive multi-user multiple input/ multiple output, or MU-MIMO, technology. The PMP 450 product line also supports the FCC's Citizen Broadband Radio Service (CBRS). The FCC completed the auction of CBRS Priority Access Licenses (PAL) in the third quarter of 2020, complimenting the existing availability of General Authorized Access (GAA) licenses. Network operators are adopting the PMP 450 solution to exercise both PAL and GAA licenses. For less demanding environments, ePMP provides a high-quality platform at a more affordable price. The ePMP 3000 supports 4x4 MU-MIMO and is complemented by a broad portfolio of ePMP Force 300 subscriber radios. cnReach products enables IIoT applications, such as supervisory control and data acquisition, or SCADA, processes in the oil and gas, electric utility, water, railroad and other industrial settings. In September 2020, we announced the pending availability of the 60 GHz cnWave solution. cnWave, expected to ship in volume in the fourth quarter of 2020, will enable Gb networking using the 60 GHz band and includes Facebook Terragraph technology.
- Wi-Fi: Our Wi-Fi portfolio includes our cnPilot cloud-managed Wi-Fi solutions, our cnMatrix cloud-managed wireless-aware switching solution, and our Xirrus Wi-Fi solutions. cnPilot is for indoor and outdoor enterprise, small business and home applications and offers a range of access points and RF technology that enable network optimization based on desired geographic coverage and user density. cnMatrix provides the intelligent interface between wireless and wired networks. cnMatrix's policy-based configuration accelerates network deployment, mitigates human error, increases security, and improves reliability. Xirrus has a portfolio of high-performance enterprise Wi-Fi access points and cloud based subscription services. In June 2020, we introduced our first Wi-Fi 6 access point, the XV3-8, which will support both cnPilot and Xirrus solutions. Additional Wi-Fi 6 access points will be introduced over time to meet diverse user cases.

We generate a substantial majority of our sales through our global channel distribution network, including, as of September 30, 2020, approximately 160 distributors that we sell to directly, together with over 8,300 value added resellers and system integrators supplied by these distributors, for further sales to end-users. Our channel partners provide lead generation, pre-sales support and product fulfillment, along with professional services for network design, installation, commissioning and on-going field support. Although we fulfill sales almost exclusively through our channel partners, through our global sales team we engage directly with network operators in our key vertical markets including service providers, enterprises, industrials, defense and national security entities, and state and local governments. Our sales team responds to bids or requests for quotes, typically in collaboration with a channel partner. Our distributors carry inventory of our products for resale, and generally have stock rotation rights only if they simultaneously place an off-setting order for product. As such, we generally recognize revenue from sales to distributors on a sell-in basis, and manage our finished goods inventory efficiently to plan for distributor demand.

We outsource production to third-party manufacturers, who are responsible for purchasing and maintaining inventory of components and raw materials and, in certain cases, we resell third-party products on a white-label basis. We believe that this approach gives us the advantages of relatively low capital investment and significant flexibility in scheduling production, managing inventory levels and providing a comprehensive solution to meet network operator demand. The majority of our products are delivered to us at one of three distribution hubs, where we have outsourced the warehousing and delivery of our products to a third-party logistics provider and from which we manage worldwide fulfillment.

Impact of COVID-19

Although the recent outbreak of COVID-19 has resulted and is likely to continue to result in disruption to our business and operations as well as the operations of our customers and suppliers, the severity of the impact has lessened and some of our markets are recovering and even increasing. We have experienced increases in customer demand, as a result of strong demand for Point-to-Multi-Point products, and increased Point-to-Point revenue from improved federal business, and as many markets are recovering, as the need for connectivity grows, as schools, businesses and enterprises continue to operate remotely. In addition, we have seen a strong recover in enterprise Wi-Fi solutions driven by improved field deployments and the transition to Wi-Fi 6 solutions. We also experienced increases in product sales in connection with our wireless broadband solutions for customers accessing the CBRS band. However, we expect that social distancing measures, further waves of shutdowns globally that impact the ability of our end user customers to deploy our products, and continued restrictions and even cessation in travel impacting our sales activities, and general business uncertainty will continue to negatively impact demand in several of our markets in the fourth quarter, and possibly beyond. In addition, although all of our suppliers are currently operating, reductions in production due to mandated closures of or labor restrictions at our third-party manufacturers in Mexico, China and elsewhere continue to remain a risk as countries experience further increases in COVID-19 cases. We have experienced and expect to continue to experience an increase in certain costs, particularly transportation and logistics expenses. The pandemic could lead to an extended disruption of economic activity and the impact on our condensed consolidated results of operations, financial position and cash flows could be material.

We are focused on making sure our employees are safe and continue to operate with a substantial portion of our workforce working from home. We expect to continue remote working into 2021. While we have significantly reduced travel in 2020, with the opening in certain countries and the easing of shutdowns in many locations, we have commenced select travel to meet customer needs. The third parties that perform our manufacturing, assembly, packaging and shipping have generally remained operational. The extent of the impact of the COVID-19 pandemic on our operational and financial performance will depend on future developments, including the duration, severity and spread of the pandemic, related restrictions on travel and transportation and other actions that may be taken by governmental authorities and the impact to the business of our suppliers or customers, all of which are uncertain and cannot be predicted.

In addition, a substantial portion of our Wi-Fi products are manufactured in China, and we continue to monitor growing tensions between the U.S. and China and their potential impact on our ability to produce and ship our products. To date, no disruption in production or shipments have occurred since China re-opened facilities following the COVID-19 induced shutdown at the end of 2019. We have, however, continued to incur costs related to increased tariffs for China-manufactured goods, and should tensions continue to escalate, our ability to manufacture our products in China could be affected, causing disruptions in our supply chain, and requiring us to seek other sources of supply.

