PCTEL

2019

ANNUAL REPORT

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

Form 10-K

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

For the fiscal year ended December 31, 2019

OR

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

For the transition period from _____to _____

Commission File Number 000-27115

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

Delaware	**77-0364943**
(State or Other Jurisdiction of Incorporation or Organization)	***(I.R.S. Employer Identification Number)***
471 Brighton Drive, Bloomingdale IL	**60108**
(Address of Principal Executive Office)	***(Zip Code)***

(630) 372-6800

(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $.001 Par Value Per Share	PCTI	The Nasdaq Global Select Market

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

None

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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

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

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

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

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

As of June 30, 2019, the last business day of the registrant's most recently completed second fiscal quarter, there were 18,492,276 shares of the registrant's common stock outstanding, and the aggregate market value of such shares held by non-affiliates of the registrant (based upon the closing sale price of such shares on the Nasdaq Global Select Market on June 28, 2019) was approximately $81,920,783. Shares of the registrant's common stock held by each executive officer and director and by each entity that owns 5% or more of the registrant's outstanding common stock have been excluded because such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for any other purposes.

18,772,240 shares of common stock were issued and outstanding as of March 12, 2020.

Documents Incorporated by Reference

Certain sections of the registrant's definitive proxy statement relating to its 2020 Annual Stockholders' Meeting to be held on May 27, 2020 are incorporated by reference into Part III of this Annual Report on Form 10-K. The Company intends to file its proxy statement within 120 days after the end of its fiscal year end to which this report relates.

PCTEL, Inc.
Form 10-K
For the Fiscal Year Ended December 31, 2019

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PART I

Item 1: Business

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These statements include, among other things, statements concerning our future operations, financial condition and prospects, and business strategies. The words "believe", "expect", "anticipate" and other similar expressions generally identify forward-looking statements. Investors in our common stock are cautioned not to place undue reliance on these forward-looking statements. These forward-looking statements are subject to substantial risks and uncertainties that could cause our future business, financial condition, or results of operations to differ materially from the historical results or currently anticipated results. Investors should carefully review the information contained in Item 1A Risk Factors and elsewhere in, or incorporated by reference into, this Annual Report on Form 10-K. Other factors not currently anticipated may also materially and adversely affect our results of operations, cash flows and financial position. There can be no assurance that future results will meet expectations. While we believe that the forward-looking statements in this Annual Report on Form 10-K are reasonable, investors should not place undue reliance on any forward-looking statements. In addition, these statements speak only as of the date made. We do not undertake, and expressly disclaim any obligation to update or alter any statements whether as a result of new information, future events or otherwise, except as may be required by applicable law.

Overview

PCTEL, Inc. ("PCTEL", the "Company", "we", "ours", and "us") is a leading global supplier of wireless network antenna and test solutions. We design and manufacture precision antennas and provide test & measurement products that improve the performance of wireless networks globally. Our products address three market segments: Enterprise Wireless, Intelligent Transportation, and Industrial Internet of Things ("IoT"). Our antennas are deployed in small cells, enterprise Wi-Fi access points, fleet management and transit systems, and in network equipment and devices for the Industrial Internet of Things. Our test & measurement tools improve the performance of wireless networks globally. Mobile operators, neutral hosts, and network equipment manufacturers rely on our products to analyze, design, and optimize next generation wireless networks.

Our strength is to solve complex network engineering problems for our customers through our products and solutions. To this end, we are constantly innovating and improving antenna and wireless testing products and capabilities in order to capture the opportunities and meet the challenges of the rapidly evolving wireless industry. We focus on engineering, research and development to maintain and expand our competitiveness.

PCTEL was incorporated in California in 1994 and reincorporated in Delaware in 1998. Our principal executive offices are located at 471 Brighton Drive, Bloomingdale, Illinois 60108. Our telephone number at that address is (630) 372-6800 and our website is *www.pctel.com*. Additional information about our Company can be obtained on our website; however, the information within, or that can be accessed through, our website, is not part of this report.

Product Lines

Antenna Products PCTEL designs and manufactures precision antennas and we offer in-house wireless product development for our customers, including design, testing, radio integration, and manufacturing capabilities. PCTEL antennas are deployed in small cells, enterprise Wi-Fi access points, fleet management and transit systems, and in equipment and devices for the Industrial Internet of Things. Revenue growth in these markets is driven by the increased use and complexity of wireless communications. Consistent with our mission to solve complex network engineering problems and in order to compete effectively in the antenna market, PCTEL maintains expertise in the following areas: radio frequency engineering, digital signal process ("DSP") engineering, wireless network engineering, mechanical engineering, mobile antenna design, manufacturing, and product quality and testing. We seek out product applications that command a premium for product design and performance, and we avoid commodity markets. Our antennas are primarily sold to original equipment manufacturer ("OEM") providers where they are designed into the customer's solution.

Test & Measurement Products PCTEL provides radio frequency ("RF") test & measurement tools that improve the performance of wireless networks globally, with a focus on LTE, public safety, and 5G technologies. Network operators, neutral hosts, and equipment manufacturers rely on our scanning receivers and testing solutions to analyze, design, and optimize next generation wireless networks. Revenue growth in this market is driven by the implementation and roll out of new wireless technology standards (i.e. 3G to 4G, 4G to 5G). Consistent with our mission to solve complex network engineering problems and in order to compete effectively in the RF test & measurement market, PCTEL maintains expertise in the following areas: radio frequency engineering, DSP engineering, wireless network engineering, mechanical engineering, manufacturing, and product quality and testing. Our test equipment is sold directly to wireless carriers or to OEMs who integrate our products into their solutions which are then sold to wireless carriers.

Major Customers

There were no customers that accounted for 10% or more of revenues during the years ended December 31, 2019, and 2018.

The following table represents customers that accounted for 10% or more of total trade accounts receivable at December 31, 2019 and 2018:

	As of December 31,	
Trade Accounts Receivable	**2019**	**2018**
Customer A	15%	9%
Customer B	11%	1%
Customer C	8%	13%

Backlog

Sales of our products are generally made pursuant to standard purchase orders, which are officially acknowledged according to standard terms and conditions. The backlog of customer purchase orders is useful for scheduling production but is not necessarily a meaningful indicator of future product revenues as the order to ship cycle is short. The February 2020 work stoppage at our manufacturing facility in Tianjin, China, and at our contract manufacturers' facilities, as a result of the COVID-19 outbreak, will increase the backlog of customer purchase orders for the near future.

Research and Development

Given that the Company's mission is to solve complex RF problems for our customers, research and development is essential to our long-term success. We work closely with our customers, consultants and market research organizations to monitor and predict changes in the wireless industry, including emerging industry standards. We continue to make substantial investments in engineering, talent, research and development and we devote substantial resources to product development, innovation, and patent submissions. We have over 100 patents in the U.S. and other countries worldwide. The patent submissions are primarily for defensive purposes, rather than for potential license revenue generation.

Sales, Marketing and Support

Our marketing strategy is focused on building market awareness and acceptance of our new products. In 2019, the Company increased the headcount in its marketing department to centralize and focus its marketing efforts. The Company's sales function is managed under the Chief Sales Officer who has primary responsibility for revenue generation and oversight of the worldwide sales force. PCTEL's direct sales force is technologically sophisticated with many sales personnel having college degrees in engineering and sales executives having strong industry domain knowledge. We supply our products to public and private carriers, wireless infrastructure providers, wireless equipment distributors, value added resellers ("VARs") and OEMs. Our direct sales force supports the sales efforts of our distributors and OEM resellers.

Manufacturing

We have historically done final assembly of most of our antenna products in-house at our facilities in Tianjin, China, and Bloomingdale, Illinois. In order to optimize the cost structure of our antenna product line, increase our competitiveness, and reduce our fixed costs in China, we are in the process of transitioning several product lines from our Tianjin facility to contract manufacturers in China and elsewhere. We expect to be substantially complete with the transition by the end of fiscal year 2020. We do final assembly of all of our test & measurement product in-house at our facility in Clarksburg, Maryland.

By transitioning some of our manufacturing to multiple contract manufacturers with a variety of expertise, we avoid becoming dependent on any specific contract manufacturer. If any contract manufacturer is unable to provide timely or satisfactory services for us, our other contract manufacturers will be available, provided, however, that transitioning production to a different contract manufacturer could cause delays, disruption and additional costs that could negatively impact timely delivery of our products and our earnings therefrom. We have no material guaranteed supply contracts or long-term agreements with any of our suppliers, but we do have open purchase orders with several of our suppliers. See the contractual obligations and commercial commitments section of Note 6 for information on purchase commitments.

Employees

As of December 31, 2019, we had 331 full-time equivalent employees, consisting of 197 in operations, 55 in research and development, 48 in sales and marketing, and 31 in general and administrative functions. Total full-time equivalent employees were 454 at December 31, 2018. Headcount decreased by 123 during 2019 primarily due to a reduction in operations headcount in our Tianjin facility. The headcount reduction in the Tianjin facility resulted from the transition of the final assembly of some of our antenna products to contract manufacturers, as indicated in the section titled "Manufacturing" above, and from decreased demand from some of our China-based customers, particularly for our small cell products which are manufactured in our Tianjin facility. All our employees in Tianjin, China are represented by a labor union, and our employees in Beijing, China are represented by a separate labor union pursuant to the requirements of China's National Labor Law. These two labor unions do not have collective bargaining rights. During 2019 we negotiated severance arrangements with the Tianjin-based employees. None of our U.S. employees are represented by a labor union.

Available Information

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to such reports, are available free of charge through our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the United States Securities and Exchange Commission (the "SEC"). Our website is located at the following address: *www.pctel.com*. The information within, or that can be accessed through our website, is not part of this Annual Report on Form 10-K. Further, the SEC maintains an Internet site that contains reports, proxy and information statements and other information regarding our filings at www.*sec.gov*.

Item 1A: Risk Factors

Factors That May Affect Our Business, Financial Condition and Future Operations

Risks Related to Our Business

Our business model depends upon our ability to recognize significant emerging technologies in a timely manner and to innovate to solve the engineering problems presented by such emerging technologies.

Our strength is solving complex network engineering problems through our products and solutions. In order to provide solutions to complex engineering problems, we must anticipate which technologies are promising and will be adopted by our customers and potential customers, and we need to be engaged early in the development of these new technologies and products. If we expend resources on the wrong technologies or are not included in the development phase of new technologies that are widely adopted in our industry, we may miss the opportunity for meaningful participation or revenue generation. Missed opportunities like these could have a negative impact on our long-term competitiveness.

To innovate and solve complex network engineering problems, we have to offer highly competitive compensation in order to attract and retain specific types of engineers and other skilled professionals. In addition, we must create intellectual property or obtain it from third parties when necessary. Failure to accomplish these tasks while managing the costs thereof will result in difficulty in distinguishing us from our competitors and may result in a significant loss of business or diminishing margin on our products.

We have significant international operations and face risks related to global public health crises such as the coronavirus epidemic.

Any outbreaks of contagious diseases and other adverse public health developments in countries where we operate could have a material and adverse effect on our business, financial condition and results of operations. For example, the recent worldwide outbreak of COVID-19 has resulted in significant governmental measures being implemented to control the spread of the virus, including temporary closure of businesses, severe restrictions on travel and the movement of people, and other material limitations on the conduct of business. These measures have resulted in work stoppages and other disruptions at our manufacturing facilities in China as well as the facilities of our suppliers, customers and our contract manufacturers. If our supply chain experiences extended disruptions, we may need to seek alternate sources of supply, which may be more expensive. Alternate sources may not be available or may result in delays in shipments to us from our supply chain and subsequently to our customers, each of which would affect our results of operations. Further, if our customers' businesses are similarly affected, they might delay or reduce purchases from us, which could adversely affect our results of operations. In addition, COVID-19 may result in a widespread health crisis that could adversely affect the economies and financial markets of many countries, resulting in an economic downturn that could affect demand for our products and our end customers' products. The extent to which COVID-19 will impact our business and our financial results will depend on future developments, which are highly uncertain and cannot be predicted.

Competition within the wireless product industry is intense and could result in decreased margins on our products or loss of key customers. Failure to compete successfully could materially harm our prospects and financial results.

Competition in our industry can result from the following:

- competitors, including foreign government-funded competitors, significantly reducing prices on their products causing disruption to our customer relationships;
- customers demanding lower prices and requiring suppliers like us to engage in auctions and other forms of competitive bidding for purchase orders;
- entrance of a significant competitor in the markets for our products, either from new participants, such as emerging low-cost Chinese competitors, or as a result of a merger of existing competitors; and
- competitors with substantially greater financial, marketing, technical and other resources with which to pursue engineering, manufacturing, marketing, and distribution of their products and delivery of their services. These competitors may succeed in establishing technology standards or strategic alliances in the connectivity products markets, obtain more rapid market acceptance for their products, or otherwise gain a competitive advantage.