With respect to liquidity, we believe our balance sheet will provide us the necessary capital to navigate the COVID-19 pandemic. In addition, we took the following actions to bolster our financial condition and reduce costs while supporting business operations through the COVID-19 pandemic:

- Implemented several initiatives to conserve cash and optimize profitability, including limiting discretionary spending, temporarily reducing personnel costs, eliminating non-essential travel, delaying or reducing hiring activities, deferring certain discretionary capital expenditures.

2020 Outlook in Consideration of the COVID-19 Pandemic

Although the impact of the COVID-19 pandemic on our business appears to have substantially lessened, and demand for our products increased, due to the continued uncertainties created by the pandemic, including the depth and duration of any disruptions to the global economy and to our customers and suppliers, its future effect to our business, results of operations, and financial condition remains uncertain. While we are unable to accurately foresee these future impacts, we believe that our financial resources and liquidity levels, along with various plans that reduce costs are sufficient to manage the impact currently anticipated from the COVID-19 pandemic, which may cause the increases in revenue and cash generation we experienced in the three month period ended September 30, 2020 to ease, or cause the reduction in sales, earnings and operating cash flows that we experienced in the early stages of the pandemic to return.

Because the COVID-19 pandemic is a rapidly evolving situation, we will continue to evaluate market conditions and its impact to determine if further steps are necessary.

Financial results for the three-month period ended September 30, 2020

- Total revenue was $73.0 million, an increase of 11.1% year-over-year
- Gross margin of 49.4%
- Total costs of revenues and operating expenses were $65.7 million
- Operating income was $7.3 million
- Net income was $5.6 million

Xirrus acquisition

In August 2019, we acquired select assets and assumed select liabilities of the Xirrus Wi-Fi products and cloud services business from Riverbed Technology, Inc. Xirrus has a portfolio of high performance enterprise Wi-Fi access points and subscription services. We paid Riverbed Technology, Inc. $2.0 million upon closing and paid the full additional $3.0 million of contingent consideration through February 2020. This acquisition enhances and accelerates our existing network service application capabilities.

We account for business combinations in accordance with ASC 805, *Business Combinations*. We recorded the acquisition using the acquisition method of accounting and recognized assets and liabilities at their fair value as of the date of acquisition. We based the preliminary allocation of the puchase price on estimates and assumptions known on the date of acquisition that are subject to change within the purchase price allocation period, which is generally one year from the acquisition date. The Company’s review of the purchase price allocation was completed in the period ended June 30, 2020. We determined the estimated fair value of identifiable intangible assets acquired primarily using an income approach.

Basis of presentation

Revenues

Our revenues are generated primarily from the sale of our products, which consist of hardware with essential embedded software. Our revenues also include limited amounts for software products and extended warranty on hardware products. We generally recognize product revenues at the time of shipment, provided that all other revenue recognition criteria have been met. Revenues are recognized net of estimated stock returns, volume-based rebates and cooperative marketing allowances that we provide to distributors. We provide a standard warranty on our products, with the term depending on the product, and record a liability for the estimated future costs associated with potential warranty claims. In addition, we also offer extended warranties for purchase and represents a future performance obligation for us. The extended warranty is included in deferred revenues and is recognized on a straight-line basis over the term of the extended warranty. We provide our cnMaestro, LINKPlanner and cnArcher applications as supplemental tools to help network operators design, install, and manage their networks, and as a means of driving sales of our hardware products.

Cost of revenues and gross profit

Our cost of revenues is comprised primarily of the costs of procuring finished goods from our third-party manufacturers, third-party logistics and warehousing provider costs, freight costs and warranty costs. We outsource our manufacturing to third-party manufacturers located primarily in Mexico, China and Israel. Cost of revenues also includes costs associated with supply operations, including personnel related costs, provision for excess and obsolete inventory, third-party license costs and third-party costs related to services we provide. After our IPO, cost of revenues also includes share-based compensation expense.

Gross profit has been and will continue to be affected by various factors, including changes in product mix. The margin profile of products within each of our core product categories can vary significantly depending on the operating performance, features and manufacturer of the product. Generally, our gross margins on backhaul and access point products are greater than those on our customer premise equipment (“CPE”) products. Because the ratio of CPE to PTP and PMP access points typically increases as network operators build out the density of their networks, increases in follow-on sales to network operators as a percentage of our total sales typically have a downward effect on our overall gross margins. Finally, gross margin will also vary as a function of changes in pricing due to competitive pressure, our third-party manufacturing and other production costs, cost of shipping and logistics, provision for excess and obsolete inventory and other factors. We expect our gross margins will fluctuate from period to period depending on the interplay of these various factors.

Operating expenses

We classify our operating expense as research and development, sales and marketing, and general and administrative expense. Personnel costs are the primary component of each of these operating expense categories, which consist of cash-based personnel costs, such as salaries, sales commissions, benefits and bonuses. After our IPO, operating expenses also include share-based compensation expense. In addition, we separate depreciation and amortization in their own category.

Research and development

In addition to personnel-related costs, research and development expense consists of costs associated with design and development of our products, product certification, travel and recruiting. We generally recognize research and development expense as incurred. For certain of our software projects under development, we capitalize the development cost during the period between determining technological feasibility of the product and commercial release. We amortize the capitalized development cost upon commercial release, generally over three years. We typically do not capitalize costs related to the development of first-generation product offerings as technological feasibility generally coincides with general availability of the software. We expect research and development expense to increase in absolute dollars as we continue to invest in our future products and services.

Sales and marketing

In addition to personnel costs for sales, marketing, service and product line management personnel, sales and marketing expense consists of our training programs, trade shows, marketing programs, promotional materials, demonstration equipment, national and local regulatory approval on our products, travel and entertainment, and recruiting. We expect sales and marketing expense to increase in absolute dollars as we increase the size of our sales, marketing, service, and product line management organization in support of our investment in our growth opportunities, and, in particular, as we continue to expand our global distribution network.

General and administrative

In addition to personnel costs, general and administrative expense consists of professional fees, such as legal, audit, accounting, information technology and consulting costs, facilities and other supporting overhead costs. We expect general and administrative expense to increase in absolute dollars as we continue to incur additional costs associated with being a public company, partially offset by the absence of management fees previously paid to Vector Capital.

Depreciation and amortization

Depreciation and amortization expense consist of depreciation related to fixed assets such as computer equipment, furniture and fixtures, and testing equipment, as well as amortization related to acquired and internal use software and definite lived intangibles.

Provision for income taxes

Our provision for income taxes consists primarily of income taxes in the jurisdictions in which we conduct business. As we have expanded our international operations, we have incurred additional foreign tax expense, and we expect this to continue. Management assesses our deferred tax assets in each reporting period, and if it is determined that it is not more likely than not to be realized, we will record a change in our valuation allowance in that period.

Results of operations

The following table presents the consolidated statements of operations, as well as the percentage relationship to total revenues for items included in our consolidated statements of operations (in thousands):

(in thousands)	Three months ended September 30, 2019	Three months ended September 30, 2020	Nine months ended September 30, 2019	Nine months ended September 30, 2020
Statements of Operations Data:				
Revenues	$ 65,703	$ 72,971	$ 202,966	$ 195,654
Cost of revenues	33,871	36,902	105,032	98,481
Gross profit	31,832	36,069	97,934	97,173
Operating expenses				
Research and development	9,895	10,213	35,566	31,326
Sales and marketing	10,363	8,293	34,808	26,632
General and administrative	5,996	8,604	24,189	21,675
Depreciation and amortization	1,449	1,643	3,957	5,038
Total operating expenses	27,703	28,753	98,520	84,671
Operating income (loss)	4,129	7,316	(586)	12,502
Interest expense, net	2,105	1,259	6,674	4,129
Other expense, net	61	318	251	80
Income (loss) before income taxes	1,963	5,739	(7,511)	8,293
Provision for income taxes	3	144	9,041	224
Net income (loss)	**$ 1,960**	**$ 5,595**	**$ (16,552)**	**$ 8,069**

	Three months ended September 30, 2019	Three months ended September 30, 2020	Nine months ended September 30, 2019	Nine months ended September 30, 2020
Percentage of Revenues:				
Revenues	100.0%	100.0%	100.0%	100.0%
Cost of revenues	51.6%	50.6%	51.7%	50.3%
Gross margin	48.4%	49.4%	48.3%	49.7%
Operating expenses				
Research and development	15.1%	14.0%	17.5%	16.0%
Sales and marketing	15.8%	11.4%	17.1%	13.6%
General and administrative	9.1%	11.8%	11.9%	11.1%
Depreciation and amortization	2.2%	2.2%	1.9%	2.6%
Total operating expenses	42.2%	39.4%	48.5%	43.3%
Operating income (loss)	6.2%	10.0%	(0.3)%	6.4%
Interest expense, net	3.2%	1.7%	3.7%	2.0%
Other expense, net	0.1%	0.4%	0.1%	0.1%
Income (loss) before income taxes	2.9%	7.9%	(4.1)%	4.2%
Provision for income taxes	0.1%	0.2%	4.5%	0.1%
Net income (loss)	2.8%	7.7%	(8.6)%	4.1%

Comparison of three-month period ended September 30, 2019 to the three-month period ended September 30, 2020

Revenues

(dollars in thousands)	Three months ended September 30, 2019	Three months ended September 30, 2020	Change $	Change %
Revenues	$ 65,703	$ 72,971	$ 7,268	11.1%

Revenues increased $7.3 million, or 11.1%, to $73.0 million for the three-month period ended September 30, 2020 from $65.7 million for the three-month period ended September 30, 2019, which was attributable to increased demand for our point-to-multi-point products due to increased network traffic and demand for CBRS technology and increased federal business which favorably impacted point-to-point revenues.

Revenues by product category

(dollars in thousands)	Three months ended September 30, 2019	2020	Change $	%
Point-to-Multi-Point	$ 38,856	$ 43,342	$ 4,486	11.5%
Point-to-Point	15,976	17,967	1,991	12.5%
Wi-Fi	10,141	9,949	(192)	(1.9)%
Other	730	1,713	983	134.7%
Total revenues by product category	$ 65,703	$ 72,971	$ 7,268	11.1%

Point-to-Multi-Point

Our PMP product line comprised 59% of total revenues for both the three-month period ended September 30, 2020 and 2019. PMP revenue increase was attributable to increased network traffic and demand for CBRS technology.

Point-to-Point

PTP revenue for the three-month period ended September 30, 2020 increased due to improved federal sales.

Wi-Fi

Wi-Fi revenue decreased $0.2 million for the three-month period ended September 30, 2020 versus the three-month period ended September 30, 2019. Wi-Fi revenue was impacted by the global shutdowns and other restrictions imposed by COVID-19 pandemic in the retail and hospitality industries.

Other

Other revenues increased by $1.0 million for the three-month period ended September 30, 2020 versus the three-month period ended September 30, 2019 due to higher software revenues from cnHeat, our network planning subscription service to provide a heat map coverage model display of locations that are available for fixed wireless broadband connectivity, and our CBRS software-as-a-service.

Revenues by geography

(dollars in thousands)	Three months ended September 30, 2019	2020	Change $	%
North America	$ 29,032	$ 38,656	$ 9,624	33.1%
Europe, Middle East, Africa	21,749	20,250	(1,499)	(6.9)%
Caribbean and Latin America	8,008	9,138	1,130	14.1%
Asia Pacific	6,914	4,927	(1,987)	(28.7)%
Total revenues by geography	$ 65,703	$ 72,971	$ 7,268	11.1%

Revenues increased in North America and Caribbean and Latin America, but decreased in Europe, Middle East, Africa and Asia Pacific. North America and Europe, Middle East, Africa contributed 83% and 84% of total revenues for the three-month periods ended September 30, 2019 and 2020, respectively. North America sales increase was driven by higher revenues for all product lines, driven mostly by higher PMP revenues due to increased demand for CBRS and robust network traffic. Europe, Middle East, Africa sales decreased mostly due to a technology transition resulting in decreased PMP sales to a large customer in Italy. Caribbean and Latin America sales increased due to a number of larger deals for both PMP and PTP products. Asia Pacific had higher Wi-Fi sales offset by declines in PMP and PTP products and continues to be impacted by business shut downs and other restrictions due to the COVID-19 pandemic.