Conducting business in foreign countries involves additional financial, operating, and regulatory risks.

A substantial portion of our manufacturing, and a portion of our research and development and sales activities is conducted outside the United States, primarily in China. There are a number of risks inherent in doing business in foreign countries, including: (i) fluctuations in the value of the U.S. dollar relative to other currencies, and in particular the impact of a re-valuation of the Chinese Yuan; (ii) impact of tariffs or trade wars among the countries in which we do business; (iii) difficulties in repatriation of earnings; (iv) disruption to our supply chain, whether as a result of the spread of COVID-19 or other factors which limit our ability to import materials and export products; (v) nationalist sentiment creating advantages for our competitors in their home countries; (vi) impact of labor unrest, potentially in connection with the reduction in force of a significant portion of our workforce in Tianjin, China (vii) unexpected legal or regulatory changes, particularly changes to environmental, labor or manufacturing regulations; (viii) lack of sufficient protection for intellectual property rights and the risk of theft and forced transfer of intellectual property; (ix) difficulties in recruiting and retaining personnel and managing international operations;(x) under-developed infrastructure; and (xi) other unfavorable political or economic factors which could include nationalization of the wireless communications or related industries. If we are unable to manage successfully these and other risks pertaining to our international activities, our operating results, cash flows and financial position could be materially and adversely affected.

In the third quarter 2018, the Office of the United States Trade Representative imposed tariffs on certain imports from mainland China containing industrially significant technologies and in September 2019 additional tariffs were imposed. In January 2020, the U.S. and China entered into a phase 1 trade deal which reduced the tariffs imposed in September 2019 from 15.0% to 7.5%. Currently all of our imports from China are subject to U.S. tariffs ranging from 7.5% to 25.0%. The tariffs apply to the antenna products sent from our facility in Tianjin, China and our China-based contract manufacturers to our U.S.-based customers and components and materials sent from our Tianjin facility and our China-based contract manufacturers to our Bloomingdale, Illinois facility for final assembly. Tariffs impact the gross margin that we earn on sales of our products. We will continue to monitor and adjust prices as necessary and as market conditions permit, but we may not be able to adjust our prices enough to cover the entire cost of the imposed tariffs. The impact of the tariffs on our future revenue and profitability is uncertain. We do not believe these price increases resulted in a significant loss of revenue in 2019. In addition, political uncertainty surrounding international trade disputes and protectionist measures may have a negative effect on customer confidence and spending.

Disruption in our manufacturing and supply chains could adversely impact our sales and reputation.

We have limited in-house manufacturing capability. For some product lines we outsource the manufacturing, assembly, and testing of printed circuit board subsystems. For other product lines, we purchase completed hardware platforms and add our proprietary software. While our suppliers have no unique capability, any failure by these suppliers to meet delivery commitments could cause delayed product delivery and potentially disrupt our supply chain and ability to accept new orders for products.

The spread of COVID-19 has impacted supply chains worldwide and may impact our ability to produce and sell products. See the risk factor presented under “We have significant international operations and face risks related to global public health crises such as the coronavirus epidemic.”

In addition, in the event that for any reason our suppliers discontinue manufacturing materials used in our products, we would be forced to incur the time and expense of finding a new supplier or to modify our products in such a way that such materials were not necessary. Either of these alternatives could result in increased manufacturing costs and increased prices of our products.

We assemble our antenna products in our facilities located in Bloomingdale, Illinois and Tianjin, China and test & measurement products at our facility in Clarksburg, Maryland. We may experience delays, disruptions, capacity constraints or quality control problems at our assembly facilities, which could result in lower yields or delays of product shipments to our customers. In addition, a number of our antenna products are currently manufactured in China via contract manufacturers and, as described in the section titled "Manufacturing" in Item 1 of this Form 10-K, we are transitioning additional products currently manufactured in our Tianjin facility to contract manufacturers in China and elsewhere. Any disruption of our own or contract manufacturers' operations could cause delayed product delivery, which could negatively impact our sales, competitive reputation and position. Moreover, if we do not accurately forecast demand for our products, we will have excess or insufficient parts to build our products, either of which could materially affect our operating results and may lead to obsolete inventory.

In summary, in order to be successful, we must manage our operations to limit the cost of product production, accurately forecast demand for our products, avoid excess production and inventory that results in waste or obsolescence, dual source critical materials to avoid shortages and delays in shipping, build for manufacturability and avoid excessive quality issues.

Future acquisitions and investments may not yield their intended benefits. Our failure to successfully integrate acquisitions into our existing operations could adversely affect our business.

In the future, we may make acquisitions of, or large investments in, businesses that offer products, and technologies that we believe would complement our products, including wireless products and technology. We may also make acquisitions of or investments in, businesses that we believe could expand our distribution channels. Even if we were to announce an acquisition, we may not be able to complete it. Additionally, any future acquisition or substantial investment would present numerous risks, including:

- difficulty in integrating the technology, operations, internal accounting controls or work force of the acquired business with our existing business,
- disruption of our on-going business,
- difficulty in realizing the potential financial or strategic benefits of the transaction,
- difficulty in maintaining uniform standards, controls, procedures and policies,
- tax, employment, logistics, and other related issues unique to international organizations and assets we acquire,
- possible impairment of relationships with employees and customers as a result of integration of new businesses and management personnel, and
- impairment of assets related to resulting goodwill, and reductions in our future operating results from amortization of intangible assets.

We expect that future acquisitions may be paid in cash, shares of our common stock, or a combination of cash and our common stock. If consideration for a transaction is paid in common stock, this would further dilute our existing stockholders. We may also incur debt to pay for an acquisition which could impose restrictive covenants on how we conduct our business.

Any delays in our sales cycles could result in customers canceling purchases of our products.

Sales cycles for our products with major customers can be lengthy, often lasting nine months or longer. In addition, it can take an additional nine months or more before a customer requires volume production of our products. Sales cycles with our major customers are lengthy for a number of reasons, including:

- our OEM customers and carriers usually complete a lengthy technical evaluation of our products, over which we have no control, before placing a purchase order, and
- the development of new technologies and commercialization of products incorporating new technologies frequently are delayed.

A significant portion of our operating expenses is relatively fixed and is largely based on our forecasts of volume and timing of orders. The lengthy sales cycles make forecasting the volume and timing of product orders difficult. In addition, the delays inherent in lengthy sales cycles raise additional uncertainty that customers may decide to cancel or change product phases. If customer cancellations or product changes were to occur, this could result in the loss of anticipated sales without enough time for us to reduce our operating expenses.

A failure in our information technology systems could negatively impact our business.

We rely on information technology to record and process transactions, manage our business and maintain the financial accuracy of our records. Our computer systems are subject to damage or interruption from various sources, including power outages, computer and telecommunications failures, computer viruses, security breaches, vandalism, catastrophic events and human error. Interruptions of our computer systems could disrupt our business and could result in the loss of business and cause us to incur additional expense.

Information technology security threats are increasing in frequency and sophistication. While we have engaged experts in cybersecurity to advise us and we have taken protective measures, our information technology systems could be breached by unauthorized outside parties or misused by employees or other insiders' intent on extracting sensitive information, corrupting information or disrupting business processes. Such unauthorized access could compromise confidential information, disrupt our business, harm our reputation, result in the loss of assets, customer confidence and business and have a negative impact on our financial results.

Additional income tax expense or exposure to additional income tax liabilities could have a negative impact on our financial results.

We are subject to income tax laws and regulations in the United States, China and various foreign jurisdictions. Significant judgment is required in evaluating and estimating our provision and accruals for these taxes. Our income tax liabilities are dependent upon the location of earnings among these different jurisdictions. Our income tax provision and income tax liabilities could be adversely affected by the jurisdictional mix of earnings, changes in valuation of deferred tax assets and liabilities and changes in tax laws and regulations. In the ordinary course of our business, we are also subject to continuous examinations of our income tax returns by tax authorities. Although we believe our tax estimates are reasonable, the final results of any tax examination or related litigation could be materially different from our related historical income tax provisions and accruals. Adverse developments in an audit, examination, litigation related to previously filed tax returns, or in the relevant jurisdiction's tax laws, regulations, administrative practices, principles and interpretations could have a material effect on our results of operations and cash flows in the period or periods for which that development occurs, as well as for prior and subsequent periods.

Risks Related to our Common Stock

The trading price of our stock fluctuates, sometimes significantly, based upon a variety of factors, many of which are not under our control.

Over time, our stock experiences significant changes in price on a percentage basis. The closing price of our common stock on the Nasdaq Global Select Market fluctuated between a high of $9.03 and a low of $4.32 during 2019. A variety of factors, many of which are not under of our control influence our stock price, including:

- adverse changes in domestic or global economic conditions, including COVID-19 and recessions
- new products offered by us or our competitors,
- actual or anticipated variations in quarterly operating results,
- changes in financial estimates by securities analysts,
- announcements of technological innovations,
- our announcement of significant acquisitions, strategic partnerships, joint ventures or capital commitments,
- conditions or trends in our industry,
- additions or departures of key personnel,
- mergers and acquisitions,
- sales of common stock by our stockholders or the Company, and
- repurchases of our common stock by the Company.

Provisions in our charter documents may inhibit a change of control or a change of management, which may cause the market price for our common stock to decline and may inhibit a takeover or change in our control that a stockholder may consider favorable.

Provisions in our charter documents could discourage potential acquisition proposals and could delay or prevent a change in control transaction that our stockholders may favor. Specifically, our charter documents do not permit stockholders to act by written consent, do not permit stockholders to call a stockholders meeting, and provide for a classified board of directors, which means stockholders can only elect, or remove, a limited number of our directors in any given year. These provisions could have the effect of discouraging others from making tender offers for our shares, and as a result, these provisions may prevent the market price of our common stock from reflecting the effects of actual or rumored takeover attempts and may prevent stockholders from reselling their shares at or above the price at which they purchased their shares. These provisions may also prevent changes in our management that our stockholders may favor.

Our board of directors has the authority to issue up to 5,000,000 shares of preferred stock in one or more series. The board of directors can fix the price, rights, preferences, privileges and restrictions of this preferred stock without any further vote or action by our stockholders. The rights of the holders of our common stock will be affected by, and may be adversely affected by, the rights of the holders of any preferred stock that may be issued in the future. Further, the issuance of shares of preferred stock may delay or prevent a change in control transaction without further action by our stockholders. As a result, the market price of our common stock may decline.

Item 1B: Unresolved Staff Comments

None.

Item 2: Properties

The following table lists our main facilities:

			Lease Term	
Location	**Square feet**	**Owned/Leased**	**Beginning**	**Ending**
Bloomingdale, Illinois	75,517	Owned	N/A	N/A
Tianjin, China	44,289	Leased	2012	2020
Clarksburg, Maryland	21,030	Leased	2019	2031
Beijing, China	11,270	Leased	2016	2020
Akron, Ohio	5,977	Leased	2018	2025
Englewood, Colorado	4,759	Leased/Subleased	2015	2020
Germantown, Maryland *	20,704	Leased	2012	2020

* lease terminated in February 2020

Facility Changes

In January 2019, we entered into an eleven-year lease ending February 28, 2031 for 21,030 square feet of office space in Clarksburg, Maryland for the Company's test & measurement product line. In January 2020, we completed the move to the new Clarksburg office from our Germantown, Maryland office. The lease for our Germantown facility ended in February 2020. The total lease payments for the eleven-year Clarksburg lease are $5.0 million and the Company will receive $1.5 million in tenant improvement incentives.

We will not renew the lease for our office space in Englewood, Colorado. We do expect to renew the leases in Beijing, China and Tianjin, China. With our Tianjin facility lease, we expect to decrease the square footage of the leased space as a result of our transition of manufacturing of high-volume products to contract manufacturers.

All properties are in good condition and are suitable for the purposes for which they are used. We believe that we have adequate space for our current needs.

Item 3: Legal Proceedings

We may be the subject of various pending or threatened legal actions in the ordinary course of our business. All such matters are subject to many uncertainties and outcomes that are not predictable with assurance. In our opinion, as of December 31, 2019, there were no claims or litigation pending that would be reasonably likely to have a material adverse effect on our consolidated financial position, results of operations or liquidity.

Item 4: Mine Safety Disclosures

Not applicable.

PART II

Item 5: Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

PCTEL's common stock has been traded on the Nasdaq Global Select Market under the symbol PCTI since our initial public offering on October 19, 1999. As of March 12, 2020, there were 35 holders of record of the common stock. A substantially greater number of holders of the common stock are in "street name" or beneficial holders, whose shares are held of record by banks, brokers, and other financial institutions.