Cost of revenues and gross margin

(dollars in thousands)	Three months ended September 30, 2019	2020	Change $	%
Cost of revenues	$ 33,871	$ 36,902	$ 3,031	8.9%
Gross margin	48.4%	49.4%		100 bps

Cost of revenues increased $3.0 million, or 8.9%, to $36.9 million for the three-month period ended September 30, 2020 from $33.9 million for the three-month period ended September 30, 2019. The increase in cost of revenues was primarily due to increased revenues.

Gross margin increased to 49.4% for the three-month period ended September 30, 2020 from 48.4% for the three-month period ended September 30, 2019. The increase reflects higher volumes, increased mix of higher margin products, a richer mix of PMP products, and the initiatives put in place focused on cost reductions and supply chain efficiencies, partially offset by higher shipping costs.

Operating expenses

	Three months ended September 30,		Change	
(dollars in thousands)	**2019**	**2020**	**$**	**%**
Research and development	$ 9,895	$ 10,213	$ 318	3.2%
Sales and marketing	10,363	8,293	(2,070)	(20.0)%
General and administrative	5,996	8,604	2,608	43.5%
Depreciation and amortization	1,449	1,643	194	13.4%
Total operating expenses	$ 27,703	$ 28,753	$ 1,050	3.8%

Research and development

Research and development expense increased $0.3 million, or 3.2%, to $10.2 million for the three-month period ended September 30, 2020 from $9.9 million for the three-month period ended September 30, 2019. As a percentage of revenues, research and development expenses decreased to 14.0% in 2020 from 15.1% in 2019 over the same period. Research and development expense increased mainly due higher payroll costs of $1.8 million, due to higher corporate bonus accrual of $2.2 million, $0.2 million of higher share-based compensation expense offset by $0.6 million lower payroll costs due to the salary reductions implemented from May 2020 to August 2020, along with lower headcount. These costs are offset by lower contractor costs of $0.7 million due to a reduction in total contractors as well as negotiated reduction in hourly rates, lower engineering material costs of $0.4 million, lower travel costs of $0.2 million due to reductions in non-essential travel as a result of restrictions on travel due to the COVID-19 pandemic.

Sales and marketing

Sales and marketing expense decreased $2.1 million, or 20.0%, to $8.3 million for the three-month period ended September 30, 2020 from $10.4 million for the three-month period ended September 30, 2019. As a percentage of revenues, sales and marketing expense decreased to 11.4% in 2020 from 15.8% in 2019 over the same period. Sales and marketing expense decreased mainly due to lower payroll related costs of $0.8 million due to lower headcount and salary reductions implemented from May 2020 to August 2020. The remaining decrease is driven by lower travel spend of $1.1 million due to reductions in non-essential travel as a result of restrictions on travel due to the COVID-19 pandemic, lower marketing related spend of $0.8 million also as a result of restrictions due to the COVID-19 pandemic, and $0.2 million reduction in contractor costs due to reductions in total contractors as well as negotiated reductions in hourly rates. These reductions are offset by a higher corporate bonus accrual of $0.9 million due to higher attainment in 2020.

General and administrative

General and administrative expense increased $2.6 million, or 43.5%, to $8.6 million for the three-month period ended September 30, 2020 from $6.0 million for the three-month period ended September 30, 2019. As a percentage of revenues, general and administrative expense increased to 11.8% in 2020 from 9.1% in 2019 over the same period. General and administrative expense increased mainly due to $1.6 million of nonrecurring legal expenses, $1.2 million higher corporate bonus accrual due to higher attainment in 2020, offset by $0.2 million of one-time Xirrus acquisition costs recognized in the third quarter of 2019.

Depreciation and amortization

Depreciation and amortization expense increased $0.2 million, or 13.4%, to $1.6 million for the three-month period ended September 30, 2020 from $1.4 million for the three-month period ended September 30, 2019. The increase in depreciation and amortization was mostly driven by the addition of assets related to the Xirrus acquisition completed in August 2019, comprising $0.1 million of intangible asset amortization related to the intangibles recognized and $0.1 million of higher depreciation related to the assets acquired.

Interest expense

(dollars in thousands)	Three months ended September 30, 2019	2020	Change $	%
Interest expense, net	$ 2,105	$ 1,259	$ (846)	(40.2)%

Interest expense decreased $0.8 million, or 40.2%, to $1.3 million for the three-month period ended September 30, 2020 from $2.1 million for the three-month period ended September 30, 2019. The decrease was primarily due to interest being computed on a lower principal balance as a result of paying down $20.7 million on the term loan and $10.0 million on the revolver in July 2019 from the proceeds from the IPO, along with a lower interest rate as a result of a reduction in LIBOR.

Other expense

(dollars in thousands)	Three months ended September 30, 2019	2020	Change $	%
Other expense, net	$ 61	$ 318	$ 257	421.3%

Other expense, net increased from $0.1 million for the three-month period ended September 30, 2019 to $0.3 million for the three-month period ended September 30, 2020, and was primarily associated with foreign currency fluctuations.

Provision for income taxes

(dollars in thousands)	Three months ended September 30, 2019	2020	Change $	%
Provision for income taxes	$ 3	$ 144	$ 141	nm
Effective income tax rate	0.2%	2.5%		

Our provision for income taxes changed $0.1 million to a provision of $0.1 million for the three-month period ended September 30, 2020 from a provision of $0.0 million for the three-month period ended September 30, 2019. The effective tax rates were 2.5% and 0.2% over the same periods, respectively, and reflect the application of our expected annual tax rate to pre-tax results for each of the periods as well as discrete tax impacts that arise during the periods. The change in the effective tax rate from 0.2% for the three-month period ended September 30, 2019 to 2.5% for the three-month period ended September 30, 2020, was primarily due to the effects of higher income in the three month period ended September 30, 2020 when compared to the three month period ended September 30, 2019, and effects of changes to the valuation allowance. For the three-month period ended September 30, 2020, our effective tax rate of 2.5% was different from the statutory rate of 21.0% primarily due to the utilization of previously unrecognized loss carryforwards in a foreign jurisdiction, resulting in recognition of a tax benefit.

Comparison of the nine-month period ended September 30, 2019 to the nine-month period ended September 30, 2020

Revenues

(dollars in thousands)	Nine months ended September 30, 2019	2020	Change $	%
Revenues	$ 202,966	$ 195,654	$ (7,312)	(3.6)%

Revenues decreased $7.3 million, or 3.6%, to $195.7 million for the nine-month period ended September 30, 2020 from $203.0 million for the nine-month period ended September 30, 2019, which was driven by lower point-to-multi-point revenue and softer demand from federal customers which impacted point-to-point revenues, offset by an increase in our Wi-Fi products as a result of the Xirrus acquisition completed in the third quarter of 2019 along with an increase in other revenue due to the addition of software revenue and CBRS software-as-a-service.

Revenue by product category

(dollars in thousands)	Nine months ended September 30, 2019	2020	Change $	%
Point-to-Multi-Point	$ 122,913	$ 118,773	$ (4,140)	(3.4)%
Point-to-Point	53,440	43,679	(9,761)	(18.3)%
Wi-Fi	24,157	29,070	4,913	20.3%
Other	2,456	4,132	1,676	68.2%
Total revenues by product category	$ 202,966	$ 195,654	$ (7,312)	(3.6)%

Point-to-MultiPoint

Our PMP product line comprised 61% of total revenues for the nine-month periods ended September 30, 2020 and 2019. PMP revenue decrease was mostly attributable to decreased sales to a large customer in the Europe, Middle East, Africa region.

Point-to-Point

The decrease in our PTP revenue was driven principally by decreased demand from federal customers.

Wi-Fi

Wi-Fi revenue benefitted from the acquisition of Xirrus completed in the third quarter of 2019.

Other

Other revenues increased due to higher software revenues from cnHeat and our CBRS software-as-a-service.

Revenues by geography

(dollars in thousands)	Nine months ended September 30, 2019	2020	Change $	%
North America	$ 93,452	$ 102,145	$ 8,693	9.3%
Europe, Middle East, Africa	66,713	59,418	(7,295)	(10.9)%
Caribbean and Latin America	23,527	19,021	(4,506)	(19.2)%
Asia Pacific	19,274	15,070	(4,204)	(21.8)%
Total revenues by geography	$ 202,966	$ 195,654	$ (7,312)	(3.6)%

Revenues decreased in all regions but North America for the nine-month period ended September 30, 2020 from the nine-month period ended September 30, 2019. North America sales increased due to higher PMP sales offset by lower PTP sales to federal customers. Europe, Middle East, Africa sales decreased due to a technology transition resulting in decreased PMP sales to a large customer in Italy. Caribbean and Latin America sales decreased mostly due to lower PMP revenues as a result of economic and currency headwinds and the impact from business shutdowns and other restrictions due to the COVID-19 pandemic. Asia Pacific sales decreased due lower demand in India and Southeast Asia and the impact of business shutdowns and other restrictions due to the COVID-19 pandemic.

Cost of revenues and gross margin

(dollars in thousands)	Nine months ended September 30, 2019	2020	Change $	%
Cost of revenues	$ 105,032	$ 98,481	$ (6,551)	(6.2)%
Gross margin	48.3%	49.7%		140 bps

Cost of revenues decreased $6.6 million, or 6.2%, to $98.5 million for the nine-month period ended September 30, 2020 from $105.0 million for the nine-month period ended September 30, 2019. The decrease in cost of revenues was primarily due to decreased revenue.

Gross margin increased to 49.7% for the nine-month period ended September 30, 2020 from 48.3% for the nine-month period ended September 30, 2019. The increase reflects the impact of a higher-margin product mix along with key initiatives put in place focused on cost reductions, price management, and supply chain efficiency, partially offset by higher excess and obsolete inventory reserves.

Operating expenses

	Nine months ended September 30,		Change	
(dollars in thousands)	**2019**	**2020**	**$**	**%**
Research and development	$ 35,566	$ 31,326	$ (4,240)	(11.9)%
Sales and marketing	34,808	26,632	(8,176)	(23.5)%
General and administrative	24,189	21,675	(2,514)	(10.4)%
Depreciation and amortization	3,957	5,038	1,081	27.3%
Total operating expenses	$ 98,520	$ 84,671	$ (13,849)	(14.1)%

Research and development

Research and development expense decreased $4.2 million, or 11.9%, to $31.3 million for the nine-month period ended September 30, 2020 from $35.6 million for the nine-month period ended September 30, 2019. As a percentage of revenues, research and development expenses decreased to 16.0% in 2020 from 17.5% in 2019 over the same period. Research and development expense decreased mainly due to a $3.9 million reduction in share-based compensation expense, as the nine-month period ended September 30, 2019 included one-time share-based compensation expense of $4.6 million recorded in connection with our Recapitalization and IPO completed in June 2019. The remaining decrease is driven by lower contractor costs of $2.2 million due to a reduction in total contractors as well as negotiated reductions in hourly rates, lower travel costs of $0.6 million due to reduction in non-essential travel as a result of restrictions on travel due to the COVID-19 pandemic, offset by higher corporate bonus accrual of $2.1 million due to higher attainment in 2020 along with headcount costs of $0.3 million and restructuring expense of $0.7 million recognized in 2020.