Sales of Unregistered Equity Securities

None.

Issuer Purchases of Equity Securities

All share repurchase programs are authorized by our Board of Directors and are announced publicly. On November 6, 2019 the Board of Directors approved a share repurchase program pursuant to which the Company may repurchase up to $7.0 million of its common stock, effective immediately through the end of 2020. Such purchases may be made from time to time at predetermined prices in the open market, by block purchases, in private transactions or otherwise. The repurchases will be funded with cash on hand. Prior to November 2019, the Company did not have a repurchase program in effect pursuant to which the Company could have repurchased shares of its common stock in 2019. The Company did not repurchase any shares of its common stock during 2019.

Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations

The following commentary presents a discussion and analysis of the Company's financial condition and results of operations by its management. This review highlights the principal factors affecting earnings and the significant changes in balance sheet items for the years 2019 and 2018. Financial information for prior years is presented when appropriate. The objective of this financial review is to enhance investor understanding of the accompanying tables and charts, the consolidated financial statements, notes to financial statements, and financial statistics appearing elsewhere in this Annual Report on Form 10-K. Where applicable, this discussion also reflects management's insights with respect to known events and trends that have or may reasonably be expected to have a material effect on the Company's operations and financial condition.

You should read this discussion of the Company's financial condition and results of operations in conjunction with, and we qualify our discussion in its entirety by, the consolidated financial statements and notes thereto included elsewhere within this annual report, the material contained under Part 1, Item 1. "Description of Business" and Part I, Item 1A. "Risk Factors" of this annual report, and the cautionary disclosure about forward-looking statements at the front of Part I of this annual report.

Introduction

PCTEL is a leading global supplier of wireless network antenna and test solutions.

We design and manufacture precision antennas and provides test & measurement products that improve the performance of wireless networks globally. PCTEL products address three market segments: Enterprise Wireless, Intelligent Transportation, and Industrial Internet of Things ("IoT"). PCTEL antennas are deployed in small cells, enterprise Wi-Fi access points, fleet management and transit systems, and in network equipment and devices for the Industrial Internet of Things ("IIoT"). Revenue growth in these markets is driven by the increased use and complexity of wireless communications. Consistent with our mission to solve complex network engineering problems and in order to compete effectively in the antenna market, PCTEL maintains expertise in the following areas: radio frequency engineering, wireless network engineering, mechanical engineering, mobile antenna design, manufacturing, and product quality and testing. We seek out product applications that command a premium for product design and performance and customer service, and we avoid commodity markets.

PCTEL antennas are primarily sold to original equipment manufacturer ("OEM") providers where they are designed into the customer's solution. Competition in the antenna markets is fragmented. Competitors include Airgain, Amphenol, Laird, Panorama, and Taoglas.

PCTEL's test & measurement product provides test & measurement tools that improve the performance of wireless networks globally with a focus on LTE, public safety, and 5G technologies. Network operators, neutral hosts, and equipment manufacturers rely on our scanning receivers and testing solutions to analyze, design, and optimize next generation wireless networks. Revenue growth is driven by the implementation and roll out of new wireless technology standards (i.e. 3G to 4G, 4G to 5G). Consistent with our mission to solve complex network engineering problems and in order to compete effectively in the radio frequency ("RF") test & measurement market, PCTEL maintains expertise in the following areas: radio frequency engineering, digital signal process engineering, wireless network engineering, mechanical engineering, manufacturing, and product quality and testing. Our test equipment is sold directly to wireless carriers or to OEM providers who integrate our products into their solutions which are then sold to wireless carriers. Competitors for PCTEL's test tool products include OEMs such as Anritsu, Berkley Varitronics, Digital Receiver Technology, and Rohde and Schwarz.

Financial Summary

Revenues were $90.6 million for the year ended December 31, 2019, an increase of 9.2% from the prior year. By product line, revenues increased to $28.1 million by $11.4 million (68%) for test & measurement products and decreased to $62.7 million by $3.6 million (5.5%) for antenna products. Gross margins of $41.5 million were higher by $10.4 million due to the impact of higher revenues, a higher mix of test & measurement products which have a higher margin than antenna products, and higher gross margin percentages within both product lines compared to 2018. Operating expenses of $38.7 million increased by $2.0 million as 2019 included higher incentive compensation expense of $2.7 million, higher sales commissions of $0.6 million, and restructuring expense of $0.5 million, partially offset by lower intangible amortization expense of $0.2 million and because 2018 included separation costs and other related costs of $1.0 million associated with headcount with our corporate reorganization. Higher interest income provided additional other income of $0.4 million in 2019 compared to 2018. The net impact of these changes resulted in income before tax of $3.8 million in 2019 compared to a loss before tax of $5.1 million in 2018.

Results of Operations
Years ended December 31, 2019 and 2018
(All amounts in tables, other than percentages, are in thousands)

REVENUES BY PRODUCT LINE

	2019 compared to 2018			
	2019	$ Change	% Change	2018
Antenna Products	$ 62,708	$ (3,620)	-5.5%	$ 66,328
Test & Measurement Products	28,115	11,382	68.0%	16,733
Corporate	(206)	(124)	not meaningful	(82)
Total	$ 90,617	$ 7,638	9.2%	$ 82,979

Revenues for antenna products and other emerging technologies of $62.7 million decreased $3.6 million (5.5%) compared to 2018, as lower revenues for small cell antennas and for Enterprise Wireless applications were partially offset by higher revenues generated by Intelligent Transportation project. The decline in revenues for small cell antennas is primarily due to lower demand from Huawei Technologies Co., Ltd. resulting from restrictions imposed by the U.S. Department of Commerce on sales of certain products to Huawei. The restrictions were unanticipated and negatively impacted our antenna revenue. Revenues from Huawei declined by $4.5 million for the year ended December 31, 2019 compared to the year ended December 31, 2018. Revenues for antenna products decreased in 2019 in Asia Pacific by approximately $5.6 million, partially offset by a net increase of $2.0 million from the Americas and Europe.

Revenues for test & measurement products of $28.1 million increased by $11.4 million (68.0%) due to increased demand for products with 5G technology. Revenues increased for test & measurement products in all geographic regions. The roll out of 5G technology drove revenue growth in the U.S., Europe, and in the Asia Pacific region, and test & measurement equipment for public safety applications drove revenue growth in the U.S. market.

GROSS MARGIN BY PRODUCT LINE

	2019	% of Revenues	2018	% of Revenues
Antenna Products	$ 21,841	34.8%	$ 20,157	30.4%
Test & Measurement Products	19,640	69.9%	10,883	65.0%
Corporate	31	not meaningful	41	not meaningful
Total	$ 41,512	45.8%	$ 31,081	37.5%

The gross margin percentage was 45.8% for the year ended December 31, 2019, an increase of 8.3% compared to 2018. Approximately 3.9% of the gross margin percentage increase was due to a higher mix of test & measurement products in 2019. The proportion of revenues from test & measurement products as a percentage of total revenues increased from 20% in 2018 to 31% in 2019. The remainder of the gross margin percentage increase is due to higher gross margin percentages in both product lines in 2019 compared to 2018. For antenna products, the gross margin percentage increased by 4.4% primarily due to more favorable product mix, but also because 2018 included costs associated with headcount reductions associated with our corporate reorganization in the third quarter 2018. For test & measurement products, the gross margin percentage increased by 4.9% primarily due to volume increase and also due to more favorable product mix.

CONSOLIDATED OPERATING EXPENSES

				% of Revenues	
	2019	Change	2018	2019	2018
Research and development	$ 12,272	$ 421	$ 11,851	13.5%	14.3%
Sales and marketing	12,254	171	12,083	13.5%	14.6%
General and administrative	13,452	1,097	12,355	14.8%	14.9%
Amortization of intangible assets	219	(199)	418	0.2%	0.5%
Restructuring expenses	507	507	0	0.6%	0.0%
	$ 38,704	$ 1,997	$ 36,707	42.7%	44.2%

Research and development expenses increased by $0.4 million from 2018 to 2019 as expense for incentive compensation was $0.6 higher in 2019 compared to 2018 offset by a reduction in headcount-related expenses for antenna products in Beijing. In March 2018, we opened a development center for wireless products in Akron, Ohio and invested in specialized equipment, testing chamber, and office improvements to further support our strategies in these vertical markets. We had 55 full-time equivalent employees in research and development at December 31, 2019 and 2018, respectively.

Sales and marketing expenses include costs associated with the sales and marketing employees, sales representatives, product line management, and trade show and other direct marketing expenses. Sales and marketing expenses increased $0.2 million from 2018 to 2019 as sales commissions were higher by $0.7 million and marketing expenses and product management expenses were higher by $0.2 million, but bad debt expense was lower by $0.3 million, sales salary expense was lower by $0.2 million, and 2018 included severance expense of $0.2 million. We had 48 and 42 full-time equivalent employees in sales and marketing at December 31, 2019 and 2018, respectively.

General and administrative expenses include costs associated with the general management, finance, human resources, information technology, legal, public company costs, and other operating expenses to the extent not otherwise allocated to other functions. General and administrative expenses increased $1.1 million from 2018 to 2019. Performance-based incentive compensation expense increased by $2.2 million for the year ended December 31, 2019, but time-based stock-based compensation declined by $0.5 million and administrative expenses declined by $0.1 million for our China operations, and the year ended December 31, 2018 included $0.5 million related to executive separations. We had 31 and 33 full-time equivalent employees in general and administrative functions at December 31, 2019 and 2018, respectively.

Amortization of intangible assets within operating expenses was approximately $0.2 million and $0.4 million for the years ended December 31, 2019 and 2018, respectively. Amortization expense decreased by approximately $0.2 million in 2019 compared to 2018 because certain assets were fully amortized in 2019.

Restructuring expenses of $0.5 million in 2019 consisted of employee severance and payroll related costs associated with the termination of 84 employees in connection with our transition of certain manufacturing activities in our Tianjin, China facility to contract manufacturers. Upon completion of our China transition plan, we anticipate total severance costs to be approximately $0.9 million incurred by the end of 2020.

OPERATING PROFIT (LOSS)

	2019	% of Revenues	2018	% of Revenues
Total	$ 2,808	3.1%	$ (5,626)	-6.8%

Total operating profit increased $8.5 million for the year ended December 31, 2019 compared to 2018 as the gross margin impact of higher revenues and higher gross margin percentages offset higher operating expenses.

OTHER INCOME, NET

	2019	2018
Interest income	$ 833	$ 623
Foreign exchange gains (losses)	130	(77)
Other, net	19	18
	$ 982	$ 564
Percentage of revenues	1.1%	0.7%

Other income, net consists of interest income, foreign exchange gains and losses, and interest expense. For the year ended December 31, 2019, interest income increased by $0.2 million due to higher average investment balances and higher average interest rates. Foreign exchange gains (losses) are due to fluctuations of the Chinese Yuan to the U.S. Dollar.

EXPENSE FOR INCOME TAXES

	2019	2018
Expense for income taxes	$ 40	$ 7,827
Effective tax rate	1.1%	-154.6%

The effective tax rate for the year ended December 31, 2019 decreased from the statutory rate of 21.0% by approximately 20% primarily because we have a full valuation allowance on our deferred tax assets.

In accordance with ASC 740 “Accounting for Income Taxes” (“ASC 740”), we evaluate our deferred income tax assets quarterly to determine if valuation allowances are required or should be adjusted. ASC 740 requires that companies assess whether valuation allowances should be established against their deferred tax assets based on consideration of all available evidence, both positive and negative, using a “more likely than not” standard of whether the deferred tax assets will be realized. Our net deferred tax assets consist of assets related to net operating losses and credits as well as assets related to timing differences.

We generated book and tax income during 2019 but our cumulative pre-tax U.S. profit for the three-year period ending December 31, 2019 is $0.1 million. We incurred significant losses during the year ended December 31, 2018 and we have historically not met our projections. While the Company believes its financial outlook remains positive, under the accounting standards objective verifiable evidence will have greater weight than subjective evidence such as the Company’s projections for future growth. Based on an evaluation in accordance with the accounting standards, as of December 31, 2019, we maintained a full valuation allowance on our deferred tax assets. We have a valuation allowance of $13.1 million recorded against our net U.S. deferred tax assets and a valuation allowance of $0.5 million recorded against our net China deferred tax assets in order to measure the deferred tax assets that are more likely than not to be realized based on the weight of all the available evidence.

Until an appropriate level of profitability is attained, we expect to maintain a full valuation allowance on our U.S. net deferred tax assets, and our China net deferred tax assets. Any U.S. or China tax benefits or tax expense recorded on our Consolidated Statement of Operations will be offset with a corresponding valuation allowance until such time that we change our determination related to the realization of deferred tax assets. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust its valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

The analysis that we prepared to determine the valuation allowance required significant judgment and assumptions regarding future market conditions as well as forecasts for profits, taxable income, and taxable income by jurisdiction. Due to the sensitivity of the analysis, changes to the assumptions in subsequent periods could have a material effect on the valuation allowance.