Sales and marketing

Sales and marketing expense decreased $8.2 million, or 23.5%, to $26.6 million for the nine-month period ended September 30, 2020 from $34.8 million for the nine-month period ended September 30, 2019. As a percentage of revenues, sales and marketing expense decreased to 13.6% in 2020 from 17.1% in 2019 over the same periods. Sales and marketing expense decreased mainly due to a $3.3 million reduction in share-based compensation expense, as the nine-month period ended September 30, 2019 included one-time share-based compensation expense of $3.5 million recorded in connection with our Recapitalization and IPO completed in June 2019. The remaining decrease is driven by lower payroll costs of $1.8 million as a result of lower headcount and salary reductions in effect from May 2020 to August 2020 along with lower travel spend of $2.6 million due to reductions in non-essential travel as a result of restrictions on travel due to the COVID-19 pandemic, lower marketing related spend of $1.7 million also as a result of restrictions due to the COVID-19 pandemic, and $0.3 million reduction in contractor costs due to reductions in total contractors as well as negotiated reductions in hourly rates offset by higher corporate bonus accrual of $0.9 million due to higher attainment in 2020 and restructuring expenses of $0.5 million recognized in 2020.

General and administrative

General and administrative expense decreased $2.5 million, or 10.4%, to $21.7 million for the nine-month period ended September 30, 2020 from $24.2 million for the nine-month period ended September 30, 2019. As a percentage of revenues, general and administrative expenses decreased to 11.1% in 2020 from 11.9% in 2019 over the same periods. General and administrative expense decreased mainly due to a $6.9 million reduction in share-based compensation expense, as the nine-month period ended September 30, 2019 included one-time share-based compensation expense of $7.1 million recorded in connection with our Recapitalization and IPO completed in June 2019. Additional decreases due to lower headcount related costs of $0.5 million due to salary reductions in effect from May 2020 to August 2020, absence of Vector related fees of $0.4 million due to the termination of the Vector agreement in the second quarter of 2019, and $0.2 million of one-time Xirrus expenses recognized in 2019. The decrease is offset by $1.6 million of nonrecurring legal expenses, an increase of $1.5 million related to directors and officers insurance premiums and Board fees, higher corporate bonus accrual of $1.4 million due to higher attainment in 2020, higher accounting, tax and audit fees of $0.4 million due to becoming a public company in June 2019, and higher IT services costs of $0.2 million.

Depreciation and amortization

Depreciation and amortization expense increased $1.1 million, or 27.3%, to $5.0 million for the nine-month period ended September 30, 2020 from $4.0 million for the nine-month period ended September 30, 2019. The increase in depreciation and amortization was mostly driven by the addition of assets related to the Xirrus acquisition completed in August 2019, composed of $0.6 million of intangible asset amortization related to the intangibles recognized and $0.4 million of higher depreciation related to the assets acquired.

Interest expense

	Nine months ended September 30,		Change	
(dollars in thousands)	**2019**	**2020**	**$**	**%**
Interest expense, net	$ 6,674	$ 4,129	$ (2,545)	(38.1)%

Interest expense decreased $2.5 million, or 38.1%, to $4.1 million for the nine-month period ended September 30, 2020 from $6.7 million for the nine-month period ended September 30, 2019. The decrease was primarily due to interest being computed on a lower principle balance as a result of paying down $20.7 million on the term loan and $10.0 million on the revolver in July 2019 from the proceeds from the IPO, along with a lower interest rate as a result of a reduction in LIBOR.

Other expense

	Nine months ended September 30,		Change	
(dollars in thousands)	**2019**	**2020**	**$**	**%**
Other expense, net	$ 251	$ 80	$ (171)	(68.1)%

Net other expense decreased from $0.3 million for the nine-month period ended September 30, 2019 to $0.1 million for the nine-month period ended September 30, 2020, and was primarily associated with foreign currency fluctuations.

Provision for income taxes

	Nine months ended September 30,		Change	
(dollars in thousands)	**2019**	**2020**	**$**	**%**
Provision for income taxes	$ 9,041	$ 224	$ (8,817)	(97.5)%
Effective income tax rate	(120.4)%	2.7%		

Our provision for income taxes decreased $8.9 million to $0.2 million for the nine-month period ended September 30, 2020 from $9.0 million for the nine-month period ended September 30, 2019. The change in the effective tax rate from (120.4)% for the nine-month period ended September 30, 2019 to 2.7% for the nine-month period ended September 30, 2020, was primarily due to the fact that the nine-month period ended September 30, 2019 included a tax expense due to the recognition of a valuation allowance against our UK deferred tax assets. For the nine-month period ended September 30, 2020, our effective tax rate of 2.7% was different from the statutory rate of 21.0% primarily due to utilization of previously unrecognized loss carryforwards in a foreign jurisdiction, resulting in recognition of a tax benefit.

Liquidity and Capital Resources

As of September 30, 2020, we had a cash balance of $50.1 million. Our primary liquidity needs are: (i) to fund normal operating expenses; (ii) to meet interest and principal requirements of our outstanding indebtedness; and (iii) to fund capital expenditures. We believe these needs will be satisfied over at least the next 12 months using cash flow generated by our operations. Our future capital requirements may vary materially from those currently planned and will depend on many factors, including our rate of revenue growth, the timing and extent of spending to support development efforts, the timing of new product introductions, market acceptance of our products and overall economic conditions. We expect to regularly assess market conditions and may take measures, including raising additional equity or incurring additional debt if and when our board of directors determines that doing so is in our best interest.