The effective tax rate differed from the statutory rate of 21.0% for the year ended December 31, 2018 by approximately 176% because we recorded an adjustment to our valuation allowance on our deferred tax assets. During the year ended December 31, 2018, we recorded an adjustment to the valuation allowance of approximately $9.2 million related to deferred tax assets for U.S. federal and state operating losses generated in 2018, U.S. federal and state timing differences, and China deferred tax assets. The adjustment to the valuation allowance reflected an increase to a full valuation allowance from a partial valuation allowance.

On December 22, 2017, the United States federal government enacted the Tax Cuts and Jobs Act (the “Tax Act”), marking a change from a worldwide tax system to a modified territorial tax system in the United States. As part of this change, the Tax Act, among other changes, provided for a Transition Tax, a reduction of the U.S. federal corporate income tax rate from 34% to 21%, and an indefinite carryforward for net operating losses in 2018 and future periods subject to an 80% annual income limitation against future income. We completed the accounting in the fourth quarter 2018 upon filing our U.S. Federal tax returns and adjusted our Transition Tax by $0.1 million.

The Tax Act also included global intangible low-taxed income (“GILTI”) provisions. Under the provisions, a U.S. shareholder of controlled foreign corporations (“CFCs”) is required to include in gross income the amount of its GILTI. Generally, the GILTI inclusion is the U.S. shareholder’s allocable share of certain income earned through its CFCs (“net CFC tested income”) in excess of a deemed 10% return on the shareholder’s allocable share of the CFC’s depreciable, tangible assets less certain interest expense items (“net deemed tangible income return”). Under U.S. GAAP, we elected to treat taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the "period cost method"). The amount included for GILTI did not have a significant impact on the Company’s tax provision for the year ended December 31, 2019 or 2018.

See Note 5 of the consolidated financial statements for more information on income taxes.

LIQUIDITY AND CAPITAL RESOURCES

At December 31, 2019, our cash, cash equivalents, and investments were approximately $39.7 million, and we had working capital of approximately $58.2 million. At December 31, 2019 we had $2.1 million of cash held in China to support our operations in country. This cash cannot be accessed without incurring a local withholding tax rate of 10%. These funds are currently considered permanently reinvested. Our primary source of liquidity is cash provided by operations and a significant balance of cash, with short term swings in liquidity supported short-term investments. The balance has fluctuated with cash from operations, acquisitions and divestitures, payment of dividends and the repurchase of our common shares.

Within operating activities, we are historically a net generator of operating funds from our income statement activities. In periods of expansion, we expect to use cash from our balance sheet.

Within investing activities, capital spending historically ranges between 2.0% and 4.0% of our revenues and the primary use of capital is for manufacturing and engineering development requirements. Our capital expenditures during the year ended December 31, 2019 was approximately 2.5% of revenues. We historically have significant transfers between investments and cash as we rotate our large cash balances and short-term investment balances between money market funds, which are accounted for as cash equivalents, and other investments. We have a history of supplementing our organic revenue growth with acquisitions of product lines or companies, resulting in significant uses of our cash and short-term investment balances from time to time. We expect the historical trend for capital spending and the variability caused by moving money between cash and investments and periodic acquisition activity to continue in the future.

Within financing activities, we are a net user of funds. We have historically used funds for quarterly dividends but generated funds from the exercise of stock options and proceeds from the issuance of common stock through the Employee Stock Purchase Plan ("ESPP"). We also periodically repurchase shares of our common stock through share repurchase programs. In November 2019, our Board of Directors approved a share repurchase up to $7.0 million of our common stock. No shares have been purchased as of the date of this report.

We believe that cash generated by operating activities, our short-term investment balances, and cash on our balance sheet will be enough to support our operations for the next 12 months, including dividend payments and capital expenditures.

The following table is a summary of cash flow activity for the years ended December 31, 2019 and 2018:

	Years Ended December 31,	
	2019	2018
Net cash flow provided by (used in):		
Operating activities	$ 10,918	$ 3,943
Investing activities	$ (3,949)	$ (1,110)
Financing activities	$ (4,136)	$ (4,032)
Net increase (decrease) in cash and cash equivalents	$ 2,833	$ (1,199)

Operating Activities:

We generated $10.9 million of funds from operating activities during the year ended December 31, 2019. The cash from operating activities was due to net income of $3.8 million, the add-back of $7.9 million for non-cash expenses, offset by changes in operating assets and liabilities of $0.8 million. We used cash of $2.8 million for the decrease of accounts payable. Accounts receivable increased by $1.5 million primarily because revenues were higher in the fourth quarter 2019 by $1.7 million compared to the fourth quarter 2018. Accrued liabilities were higher by $2.3 million primarily because the Company's accrual for its Short-Term Incentive Plan was $2.6 million at December 31, 2019 and was $0 at December 31, 2018.

We generated $3.9 million of funds from operating activities during the year ended December 31, 2018. Adjustments related to non-cash items within net income were $15.2 million for the year ended December 31, 2018, as amortization and depreciation was $3.9 million, stock-based compensation was $3.3 million, and a $7.8 million adjustment to the deferred tax provision. Within the balance sheet, we generated cash of $2.4 million from the reduction of accounts receivable and $1.1 million from the increase of accounts payable, but we used $1.7 million from the reduction of other liabilities. Accounts receivable declined primarily due to lower revenue in Q4 2018 compared to the same period in 2017. Other liabilities declined because the 2018 Short-Term Incentive Plan liability was $0. The liability at December 31, 2017 was $1.7 million.

Investing Activities:

Our investing activities used $3.9 million of cash during the year ended December 31, 2019. Redemptions and maturities of our short-term investments during the year provided $46.6 million in cash and we rotated $48.2 million of cash into new short-term investments. We used $2.3 million of cash for capital expenditures during the year ended December 31, 2019. The capital expenditures during 2019 included $0.6 million for leasehold improvements for the new Clarksburg, Maryland office.

Our investing activities used $1.1 million of cash during the year ended December 31, 2018. Redemptions and maturities of our short-term investments during the year provided $46.2 million in cash and we rotated $44.6 million of cash into new short-term investments. We used $2.8 million of cash for capital expenditures during the year ended December 31, 2018. Capital expenditures during 2018 include $1.1 million for specialized equipment, testing chamber, and leasehold improvements for the wireless product development center in Akron, Ohio.

Financing Activities:

We used $4.1 million of cash for financing activities during the year ended December 31, 2019. We used $4.1 million for cash dividends paid quarterly during 2019. We received $1.2 million in proceeds from the purchase of shares through our ESPP. We used $1.2 million for payroll taxes related to stock-based compensation. The tax payments related to our stock issued for restricted stock awards.

We used $4.0 million of cash for financing activities during the year ended December 31, 2018. We used $4.0 million for cash dividends paid quarterly during 2018. We received $0.7 million in proceeds from the purchase of shares through our ESPP. We used $0.6 million for payroll taxes related to stock-based compensation. The tax payments related to our stock issued for restricted stock awards.

Contractual Obligations and Commercial Commitments

The following summarizes our contractual obligations at December 31, 2019 for office and product assembly facility leases, office equipment leases and purchase obligations, and the effect such obligations are expected to have on the liquidity and cash flows in future periods (in thousands):

		Payments Due by Period				
		Total	Less than 1 year	1-3 years	4-5 years	After 5 years
Facility leases	(a)	$ 5,660	$ 306	$ 1,599	$ 1,082	$ 2,673
Future payments for maintenance lease of office equipment	(b)	199	41	124	34	0
Purchase obligations	(c)	7,999	7,948	51	0	0
Total		$ 13,858	$ 8,295	$ 1,774	$ 1,116	$ 2,673

(a) Future payments for the lease of office and production facilities.
(b) Future payments for the maintenance lease of office equipment.
(c) Purchase orders or contracts for the purchase of inventory, as well as for other goods and services, in the ordinary course of business, and excludes the balances for purchases currently recognized as liabilities on the balance sheet.

We have a liability related to uncertain positions for income taxes of $0.8 million at December 31, 2019. We do not know when this obligation will be settled.

Off-Balance Sheet Arrangements

None.

Critical Accounting Policies and Estimates

The preparation of our consolidated financial statements in accordance with generally accepted accounting principles requires us to make estimates and judgments that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the period reported. By their nature, these estimates and judgments are subject to an inherent degree of uncertainty. Management bases its estimates and judgments on historical experience, market trends, and other factors that are believed to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions.

Revenue Recognition - We sell antenna products and test & measurement products. All of our revenue relates to contracts with customers. Our accounting contracts are from purchase orders or purchase orders combined with purchase agreements. The majority of our revenue is recognized on a "point-in-time" basis and a nominal amount of revenue is recognized "over time". For the sale of antenna products and test & measurement products, we satisfy our performance obligations generally at the time of shipment, or upon delivery based on the contractual terms with our customers. For antenna products shipped on consignment, we recognize revenue upon delivery from the consignment location. For our test & measurement software tools, we have performance obligations to provide software maintenance and support for one year. We recognize revenues for the maintenance and support over this period. We allow our major antenna product distributors to return a limited number of products under specified terms and conditions and accrue for product returns. See Note 14 for additional information related to revenue policies.

Accounts Receivable and Allowance for Doubtful Accounts - Accounts receivable is recorded at invoiced amount. We extend credit to our customers based on an evaluation of a customer's financial condition and collateral is generally not required. We maintain an allowance for doubtful accounts for estimated uncollectible accounts receivable. The allowance is based on our assessment of known delinquent accounts, historical experience, and other currently available evidence of the collectability and the aging of accounts receivable. Although management believes the current allowance is sufficient to cover existing exposures, there can be no assurance against the deterioration of a major customer's creditworthiness, or against defaults that are higher than what has been experienced historically.

Excess and Obsolete Inventory - We maintain reserves to reduce the value of inventory to net realizable value and reserves for excess and obsolete inventory. Reserves for excess inventory are calculated based on our estimate of inventory in excess of normal and planned usage. Reserves for obsolete inventory are based on our identification of inventory where carrying value is above net realizable value. We believe the accounting estimate related to excess and obsolete inventory is a critical accounting estimate because it requires us to make assumptions about future sales volumes and product mix, both of which are highly uncertain. Changes in these estimates can have a material impact on our financial statements.

Warranty Costs - We offer repair and replacement warranties of primarily five years for antenna products and scanning receiver products. Our warranty reserve is based on historical sales and costs of repair and replacement trends. We believe that the accounting estimate related to warranty costs is a critical accounting estimate because it requires us to make assumptions about matters that are highly uncertain, including future rates of product failure and repair costs. Changes in warranty reserves could be material to our financial statements.

Stock-based Compensation - We recognize stock-based compensation expense for all equity awards in accordance with fair value recognition provisions. For service-based equity awards, we amortize stock-based compensation expense over the requisite service period. For performance-based equity awards, we amortize stock-based compensation expense based on the estimated achievement award over the performance period. We record forfeitures as incurred. Stock-based compensation expense is dependent on assumptions used in calculating such amounts. These assumptions include risk-free interest rates, expected term of the stock-based compensation instrument granted, volatility of stock and option prices, expected time between grant date and date of exercise, attrition, performance, and other factors. These factors require us to use judgment. Our estimates of these assumptions typically are based on historical experience and currently available marketplace data. While management believes that the estimates used are appropriate, differences in actual experience or changes in assumptions may affect our future stock-based compensation expense and disclosures.

Income Taxes - Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

Our Company has an international subsidiary located in Tianjin and a representative office located in Hong Kong. Our Tianjin subsidiary has a branch office in Beijing, China. The complexities that arise from operating in different tax jurisdictions inevitably lead to an increased exposure to worldwide taxes. Should review of the tax filings result in unfavorable adjustments to our tax returns, the operating results, cash flows, and financial position could be materially and adversely affected.

We are subject to the continuous examination of our income tax returns by the Internal Revenue Service and other tax authorities. A change in the assessment of the outcomes of such matters could materially impact our consolidated financial statements. The calculation of tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for anticipated tax audit issues based on our estimate of whether, and the extent to which, additional taxes may be required. If we ultimately determine that payment of these amounts is unnecessary, then we reverse the liability and recognize a tax benefit during the period in which we determine that the liability is no longer necessary. We also recognize tax benefits to the extent that it is more likely than not that our positions will be sustained if challenged by the taxing authorities. To the extent we prevail in matters for which liabilities have been established or are required to pay amounts in excess of our liabilities, our effective tax rate in a given period may be materially affected. An unfavorable tax settlement would require cash payments and may result in an increase in our effective tax rate in the year of resolution. A favorable tax settlement would be recognized as a reduction in our effective tax rate in the year of resolution.