Cash Flows

The following table sets forth summarized cash flow data for the periods indicated (in thousands):

	Nine months ended September 30, 2019	Nine months ended September 30, 2020
Cash (used in) provided by operating activities	$ (2,592)	$ 41,819
Cash used in investing activities	$ (5,407)	$ (3,687)
Cash provided by (used in) financing activities	$ 22,578	$ (7,306)

Cash flows from operating activities

Net cash used in operating activities for the nine-month period ended September 30, 2019 of $2.6 million consisted primarily of a net loss of $16.5 million, adjustments for non-cash share-based compensation expense of $16.9 million, depreciation and amortization and other impacts of $5.3 million, partially offset by impacts resulting in cash inflows including deferred tax impacts of $7.4 million and outflows from operating assets and liabilities of $15.4 million. The changes in operating assets and liabilities consisted primarily of a $8.7 million increase in inventories as we procured additional inventory of new products, $5.5 million reduction in management fees owed to Vector that were previously accrued and became payable upon completion of our IPO in June 2019, as well as reductions in our accounts payable of $1.7 million, and other miscellaneous offsetting impacts totaling $0.5 million.

Net cash provided by operating activities for the nine-month period ended September 30, 2020 of $41.8 million consisted primarily of net income of $8.1 million, adjustments for depreciation and amortization and other impacts of $7.8 million, share-based compensation of $2.7 million, and changes in operating assets and liabilities that resulted in net cash provided of $23.3 million. The changes in operating assets and liabilities consisted primarily of a $10.6 million decrease in inventories as we procured additional inventory towards the end of 2019 which was sold in 2020 along with a $7.9 million decrease in accounts receivable as a result of stronger collections and lower sales in 2020 and $5.3 million increase in accrued employee compensation, offset by a $0.5 million reduction in other assets and liabilities, mostly driven by a reduction in deferred revenue.

Cash flows from investing activities

Our investing activities for all periods presented consisted of capital expenditures for property, equipment and software in support of the growth of our business. For the nine-month period ended September 30, 2019 and 2020, our investing activities also included cash paid to Riverbed Technology, Inc. related to the acquisition of the Xirrus Wi-Fi business.

Cash flows from financing activities

During the nine-month period ended September 30, 2019, net cash provided of $22.6 million was primarily due to $66.0 million in proceeds received from the sale of shares in our IPO, net of underwriters commissions, repayment of $37.8 million in principal under our term loan and revolving loan facilities, and payment of $4.4 million of deferred issuance costs related to the IPO.

During the nine-month period ended September 30, 2020, net cash used of $7.3 million was primarily due $7.5 million repayment of principal due under our term loan facility offset by $0.2 million of proceeds received from share option exercises.

Debt

As of September 30, 2020, we had $57.8 million outstanding on our term credit facility and have $10.0 million available under our revolving credit facility. The interest rate in effect as of September 30, 2020 was 6.0% on the term credit facility. Refer to Note 8 – Debt, to our unaudited consolidated financial statements in Part I of this Form 10-Q for additional information. .

Contractual Obligations and Commercial Commitments

For the nine-month period ended September 30, 2020, there has been no material change to the contractual obligations and commercial commitments disclosed in Item 7 of our Form 10-K for the fiscal year ended December 31, 2019.

Off-balance sheet arrangements

We do not engage in transactions that generate relationships with unconsolidated entities or financial partnerships, such as entities often referred to as variable interest entities, structured finance, or special purpose entities, as part of our ongoing business. Accordingly, our operating results, financial condition and cash flows are not subject to off-balance sheet risks.

Recent accounting pronouncements

We have reviewed all recently issued accounting standards and have disclosed in Note 1 in this Quarterly Report on Form 10-Q the results of our review and assessment of the impact on the standards on our consolidated financial statements.

Significant Accounting Estimates

Our consolidated financial statements and the related notes thereto are prepared in accordance with U.S. GAAP. The preparation of these financial statements requires our management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, costs and expense and related disclosures. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these judgments and estimates under different assumptions or conditions and any such differences may be material. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

During the three-month period ended September 30, 2020, there were no significant changes to our critical accounting policies and estimates. Please refer to Management's Discussion and Analysis of Financial Condition and Results of Operations contained in Part II, Item 7 of our Annual Report on Form 10-K for our fiscal year ended December 31, 2019, filed on March 23, 2020, for a more complete discussion of our critical accounting policies and estimates.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Excluding the impact of changes in interest rates and the uncertainty in the global financial markets, there have been no material changes to our market risk for the three-month period ended September 30, 2020. We conduct business in all parts of the world and are thereby exposed to market risks related to fluctuations in foreign currency exchange rates. The U.S. dollar is the single largest currency in which our revenue contracts are denominated. Any decline in the value of local foreign currencies against the U.S. dollar results in our products and services being more expensive to a potential foreign customer. In those instances where our goods and services have already been sold, receivables may be more difficult to collect. Additionally, in jurisdictions where the revenue contracts are denominated in U.S. dollars and operating expenses are incurred in the local currency, any decline in the value of the U.S. dollar will have an unfavorable impact to operating margins. We have not entered into any foreign currency hedging transactions. We do not purchase or hold any derivative financial instruments for speculation or arbitrage.

We do not hold any cash in any investment accounts and all cash is deposited with financial institutions that management believes are of high credit quality. The Company's cash consists primarily of U.S. dollar denominated demand accounts.

We had $57.8 million of debt outstanding on our term loan facility and $0.0 million of debt outstanding on our revolving credit facility as of September 30, 2020 under our Credit Agreement. The Company is exposed to interest rate risk from fluctuations in the US LIBOR rate that is a component of the interest rate used to calculate interest expense on the debt. Interest accrues on the outstanding principal amount of the term loan on a quarterly basis and is equal to the US LIBOR rate plus a base rate of 4.75%, 4.25% or 4.00%. The base rate is affected by our financial performance as measured by the consolidated leverage ratio. The rate on both the term loan and revolving credit facility was set to 6.0% on March 31, 2020, due to a reduction in the US LIBOR rate, and remained at 6.0% during the three-months ended September 30, 2020. A hypothetical 100-basis point increase in interest rates, and assuming a constant base rate, would result in an additional $0.6 million in interest expense related to the external debt per year.

In July 2017, the head of the United Kingdom Financial Conduct Authority announced plans to phase out the use of LIBOR by the end of 2021. At this time, no consensus exists as to what rate or rates may become acceptable alternatives to LIBOR and we are unable to predict the effect of any such alternatives on our current interest rate.