Valuation Allowances for Deferred Tax Assets - We establish an income tax valuation allowance when available evidence indicates that it is more likely than not that all or a portion of a deferred tax asset will not be realized. In assessing the need for a valuation allowance, we consider the amounts and timing of expected future deductions or carryforwards and sources of taxable income that may enable utilization. We maintain an existing valuation allowance until enough positive evidence exists to support its reversal. Changes in the amount or timing of expected future deductions or taxable income may have a material impact on the level of income tax valuation allowances. Our assessment of the realizability of the deferred tax assets requires judgment about our future results. Inherent in this estimation is the requirement for us to estimate future book and taxable income and possible tax planning strategies. These estimates require us to exercise judgment about our future results, the prudence and feasibility of possible tax planning strategies, and the economic environment in which we do business. It is possible that the actual results will differ from the assumptions and require adjustments to the allowance. Adjustments to the allowance would affect future net income.

Impairment Reviews of Goodwill – We perform an annual impairment test of goodwill as of the end of the first month of the fiscal fourth quarter (October 31st), or at an interim date if an event occurs or if circumstances change that would indicate that an impairment loss may have been incurred. In performing our annual impairment test, we may consider qualitative factors that would indicate possible impairment. A quantitative fair value assessment is performed at the reporting unit level. If the carrying value exceeds the fair value, the implied fair value of goodwill is then compared against the carrying value of goodwill to determine the amount of impairment.

The process of evaluating the potential impairment of goodwill is subjective because it requires the use of estimates and assumptions in determining a reporting unit's fair value. We calculate the fair value of each reporting unit by using the income approach based on the present value of future discounted cash flows. The discounted cash flow method requires us to use estimates and judgments about the future cash flows of the reporting units. Although we base cash flow forecasts on assumptions that are consistent with plans and estimates we use to manage the underlying reporting units, there is significant judgment in determining the cash flows attributable to these reporting units, including markets and market share, sales volumes and mix, research and development expenses, tax rates, capital spending, discount rate and working capital changes. Cash flow forecasts are based on reporting unit operating plans for the early years and business projections in later years. We believe the accounting estimate related to the valuation of goodwill is a critical accounting estimate because it requires us to make assumptions that are highly uncertain about the future cash flows of our reporting units.

Impairment Reviews of Finite-Lived Intangible Assets - We evaluate the carrying value of finite-lived intangible assets and other long-lived assets for impairment whenever indicators of impairment exist. We test finite-lived intangible assets for recoverability using undiscounted cash flows. Although we base cash flow forecasts on assumptions that are consistent with plans and estimates we use to manage the underlying reporting units, there is significant judgment in determining the cash flows attributable to these reporting units, including markets and market share, sales volumes and mix, research and development expenses, capital spending and working capital changes. Cash flow forecasts are based on operating plans and business projections. We compare the tax-affected undiscounted cash flows to the carrying value of the asset group. If the carrying value exceeds the sum of the undiscounted cash flows of the asset group, we would assess the fair value of the intangible assets in the group to determine if an impairment charge should be recognized in the financial statements.

We believe the accounting estimate related to the valuation of intangible assets is a critical accounting estimate because it requires us to make assumptions about future sales prices and volumes for products that involve new technologies and applications where customer acceptance of new products or timely introduction of new technologies into their networks are uncertain. The recognition of impairment could be material to our financial statements.

Recent Accounting Pronouncements

See Note 1 Organization and Summary of Significant Accounting Policies in Item 1 of this Form 10-K for a discussion of recent accounting pronouncements.

Item 7A: Quantitative and Qualitative Disclosures about Market Risk

We are exposed to market risk from changes in interest rates, foreign exchange rates, credit risk, and investment risk as follows:

Interest Rate Risk

We manage the sensitivity of our results of operations to interest rate risk on cash equivalents by maintaining a conservative investment portfolio. The primary objective of our investment activities is to preserve principal without significantly increasing risk. To achieve this objective, we maintain our portfolio of cash equivalents and short-term investments in U.S. government agency bonds or money market funds invested exclusively in government agency bonds and A or higher rated corporate bonds.

Due to changes in interest rates, our future investment income may fall short of expectations. A hypothetical increase or decrease of 10% in market interest rates would not result in a material change in interest income earned through maturity on investments held at December 31, 2019. We do not hold or issue derivatives, derivative commodity instruments or other financial instruments for trading purposes.

Foreign Currency Risk

We are exposed to currency fluctuations due to our foreign operations and because we sell our products internationally. We manage the sensitivity of our international sales by denominating the majority of transactions in U.S. dollars. During 2019, approximately 4% of our billings were in the Chinese yuan. We manage these operating activities at the local level and revenues, costs, assets and liabilities are generally denominated in local currencies, thereby mitigating the risk associated with fluctuations in foreign exchange rates. However, our results of operations and assets and liabilities are reported in U.S. dollars and thus will fluctuate with changes in exchange rates between such local currencies and the U.S. dollar. As exchange rates vary, these results, when translated, may vary from expectations and adversely impact overall expected profitability.

We had $2.1 million of cash in bank accounts in China at December 31, 2019. As of December 31, 2019, we had no intention of repatriating cash in our foreign bank accounts in China. If we decide to repatriate the cash in these foreign bank accounts, we may experience difficulty in repatriating the cash in a timely manner. We may also be exposed to foreign currency fluctuations and taxes if we repatriate these funds.

We completed the closure of our Israel subsidiary during the fourth quarter 2018 and repatriated the remaining cash of $0.2 million during the second quarter of 2019.

Credit Risk

The financial instruments that potentially subject us to credit risk consist primarily of trade receivables. For trade receivables, credit risk is the potential for a loss due to a customer not meeting its payment obligations. Our customers are concentrated in the wireless communications industry. Estimates are used in determining an allowance for amounts which we may not be able to collect, based on current trends, the length of time receivables are past due and historical collection experience. Provisions for and recovery of bad debts are recorded as sales and marketing expense in the consolidated statements of operations. We perform ongoing evaluations of customers' credit limits and financial condition. We do not require collateral from customers, but for some customers we do require partial or full prepayments.

The following tables represents customers that accounted for 10% or more of total trade accounts receivable at December 31, 2019 and 2018.

	As of December 31,	
Trade Accounts Receivable	**2019**	**2018**
Customer A	15%	9%
Customer B	11%	1%
Customer C	8%	13%

Item 8: Financial Statements and Supplementary Data

PCTEL, INC.
INDEX TO THE CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
PCTEL, Inc.

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of PCTEL Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity, and cash flows for each of the years then ended, and the related notes and financial statement schedule included under Item 15(a) (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years then ended, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"), and our report dated March 13, 2020 expressed "an unqualified opinion".

Change in accounting principle

As discussed in Note 7 to the consolidated financial statements, the Company has changed its method of accounting for lease arrangements in 2019 due to the adoption of Accounting Standards Update (ASU) No. 2016-02, *Leases (Topic 842)*.

Basis for opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Grant Thornton LLP

We have served as the Company's auditor since 2006.

Chicago, Illinois
March 13, 2020

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
PCTEL, Inc.

Opinion on internal control over financial reporting

We have audited the internal control over financial reporting of PCTEL, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2019, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated financial statements of the Company as of and for the year ended December 31, 2019, and our report dated March 13, 2020 expressed an unqualified opinion on those financial statements.

Basis for opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and limitations of internal control over financial reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Grant Thornton LLP

Chicago, Illinois
March 13, 2020

PCTEL, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

	December 31, 2019	December 31, 2018
ASSETS		
Cash and cash equivalents	$ 7,094	$ 4,329
Short-term investment securities	32,556	30,870
Accounts receivable, net of allowances of $104 and $63 at December 31, 2019 and December 31, 2018, respectively	17,380	15,864
Inventories, net	11,935	12,848
Prepaid expenses and other assets	1,842	1,416
Total current assets	70,807	65,327
Property and equipment, net	11,985	12,138
Goodwill	3,332	3,332
Intangible assets, net	144	1,029
Other noncurrent assets	2,969	45
TOTAL ASSETS	**$ 89,237**	**$ 81,871**
LIABILITIES AND STOCKHOLDERS' EQUITY		
Accounts payable	$ 3,190	$ 6,083
Accrued liabilities	9,382	5,801
Total current liabilities	12,572	11,884
Long-term liabilities	3,315	381
Total liabilities	15,887	12,265
Stockholders' equity:		
Common stock, $0.001 par value, 100,000,000 shares authorized, 18,611,289 and 18,271,249 shares issued and outstanding at December 31, 2019 and December 31, 2018, respectively	19	18
Additional paid-in capital	133,954	133,859
Accumulated deficit	(60,305)	(64,055)
Accumulated other comprehensive loss	(318)	(216)
Total stockholders' equity	73,350	69,606
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	**$ 89,237**	**$ 81,871**

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

PCTEL, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Years Ended December 31, 2019	Years Ended December 31, 2018
REVENUES	$ 90,617	$ 82,979
COST OF REVENUES	49,105	51,898
GROSS PROFIT	41,512	31,081
OPERATING EXPENSES:		
Research and development	12,272	11,851
Sales and marketing	12,254	12,083
General and administrative	13,452	12,355
Amortization of intangible assets	219	418
Restructuring expenses	507	0
Total operating expenses	38,704	36,707
OPERATING INOME (LOSS)	2,808	(5,626)
Other income, net	982	564
INCOME (LOSS) BEFORE INCOME TAXES	3,790	(5,062)
Expense for income taxes	40	7,827
NET INCOME (LOSS)	**$ 3,750**	**$ (12,889)**
Net Income (Loss) per Share:		
Basic	$ 0.21	$ (0.75)
Diluted	$ 0.21	$ (0.75)
Weighted Average Shares:		
Basic	17,852,968	17,185,657
Diluted	18,158,659	17,185,657
Cash dividend per share	$ 0.22	$ 0.22

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

PCTEL, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in thousands, except per share data)

	Years Ended December 31,	
	2019	**2018**
NET INCOME (LOSS)	$ 3,750	$ (12,889)
OTHER COMPREHENSIVE LOSS		
Foreign currency translation adjustments	(102)	(270)
COMPREHENSIVE INCOME (LOSS)	**$ 3,648**	**$ (13,159)**

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

PCTEL, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)

	Common Stock	Additional Paid-In Capital	Retained Deficit	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity of PCTEL, Inc.
BALANCE at DECEMBER 31, 2017	$ 18	$ 134,505	$ (51,258)	$ 54	$ 83,319
Cumulative-effect adjustment resulting from adoption of ASU 2016-16			92		92
BALANCE at JANUARY 1, 2018	$ 18	$ 134,505	$ (51,166)	$ 54	$ 83,411
Stock-based compensation expense	0	3,261	0	0	3,261
Issuance of shares for stock purchase and option plans	0	686	0	0	686
Cancellation of shares for payment of withholding tax	0	(578)	0	0	(578)
Dividends paid	0	(4,015)	0	0	(4,015)
Net loss	0	0	(12,889)	0	(12,889)
Change in cumulative translation adjustment, net	0	0	0	(270)	(270)
BALANCE at DECEMBER 31, 2018	$ 18	$ 133,859	$ (64,055)	$ (216)	$ 69,606
Stock-based compensation expense	0	4,133	0	0	4,133
Issuance of shares for stock purchase and option plans	1	1,182	0	0	1,183
Cancellation of shares for payment of withholding tax	0	(1,152)	0	0	(1,152)
Dividends paid	0	(4,068)	0	0	(4,068)
Net income	0	0	3,750	0	3,750
Change in cumulative translation adjustment, net	0	0	0	(102)	(102)
BALANCE at DECEMBER 31, 2019	$ 19	$ 133,954	$ (60,305)	$ (318)	$ 73,350

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

PCTEL, INC.
CONSOLIDATED STATEMENT OF CASH FLOWS
(in thousands)

	Years Ended December 31, 2019	2018
Operating Activities:		
Net income (loss) from continuing operations	$ 3,750	$ (12,889)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation	2,870	2,806
Intangible asset amortization	885	1,084
Stock-based compensation	4,133	3,261
Loss on disposal/sale of property and equipment	97	19
Restructuring costs	(33)	(39)
Bad debt provision	(2)	265
Deferred tax provision	0	7,817
Changes in operating assets and liabilities, net of acquisitions:		
Accounts receivable	(1,532)	2,362
Inventories	873	(336)
Prepaid expenses and other assets	385	198
Accounts payable	(2,841)	1,095
Income taxes payable	(22)	(3)
Other accrued liabilities	2,263	(1,657)
Deferred revenue	92	(40)
Net cash provided by operating activities	10,918	3,943
Investing Activities:		
Capital expenditures	(2,263)	(2,754)
Proceeds from disposal of property and equipment	0	15
Purchase of investments	(48,245)	(44,591)
Redemptions/maturities of short-term investments	46,559	46,220
Net cash used in investing activities	(3,949)	(1,110)
Financing Activities:		
Proceeds from issuance of common stock	1,183	686
Payment of withholding tax on stock-based compensation	(1,152)	(578)
Principle payments on finance leases	(99)	(125)
Cash dividends	(4,068)	(4,015)
Net cash used in financing activities	(4,136)	(4,032)
Net increase (decrease) in cash and cash equivalents	2,833	(1,199)
Effect of exchange rate changes on cash	(68)	(31)
Cash and cash equivalents, beginning of year	4,329	5,559
Cash and Cash Equivalents, End of Year	$ 7,094	$ 4,329
Other information:		
Cash paid for income taxes	$ 34	$ 41
Cash paid for interest	$ 9	$ 11
Non-cash investing and financing information:		
Decreases to additional paid-in capital related to restricted stock	$ (1,037)	$ (189)
Issuance of restricted common stock, net of cancellations	$ 226	$ 2,276
Recognition of ROU assets under operating leases	$ 2,116	$ 0
Recognition of ROU assets under finance leases	$ 118	$ 47

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

1. Organization and Summary of Significant Accounting Policies

Nature of Operations

PCTEL, Inc. ("PCTEL", the "Company", "we", "ours", and "us") is a leading global supplier of wireless network antenna and testing solutions. PCTEL designs and manufactures precision antennas and provides test & measurement products that improve the performance of wireless networks globally. PCTEL products address three market segments: Enterprise Wireless, Intelligent Transportation, and Industrial Internet of Things ("IoT"). PCTEL antennas are deployed in small cells, enterprise Wi-Fi access points, fleet management and transit systems, and in network equipment and devices for the Industrial Internet of Things. PCTEL test & measurement tools improve the performance of wireless networks globally. Mobile operators, neutral hosts, and equipment manufacturers rely on PCTEL products to analyze, design, and optimize next generation wireless networks.

Antenna Products

PCTEL designs and manufactures precision antennas and offers in-house wireless product development for our customers, including design, testing, radio integration, and manufacturing capabilities. PCTEL antennas are deployed in small cells, enterprise Wi-Fi access points, fleet management and transit systems, and in equipment and devices for the IIoT. Revenue growth in these markets is driven by the increased use and complexity of wireless communications. Consistent with the Company's mission to solve complex network engineering problems and in order to compete effectively in the antenna market, PCTEL maintains expertise in the following areas: radio frequency engineering, wireless network engineering, mechanical engineering, mobile antenna design, manufacturing, and product quality and testing. The Company seeks out product applications that command a premium for product design, performance, and customer service, and avoids commodity markets. Our antennas are primarily sold to original equipment manufacturer ("OEM") providers where they are designed into the customers' solution. Competition in the antenna markets is fragmented. Competitors include Airgain, Amphenol, Laird, Panorama, and Taoglas.

Test & Measurement Products

PCTEL provides RF test & measurement tools that improve the performance of wireless networks globally, with a focus on LTE, public safety, and 5G technologies. Network operators, neutral hosts, and equipment manufacturers rely on our scanning receivers and testing solutions to analyze, design, and optimize next generation wireless networks. Revenue growth in this market is driven by the implementation and roll out of new wireless technology standards (i.e. 3G to 4G, 4G to 5G). Consistent with our mission to solve complex network engineering problems and in order to compete effectively in the RF test & measurement market, PCTEL maintains expertise in the following areas: radio frequency engineering, digital signal process ("DSP") engineering, wireless network engineering, mechanical engineering, manufacturing, and product quality and testing. The Company's test equipment is sold directly to wireless carriers or to OEMs who integrate its products into their solutions which are then sold to wireless carriers. Competitors for the Company's test tool products include OEMs such as Anritsu, Berkley Varitronics, Rohde and Schwarz, and Viavi.

Basis of Consolidation

These consolidated financial statements include the accounts of the Company and its subsidiaries. All intercompany accounts and transactions have been eliminated.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles in the U.S. requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the periods reported. Actual results could differ from those estimates.

Foreign Operations

The Company is exposed to foreign currency fluctuations due to its foreign operations and because products are sold internationally. The functional currency for the Company's foreign operations is predominantly the applicable local currency. Accounts of foreign operations are translated into U.S. dollars using the year-end exchange rate for assets and liabilities and average monthly rates for revenue and expense accounts. Adjustments resulting from translation are included in accumulated other comprehensive income (loss), a separate component of stockholders' equity. Gains and losses resulting from other transactions originally in foreign currencies and then translated into U.S.

dollars are included in the consolidated statements of operations. For the year ended December 31, 2019, foreign currency transactions resulted in foreign exchange gains of $0.1 million and for the year ended December 31, 2018, foreign currency transactions resulted in foreign exchange losses of $0.1 million. Foreign exchange gains and losses are recorded in other income in the consolidated statement of operations.

Fair Value of Financial Instruments

The Company follows accounting pronouncements for Fair Value Measurements and Disclosures, which establishes a fair value hierarchy that requires the Company to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, a three-tier fair value hierarchy has been established, which prioritizes the inputs used in measuring fair value as follows:

Level 1: inputs are unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2: inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices in active markets for similar assets and liabilities, quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of assets or liabilities.

Level 3: unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Cash equivalents are measured at fair value and investments are recognized at amortized cost in the Company's financial statements. Accounts receivable and other investments are financial assets with carrying values that approximate fair value due to the short-term nature of these assets. Accounts payable is a financial liability with a carrying value that approximates fair value due to the short-term nature of these liabilities.

Cash and Cash Equivalents and Investments

The Company's cash and cash equivalents and investments consist of the following:

	December 31, 2019	December 31, 2018
Cash	$ 5,604	$ 1,485
Cash equivalents	1,490	2,844
Short-term investments	32,556	30,870
	$ 39,650	$ 35,199

Cash and Cash Equivalents

At December 31, 2019 and 2018, cash and cash equivalents included bank balances and investments with original maturities less than 90 days. At December 31, 2019 and 2018, the Company's cash equivalents were invested in highly liquid AAA rated money market funds that are required to comply with Rule 2a-7 under the Investment Company Act of 1940. Such funds utilize the amortized cost method of accounting, seek to maintain a constant $1.00 per share price, and are redeemable upon demand. The Company restricts its investments in AAA money market funds to those invested 100% in either short-term U.S. Government Agency securities or bank repurchase agreements collateralized by these same securities. The fair values of these money market funds are established through quoted prices in active markets for identical assets (Level 1 inputs). The cash in the Company's U.S. banks is insured by the Federal Deposit Insurance Corporation up to the insurable limit of $250.

At December 31, 2019, the Company had $2.1 million of cash in bank accounts in China. The Company's cash in these foreign bank accounts is not insured. As of December 31, 2019, the Company has no intentions of repatriating the cash in its foreign bank accounts in China. If the Company decides to repatriate the cash in the foreign bank accounts, it may experience difficulty in doing so in a timely manner. The Company may also be exposed to foreign currency fluctuations and taxes if it repatriates these funds. At December 31, 2018, the Company had $0.6 million of cash in bank accounts in China and $0.2 million of cash in bank accounts in Israel. The Company completed the closure of its Israel subsidiary during the fourth quarter 2018 and repatriated the remaining cash of $0.2 million during the second quarter of 2019.

Investments

At December 31, 2019, the Company's short-term investments consisted of A or higher rated corporate bonds and certificates of deposit. At December 31, 2018, the Company's short-term investments consisted of U.S. government agency bonds, A or higher rated corporate bonds and certificates of deposit. All of the investments at December 31, 2019 and 2018 were classified as held-to-maturity.

Cash equivalents and Level 1 and Level 2 investments measured at fair value were as follows:

	December 31, 2019			December 31, 2018		
	Level 1	Level 2	Total	Level 1	Level 2	Total
Cash equivalents:						
Corporate bonds	$ 0	$ 708	$ 708	$ 0	$ 1,156	$ 1,156
Money market funds	782	0	782	1,688	0	1,688
Total Cash Equivalents	$ 782	$ 708	$ 1,490	$ 1,688	$ 1,156	$ 2,844
Investments:						
Corporate bonds	0	28,710	28,710	0	21,583	21,583
US government agency bonds	0	0	0	0	5,671	5,671
Certificates of deposit	3,846	0	3,846	3,616	0	3,616
Total Investments	$ 3,846	$ 28,710	$ 32,556	$ 3,616	$ 27,254	$ 30,870
Cash equivalents and Investments - book value	$ 4,628	$ 29,418	$ 34,046	$ 5,304	$ 28,410	$ 33,714
Unrealized gains (losses)	1	(11)	(10)	0	(21)	(21)
Cash equivalents and Investments - fair value	$ 4,629	$ 29,407	$ 34,036	$ 5,304	$ 28,389	$ 33,693

The Company categorizes its financial instruments within a fair value hierarchy according to accounting guidance for fair value. The fair value hierarchy is described under the Fair Value of Financial Instruments in Note 1. For the Level 2 investments, the Company uses quoted prices of similar assets in active markets. There were no Level 3 investments at December 31, 2019 or 2018. The fair values in the table above reflect net unrealized losses of $10 and $21 at December 31, 2019 and December 31, 2018, respectively.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded at invoiced amount with standard net terms for most customers that range between 30 and 90 days. The Company extends credit to its customers based on an evaluation of a company's financial condition and collateral is generally not required. The Company maintains an allowance for doubtful accounts for estimated uncollectible accounts receivable. The allowance is based on the Company's assessment of known delinquent accounts, historical experience, and other currently available evidence of the collectability and the aging of accounts receivable. The Company's allowance for doubtful accounts was $0.1 million at December 31, 2019 and 2018, respectively. The provision for doubtful accounts is included in sales and marketing expense in the consolidated statements of operations.

Inventories

Inventories are stated at the lower of cost or net realizable value and include material, labor and overhead costs using the first-in, first-out method of costing. Inventories as of December 31, 2019 and 2018 were composed of raw materials, work-in-process, and finished goods. The Company had consigned inventory of $0.3 million and $0.9 million at December 31, 2019 and 2018, respectively. The Company records allowances to reduce the value of inventory to the lower of cost or market, including allowances for excess and obsolete inventory. Reserves for excess inventory are calculated based on the Company's estimate of inventory in excess of normal and planned usage. Obsolete reserves are based on the Company's identification of inventory where carrying value is above net realizable value. The allowance for inventory losses was $3.4 million and $3.3 million as of December 31, 2019 and 2018, respectively.

Inventories consisted of the following:

	December 31, 2019	December 31, 2018
Raw materials	$ 6,502	$ 7,023
Work in process	913	1,388
Finished goods	4,520	4,437
Inventories, net	$ 11,935	$ 12,848

Prepaid and Other Current Assets

Prepaid assets are stated at cost and are amortized over the useful lives (up to one year) of the assets.

Property and Equipment

Property and equipment are stated at cost and are depreciated using the straight-line method over the estimated useful lives of the assets. The Company depreciates computer equipment and software license over three to five years, office equipment, manufacturing and test equipment and motor vehicles over five years, furniture and fixtures over seven years, and buildings over 30 years. Leasehold improvements are amortized over the shorter of the corresponding lease term or useful life. Depreciation expense and gains and losses on the disposal of property and equipment are included in cost of sales and operating expenses in the consolidated statements of operations. Maintenance and repairs are expensed as incurred.

Property and equipment consisted of the following:

	December 31, 2019	December 31, 2018
Building	$ 6,389	$ 6,351
Computers and office equipment	9,847	10,963
Manufacturing and test equipment	14,192	13,573
Furniture and fixtures	1,314	1,318
Leasehold improvements	2,850	1,529
Motor vehicles	20	20
Total property and equipment	34,612	33,754
Less: Accumulated depreciation and amortization	(24,397)	(23,386)
Land	1,770	1,770
Property and equipment, net	$ 11,985	$ 12,138

Depreciation and amortization expense were approximately $2.9 million and $2.8 million for the years ended December 31, 2019 and 2018, respectively. Amortization for capital leases is included in depreciation and amortization expense. See Note 7 for information related to finance leases.