For a discussion of current market conditions resulting from the business shut downs and other restrictions resulting from government efforts to combat the impact of the COVID-19 pandemic, refer to Part I, Item 2, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and to Part II, Item 1A, "Risk Factors".

There have been no other material changes in our market risk since December 31, 2019.

Item 4. Controls and Procedures.

Evaluation of disclosure controls and procedures

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities and Exchange Act of 1934, as amended, or the Exchange Act), as of September 30, 2020, the end of the period covered by this Quarterly Report on Form 10-Q. Based on such evaluation, our principal executive officer and principal financial officer have concluded that, as of such date, our disclosure controls and procedures are effective at a reasonable assurance level.

Changes in internal control

There were no changes in our internal control over financial reporting identified in management's evaluation pursuant to Rules 13a-15(e) and 15d-15(e) of the Exchange Act during the period covered by this Quarterly Report on Form 10-Q that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on effectiveness of controls and procedures

None.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

Third parties may from time to time assert legal claims against us. Our industry is characterized by vigorous protection and pursuit of intellectual property rights. A number of companies hold a large number of patents that may cover technology necessary to our products. We have in the past received and expect to continue to receive claims by third parties that we infringe their intellectual property rights. In the opinion of management, we believe we have established adequate accruals pursuant to U.S. generally accepted accounting principles for any expected future liability with respect to pending lawsuits, claims and proceedings, where the nature and extent of any such liability can be reasonably estimated based on presently available information. However, there can be no assurance that the final resolution of any existing or future lawsuits, claims or proceedings will not have a material adverse effect on our business, results of operations, financial conditions, or cash flows.

For additional information, see Note 15 – Commitments and contingencies in the Notes to the Condensed Consolidated Financial Statements in this Quarterly Report on Form 10-Q and Part I, Item 3. Legal Proceedings in the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2019.

Item 1A. Risk Factors.

There have been no material changes to the risk factors as disclosed in Item 1A of our Form 10-K for the fiscal year ended December 31, 2019 except as discussed below. Additional risk and uncertainties, including risks and uncertainties not presently known to us, or that we currently deem immaterial, could also have an adverse effect on our business, financial condition and/or results of operations.

Our business, results of operations and financial condition may be adversely impacted by the ongoing COVID-19 pandemic

The outbreak of the novel coronavirus (COVID-19) continues to impact market conditions around the globe and has negatively impacted and could continue to negatively impact the global economy. Business shutdowns and travel and other restrictions taken by governments and enterprises globally as a result of the COVID-19 pandemic have resulted and may continue to result in significant disruption that may adversely affect our business. We initially experienced and may continue to experience reductions in customer demand in several of our markets as a result of the challenges created by business shutdowns and cessation of travel due to restrictions imposed by governments to combat the COVID-19 pandemic. However, we have seen some improvements in the three-month period ended September 30, 2020, as the need for connectivity continues to grow, as schools, businesses and enterprises continue to operate remotely. We expect that social distancing measures, additional waves of shutdowns globally that impact the ability of our end user customers to deploy our products, restrictions on travel impacting our sales activities, as well as the reduced operational capacity of our suppliers may impact our operations in future quarters. In addition, we could experience reductions in production if closures of or labor restrictions at our third-party manufacturers in Mexico, China, and Israel are mandated if there are increases in the incidence of COVID-19 cases in these markets. General business uncertainty may negatively impact demand in several of our markets that could result in a reduction in expected revenues and an increase in certain costs, particularly transportation and logistics expenses. The pandemic could lead to an extended disruption of economic activity and the impact on our business, results of operations, financial condition and cash flows could be material.

Due to the ongoing impact of the COVID-19 pandemic, we implemented temporary cost savings measures to reduce operating expenses to better align our cost structure to current and expected future economic conditions. However, as a result of a lessening of the impact of business shutdowns and other restrictions imposed to combat the COVID-19 pandemic, as well as improvements in our revenues and cash collections, we have reversed some of these temporary cost saving measures. Although we continue to monitor these impacts on our results of operations, and will take additional measures if our business appears to be further negatively impacts, we can provide no assurance that these measures will be sufficient to align our costs with our revenues, if the impact of the COVID-19 pandemic increases or is sustained over a long period of time.

The effect of COVID-19 and related events, including those described above and those not known or knowable, may adversely affect our business, results of operations, financial condition and cash flows.

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

Not applicable.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

Not applicable.

Item 6. Exhibits.

We have filed the exhibits listed on the accompanying Exhibit Index, which is incorporated herein by reference.

EXHIBIT INDEX

Exhibit Number	Description
31.1*	Certification of Chief Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Chief Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

SIGNATURES

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

		Cambium Networks Corporation
Date: November 6, 2020	By:	/s/ ATUL BHATNAGAR
		Atul Bhatnagar
		President and Chief Executive Officer
Date: November 6, 2020	By:	/s/ STEPHEN CUMMING
		Stephen Cumming
		Chief Financial Officer

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Atul Bhatnagar, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Cambium Networks Corporation;

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

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

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 6, 2020

By: /s/ ATUL BHATNAGAR

Atul Bhatnagar
Chief Executive Officer

Exhibit 31.2

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Stephen Cumming, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Cambium Networks Corporation;

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

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

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 6, 2020

By: /s/ STEPHEN CUMMING

Stephen Cumming
Chief Financial Officer

Exhibit 32.1

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 of Cambium Networks Corporation (the “Company”) on Form 10-Q for the period ended September 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

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

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

Date: November 6, 2020

By: /s/ ATUL BHATNAGAR
Atul Bhatnagar
Chief Executive Officer

Exhibit 32.2

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 of Cambium Networks Corporation (the "Company") on Form 10-Q for the period ended September 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

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

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

Date: November 6, 2020

By: /s/ STEPHEN CUMMING
Stephen Cumming
Chief Financial Officer