Liabilities

Accrued liabilities consisted of the following:

	December 31, 2019	December 31, 2018
Short-term incentive plan	$ 2,553	$ 0
Payroll and other employee benefits	1,605	1,409
Inventory receipts	1,431	1,396
Paid time off	855	936
Leasehold improvements	702	0
Warranties	444	339
Operating leases	282	0
Professional fees and contractors	246	346
Deferred revenues	241	149
Employee stock purchase plan	228	343
Real estate taxes	152	148
Customer refunds for estimated returns	147	154
Income and sales taxes	133	186
Finance leases	77	91
Restructuring	45	33
Other	241	271
Total	$ 9,382	$ 5,801

Long-term liabilities consisted of the following:

	December 31, 2019	December 31, 2018
Operating leases	$ 3,021	$ 0
Finance leases	164	132
Deferred revenue	119	87
Other	11	162
Total	$ 3,315	$ 381

Revenue Recognition

The Company sells antenna products and test & measurement products. All of the Company's revenue relates to contracts with customers. The Company's accounting contracts are from purchase orders or purchase orders combined with purchase agreements. The majority of the Company's revenue is recognized on a "point-in-time" basis and a nominal amount of revenue is recognized "over time". For the sale of antenna products and test & measurement products, the Company satisfies its performance obligations generally at the time of shipment, or upon delivery based on the contractual terms with its customers. For products shipped on consignment, the Company recognizes revenue upon customer delivery from the consignment location. For its test & measurement software tools, the Company has a performance obligation to provide software maintenance and support for one year. The Company recognizes revenues for the maintenance and support over this period. The Company recognizes revenue for sales of its products when control transfers, which is predominantly upon shipment from its factory. For products shipped on consignment, the Company recognizes revenue upon delivery from the consignment location. The Company allows its major antenna product distributors to return product under specified terms and conditions and accrues for product returns. See Note 14 for additional information related to revenue policies.

Research and Development Costs

The Company expenses research and development costs as incurred. To date, the Company has expensed all software development costs related to research and development because the costs incurred subsequent to the products reaching technological feasibility were not significant.

Advertising Costs

Advertising costs are expensed in the period in which they are incurred. Advertising expense was $0.2 million and $0.1 million during the years ended December 31, 2019, and 2018, respectively.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, and deferred tax assets are recognized for net operating losses and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are provided against deferred tax assets, which are not likely to be realized. On a regular basis, management evaluates the recoverability of deferred tax assets and the need for a valuation allowance.
The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

On December 22, 2017, the United States federal government enacted the Tax Cuts and Jobs Act ("Tax Act"), marking a change from a worldwide tax system to a modified territorial tax system in the United States. As part of this change, the Tax Act, among other changes, provided for a transition tax on the accumulated unremitted foreign earnings and profits of the Company's foreign subsidiaries ("Transition Tax"), a reduction of the U.S. federal corporate income tax rate from 34% to 21%, and an indefinite carryforward of net operating losses ("NOLs") incurred in 2018 and future periods subject to an 80% annual limitation against future income.

Deferred tax assets arise when the Company recognizes charges or expenses in the financial statements that will not be allowed as income tax deductions until future periods. The deferred tax assets also include unused tax net operating losses and tax credits that the Company is allowed to carryforward to future years. Accounting rules permit the Company to carry the deferred tax assets on the balance sheet at full value as long as it is more likely than not the deductions, losses, or credits will be used in the future. A valuation allowance must be recorded against a deferred tax asset if this test cannot be met. The Company had a full valuation allowance of $13.5 million at December 31, 2019 and of $14.5 million at December 31, 2018. See Note 5 for more information on the deferred tax valuation allowance.

Sales and Value Added Taxes

Taxes collected from customers and remitted to governmental authorities are presented on a net basis in cost of sales in the accompanying consolidated statements of operations.

Shipping and Handling Costs

Shipping and handling costs are included on a gross basis in cost of sales in the accompanying consolidated statements of operations.

Goodwill

The Company performs an annual impairment test of goodwill as of the end of the first month of the fourth fiscal quarter (October 31st), or at an interim date if an event occurs or if circumstances change that would indicate that an impairment loss may have been incurred. In performing the annual impairment tests, the Company may consider qualitative factors that would indicate possible impairment. A quantitative fair value assessment is also performed at the reporting unit level. If the fair value exceeds the carrying value, then goodwill is not impaired, and no further testing is performed. If the carrying value exceeds the fair value, the implied fair value of goodwill is then compared against the carrying value of goodwill to determine the amount of impairment.

The process of evaluating the potential impairment of goodwill is subjective because it requires the use of estimates and assumptions in determining a reporting unit's fair value. The Company calculates the fair value of each reporting unit by using the income approach based on the present value of future discounted cash flows. The discounted cash flow method requires the Company to use estimates and judgments about the future cash flows of the reporting units. Although the Company bases cash flow forecasts on assumptions that are consistent with plans and estimates the Company uses to manage the underlying reporting units, there is significant judgment in determining the cash flows attributable to these reporting units, including markets and market share, sales volumes and mix, research and development expenses, tax rates, capital spending, discount rate and working capital changes. Cash flow forecasts are based on reporting unit operating plans for the early years and business projections in later years. The Company believes the accounting estimate related to the valuation of goodwill is a critical accounting estimate because it requires the Company to make assumptions that are highly uncertain about the future cash flows of the reporting units. Changes in these estimates can have a material impact on the Company's financial statements.

The Company performed its annual goodwill test at October 31, 2019 and at October 31, 2018 for the goodwill of $3.3 million. The Company performed both a qualitative analysis of goodwill and a quantitative analysis. There were no triggering events from the qualitative analysis, and the fair value of the reporting unit was higher than its carrying value in the quantitative analysis. Based on the Company's analysis, there was no impairment of goodwill as of the testing dates because the fair value of the reporting unit exceeded its carrying value by a significant margin.

Long-lived and Definite-Lived Intangible assets

The Company reviews definite-lived intangible assets, investments and other long-lived assets for impairment when events or changes in circumstances indicate that their carrying values may not be fully recoverable. This analysis differs from the Company's goodwill analysis in that definite-lived intangible asset impairment is only deemed to have occurred if the sum of the forecasted undiscounted future cash flows related to the assets being evaluated is less than the carrying value of the assets. The estimate of long-term undiscounted cash flows includes long-term forecasts of revenue growth, gross margins, and operating expenses. All of these items require significant judgment and assumptions. There have been no impairments related to long-lived assets used for operations during the years ended December 31, 2019, and 2018.

Recent Accounting Pronouncements

In July 2019, the FASB issued ASU 2019-07, Codification Updates to SEC Sections. This ASU amends various SEC paragraphs pursuant to the issuance of SEC Final Rule Releases No. 33-10532, Disclosure Update and Simplification, and Nos. 33-10231 and 33-10442, Investment Company Reporting Modernization. One of the changes in the ASU requires a presentation of changes in stockholders' equity in the form of a reconciliation, either as a separate financial statement or in the notes to the financial statements, for the current and comparative year-to-date interim periods. The Company presented changes in stockholders' equity as separate financial statements for the current and comparative year-to-date interim periods beginning on January 1, 2019. The additional elements of the ASU did not have a material impact on the Company's Consolidated 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. This guidance was effective for the Company on January 1, 2020. The adoption of ASU 2018-15 did not have a material impact on the consolidated financial statements.

In October 2016, the FASB issued ASU 2016-16, Income Taxes (“Topic 740”): Intra-Entity Transfer of Assets Other than Inventory. Topic 740 requires an entity to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The Company adopted Topic 740 on January 1, 2018 using the modified retrospective approach, and as a result recorded a deferred tax asset with a corresponding adjustment to retained earnings of $0.1 million associated with an intra-entity transfer of goodwill in 2009. The goodwill was transferred to the U.S. entity from a Canadian entity that was dissolved in 2009.

In June 2016, the FASB issued Accounting Standards Update No. 2016-13 ("ASU 2016-13") regarding ASC Topic 326, "Financial Instruments - Credit Losses," which modifies the measurement of expected credit losses of certain financial instruments. The Company will be required to use a forward-looking expected credit loss model for accounts receivables, loans, and other financial instruments. The amendments were effective for the Company on January 1, 2020. Adoption of the standard will be applied using a modified retrospective approach. Adoption of ASU 2016-13 did not have a material impact on its consolidated financial statements.

In February 2016, the FASB issued Accounting Standards Update (“ASU”) 2016-02, Leases (“Topic 842”), which amends existing guidance to require lessees to recognize assets and liabilities on the balance sheet for the rights and obligations created by long-term leases and to disclose additional quantitative and qualitative information about leasing arrangements. This ASU also provides clarification surrounding the presentation of the effects of leases in the statement of operations and statement of cash flows. The Company adopted this guidance on January 1, 2019. The Company commenced its assessment of Topic 842 in the second half of 2018 and developed a project plan to guide the implementation. The Company completed this project planning which it analyzed the ASU's impact on its leases, surveyed the Company's key employees, assessed the portfolio of leases, and established a future lease process to keep the lease accounting portfolio up to date. The Company also evaluated the key policy elections and considerations under the standard and completed the internal policy documentation to address the new standard requirements. The Company adopted this new guidance using the updated modified transition method allowed per ASU 2018-11 of Topic 842. Upon adoption on January 1, 2019, total assets and liabilities increased due to the recording of right-of-use assets of $1.5 million and lease liabilities of $1.6 million. See Note 7 for additional information and disclosures required by this new standard.

In May 2014, the FASB issued ASU 2014-09, “Revenue from Contracts with Customers” (“Topic 606”) which introduced a new revenue recognition model in which an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Topic 606 defines a five-step process to achieve this core principle and, in doing so, more judgment and estimates may be required in connection with the revenue recognition process than were previously required under prior U.S. GAAP. Topic 606 also requires disclosures sufficient to enable users to understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers, including qualitative and quantitative disclosures about contracts with customers, significant judgments and changes in judgments, and assets recognized from the costs to obtain or fulfill a contract. The FASB has also issued the following standards which clarify Topic 606 and have the same effective date as the original standard: ASU 2016-20, Technical Corrections and Improvements to Topic 606, ASU No. 2016-12, Narrow-Scope Improvements and Practical Expedients, ASU 2016-10, Identifying Performance Obligations and Licensing and ASU 2016-08, Principal versus Agent Considerations. The Company adopted Topic 606 on January 1, 2018 using the modified retrospective approach. The impact of the adoption of Topic 606 was not material to the consolidated financial statements. The majority of the Company’s revenue is recognized on a “point-in-time” basis and a nominal amount of the Company’s revenue is recognized “over time” under the new standard, which is consistent with the Company’s revenue recognition policy under the previous guidance.

2. Earnings (Loss) per Share

The Company computes earnings per share data under two different disclosures, basic and diluted, for all periods in which consolidated statements of operations are presented. Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted average number of shares of common stock outstanding, less shares subject to repurchase. Diluted earnings (loss) per share are computed by dividing net income by the weighted average number of common stock and common stock equivalents outstanding. Common stock equivalents consist of stock options using the treasury stock method. Common stock options are excluded from the computation of diluted earnings per share if their effect is anti-dilutive.

The following table provides a reconciliation of the numerators and denominators used in calculating basic and diluted earnings per share:

	Years Ended December 31, 2019	2018
Basic Income (Loss) Per Share computation:		
Numerator:		
Net income (loss)	$ 3,750	$ (12,889)
Denominator:		
Common shares outstanding	17,852,968	17,185,657
Net Income (Loss) per common share - basic		
Net income (loss)	$ 0.21	$ (0.75)
Diluted Income (Loss) Per Share computation:		
Denominator:		
Common shares outstanding	17,852,968	17,185,657
Performance related awards	191,247	*
Restricted shares subject to vesting	113,188	*
Common stock option grants	1,256	*
Total shares	18,158,659	17,185,657
Income (Loss) per common share - diluted		
Net income (loss)	$ 0.21	$ (0.75)

* As denoted by "*" in the table above, weighted average common stock option grants and restricted shares of 360,591 was excluded from the calculations of diluted net loss per share for the year ended December 31, 2018, since the effect was anti-dilutive.

3. Goodwill and Other Intangible Assets

Goodwill

There were no changes to the goodwill of $3.3 million during 2019 or 2018. See the goodwill section of Note 1 for more information on the evaluation of goodwill.

Intangible Assets

The summary of other intangible assets, net is as follows:

	December 31, 2019			December 31, 2018		
	Cost	Accumulated Amortization	Net Book Value	Cost	Accumulated Amortization	Net Book Value
Customer contracts and relationships	$ 16,880	$ 16,880	$ 0	$ 16,880	$ 16,880	$ 0
Patents and technology	10,114	10,003	111	10,114	9,336	778
Trademarks and trade names	4,834	4,801	33	4,834	4,607	227
Other	2,506	2,506	0	2,506	2,482	24
	$ 34,334	$ 34,190	$ 144	$ 34,334	$ 33,305	$ 1,029

The Company amortizes intangible assets with finite lives on a straight-line basis over the estimated useful lives, which range from one to six years. In the Consolidated Statement of Operations, amortization expense was approximately $0.9 million for the year ended December 31, 2019, and $1.1 million for the year ended December 31, 2018. Amortization for technology assets is included in cost of revenues and amortization for all other intangible assets is included in operating expenses. For the year ended December 31, 2019, $0.2 million of the intangible asset amortization was included in operating expenses and $0.7 million was included in cost of revenues. For the year ended December 31, 2018, $0.4 million of the intangible asset amortization was included in operating expenses and $0.7 million was included in cost of goods revenues.

The assigned lives and weighted average amortization periods by intangible asset category are summarized below:

Intangible Assets	Assigned Life	Weighted Average Amortization Period
Customer contracts and relationships	5 years	5.0
Patents and technology	5 to 6 years	5.1
Trademarks and trade names	5 to 6 years	5.6
Other	1 to 6 years	3.0

The Company's amortization expense for intangible assets is scheduled through the first quarter 2020 as follows:

Fiscal Year	Amount
2020	$ 144

4. Restructuring

The following table summarizes the Company's restructuring accrual activity for the years ended December 31, 2019, and 2018:

	Severance	Lease Termination	Total
Balance at January 1, 2018	$ 0	$ 116	$ 116
Payments made	0	(128)	(128)
Payments received	0	89	89
Balance at December 31, 2018	$ 0	$ 77	$ 77
Restructuring expense	507	0	507
Payments made	(495)	(143)	(638)
Payments received	0	99	99
Balance at December 31, 2019	$ 12	$ 33	$ 45

The restructuring liability is recorded on the balance sheet at December 31, 2019 and 2018 as follows:

	December 31, 2019	December 31, 2018
Accrued liabilities	$ 45	$ 33
Long-term liabilities	0	44
	$ 45	$ 77

China Restructuring

On August 7, 2019 the Company's Board of Directors approved a transition plan for the Company's China manufacturing operations. In order to optimize the cost structure of the antenna product line, reduce fixed costs in China, and increase the Company's competitiveness, it is transitioning high-volume manufacturing from its Tianjin, China facility to contract manufacturers in China and elsewhere. The Company expects the transition to be substantially completed by the end of the 2020 fiscal year (the "Transition Period"). For the year ended December 31, 2019, the Company incurred restructuring expenses of $0.5 million for employee severance and related benefits related to the separation of 84 employees. During 2020, the Company expects to reduce headcount in Tianjin by an additional 40 to 50 employees and estimates additional restructuring charges of approximately $0.4 million consisting of severance and other non-cash costs. Severance costs are paid from the Company's cash in its China bank accounts

Lease Termination

In 2016, the Company exited from its Colorado office in order to consolidate facility space and in the second quarter 2017 the Company signed a sublease for the office space. The termination date for the lease and the sublease is October 2020. The following table summarizes the minimum lease payments and sublease payments under the lease agreements for the Colorado office:

	Lease Payments
Lease Payments	92
Sublease Payments	(59)
	33

5. Income Taxes

The domestic and foreign components of the income (loss) before expense for income taxes were as follows:

	Years Ended December 31,			
	2019		2018	
Domestic	$	4,250	$	(5,033)
Foreign		(460)		(29)
	$	3,790	$	(5,062)

The expense for income taxes consisted of the following:

	Years Ended December 31,			
	2019		2018	
Current:				
Federal	$	0	$	0
State		40		32
Foreign		0		(22)
		40		10
Deferred:				
Federal		0		6,337
State		0		1,333
Foreign		0		147
		0		7,817
Total	$	40	$	7,827

A reconciliation of the expense for income taxes at the federal statutory rate compared to the expense at the effective tax rate is as follows:

	Years Ended December 31	
	2019	**2018**
Statutory federal income tax rate	21%	21%
State income tax, net of federal benefit	7%	4%
Tax effect of permanent differences	3%	-1%
Change in valuation allowance	-25%	-182%
Effective state rate change to deferred tax assets	-1%	1%
Stock-based compensation shortfalls	3%	-2%
Research and development credits	-8%	4%
Other	1%	0%
	1%	-155%

The Company recorded net income tax expense of $40 for the year ended December 31, 2019. The 2019 effective rate differed from the Federal rate of 21% primarily because the Company has a full valuation allowance on its deferred tax assets. The Company's valuation allowance is due to the uncertainty regarding the utilization of the deferred tax assets.

The Company recorded net income tax expense of $7.8 million for the year ended December 31, 2018. The 2018 effective tax rate differed from the Federal rate of 21% primarily because the Company recorded an adjustment to the valuation allowance of $9.2 million, consisting of $8.9 million for U.S. deferred tax assets and $0.3 million for China deferred tax assets. The adjustment to the valuation allowance reflected an increase to a full valuation allowance from a partial valuation allowance. The Company increased the valuation allowance for deferred tax assets due to uncertainty regarding the utilization of the deferred tax assets.

On December 22, 2017, the United States federal government enacted the Tax Act, marking a change from a worldwide tax system to a modified territorial tax system in the United States. As part of this change, the Tax Act, among other changes, provided for a Transition Tax on the accumulated unremitted foreign earnings and profits of foreign subsidiaries, a reduction of the U.S. federal corporate income tax rate from 34% to 21%, and an indefinite carryforward of net operating losses ("NOL's") incurred in 2018 and future periods subject to an 80% annual limitation against future income. The Company increased the Transition Tax $0.1 million in the fourth quarter 2018 upon completion of its U.S. income tax return.

The Tax Act also included global intangible low-taxed income ("GILTI") provisions. Under the provisions, a U.S. shareholder of controlled foreign corporations ("CFCs") is required to include in gross income the amount of its GILTI. Generally, the GILTI inclusion is the U.S. shareholder's allocable share of certain income earned through its CFCs ("net CFC tested income") in excess of a deemed 10% return on the shareholder's allocable share of certain of the CFC's depreciable, tangible assets less certain interest expense items ("net deemed tangible income return"). The Company elected to treat taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the period cost method). The amount included for GILTI did not have a significant impact on the Company's tax provision for the years ended December 31, 2019 or December 31, 2018.

The Company recognizes all interest and penalties as income tax expense. There was no income tax expense related to interest and penalties for the years ended December 31, 2019 or 2018

Deferred Taxes

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

The net deferred tax accounts consist of the following:

	December 31, 2019	December 31, 2018
Deferred Tax Assets:		
Net operating loss carryforwards	$ 4,759	$ 5,725
Amortization	3,500	3,920
Federal, foreign, and state credits	2,086	1,812
Inventory reserves	1,159	982
Stock compensation	494	982
Deferred gain	870	875
Accrued vacation	220	240
Other	563	235
Gross deferred tax assets	13,651	14,771
Valuation allowance	(13,490)	(14,457)
Net deferred tax asset	161	314
Deferred Tax Liabilities:		
Depreciation	(161)	(314)
Net Deferred Tax Assets	$ 0	$ 0

At December 31, 2019, the Company had gross deferred tax assets of $13.7 million, deferred tax liabilities of $0.2 million, and a valuation allowance of $13.5 million. The deferred tax assets consisted of domestic deferred tax assets of $13.1 million and foreign deferred tax assets of $0.5 million. At December 31, 2019, $3.5 million of the deferred tax asset is intangible assets acquired under purchase accounting which are amortized for tax purposes over 15 years, but for shorter periods under generally accepted accounting principles.

At December 31, 2018, the Company had gross deferred tax assets of $14.8 million, deferred tax liabilities of $0.3 million, and a valuation allowance of $14.5 million. The net deferred tax assets at December 31, 2018 consisted of domestic net deferred tax assets of $14.2 million and foreign net deferred tax assets of $0.3 million.

On a regular basis, the Company evaluates the recoverability of deferred tax assets and the need for a valuation allowance. Such evaluations involve the application of significant judgment. The Company considers multiple factors in its evaluation of the need for a valuation allowance. The Company's net deferred tax assets consist of assets related to net operating losses and credits as well as assets related to timing differences. The Company's net operating losses and credits have a finite life primarily based on the 20-year carryforward rule for federal net operating losses (NOLs) generated as of December 31, 2017. The timing differences have a ratable reversal pattern over 12 years. Under the new rules enacted with the Tax Act, tax losses incurred in 2018 and future periods will not expire, thereby extending the period by which the Company's deferred tax assets can be realized. The Company has recorded pre-tax U.S. profit for the cumulative three-year period ending December 31, 2019 of $0.1 million.

In accordance with ASC 740 "Accounting for Income Taxes" ("ASC 740"), the Company evaluates deferred income tax assets quarterly to determine if valuation allowances are required or should be adjusted. ASC 740 requires that companies assess whether valuation allowances should be established against their deferred tax assets based on consideration of all available evidence, both positive and negative, using a "more likely than not" standard. At December 31, 2019 and December 31, 2018, the Company had a full valuation allowance on its deferred tax assets. The Company generated book and tax income during 2019. However, the Company incurred significant losses in 2018 and is in a cumulative break-even position for the past three years. The Company's performance versus the 2018 projections are considered significant negative evidence that is difficult to overcome on a "more likely than not" standard through objectively verifiable data. While the Company believes its financial outlook remains positive, under the accounting standards, objective verifiable evidence will have greater weight than subjective evidence such as the Company's projections for future growth. Based on an evaluation in accordance with the accounting standards, as of December 31, 2019, the Company has a valuation allowance of $13.1 million which was recorded against the net U.S. deferred tax assets and a valuation allowance of $0.5 million has been recorded against the net China deferred tax assets in order to measure the deferred tax assets that are more likely than not to be realized based on the weight of all the available evidence.

Until an appropriate level of profitability is attained, the Company expects to maintain a full valuation allowance on its U.S. net deferred tax assets, and China net deferred tax assets. Any U.S. or China tax benefits or tax expense recorded on its consolidated statement of operations will be offset with a corresponding valuation allowance until such time that the Company changes its determination related to the realization of deferred tax assets. In the event that the Company changes its determination as to the amount of deferred tax assets that can be realized, the Company will adjust its valuation allowance with a corresponding impact to the provision for income taxes in the period in which such a determination is made.

The analysis that the Company prepared to determine the valuation allowance required significant judgment and assumptions regarding future market conditions, as well as forecasts for profits, taxable income, and taxable income by jurisdiction. Due to the sensitivity of the analysis, changes to the assumptions in subsequent periods could have a material effect on the valuation allowance.

Accounting for Uncertainty for Income Taxes

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	December 31,	
	2019	2018
Beginning of period	$ 730	$ 700
Addition related to tax positions in current year	45	30
Reversals for uncertain tax positions	(16)	0
End of period	$ 759	$ 730

Because the Company has a full valuation allowance against its deferred tax assets, the reversal of these unrecognized tax benefits would have no impact on its effective tax rate. The Company does not anticipate that its unrecognized tax benefits will significantly increase or decrease within the next twelve months.

Audits

The Company and its subsidiaries file income tax returns in the U.S. and various foreign jurisdictions. The Company's U.S. federal tax returns remain subject to examination for 2017 and subsequent periods. The Company's state tax returns remain subject to examination for 2015 and subsequent periods. The Company's foreign tax returns in China remain subject to examination for 2011 and subsequent periods.

Summary of Carryforwards

At December 31, 2019, the Company has a federal net operating loss carryforward of $9.0 million that expires between 2031 and 2037 and a Federal net operating loss carryforward of $8.1 million with no expiration. The Company has state net operating loss carryforwards of $17.8 million that expire between 2021 and 2038. Additionally, the Company has $1.3 million of federal research credits that expire between 2030 and 2039 and $1.5 million of state research credits with no expiration. The Company has a China net operating loss carryforward of $0.1 million that expires in 2025 and of China research credits of $0.2 million that expire between 2024 and 2025.

Investment in Foreign Operations

For the Company's subsidiary in China, it has recorded income tax related to the deemed dividend of earnings. The Company considers such earnings permanently reinvested. Upon repatriation of these earnings, the Company would be subject to local withholding taxes.

6. Commitments and Contingencies

Warranty Reserve and Sales Returns

The Company allows its major distributors and certain other customers to return unused product under specified terms and conditions. The Company accrues for product returns based on historical sales and return trends. The refund liability was $0.1 million and $0.2 million at December 31, 2019 and 2018, respectively, and is included in other accrued liabilities in the accompanying consolidated balance sheets.

The Company offers repair and replacement warranties of primarily five years for antenna products and for scanning receivers. The Company's warranty reserve is based on historical sales and costs of repair and replacement trends. The warranty reserve was $0.4 million at December 31, 2019 and $0.3 million at December 31, 2018 and is included in other accrued liabilities in the accompanying consolidated balance sheets.

	Year Ended December 31,	
	2019	2018
Beginning balance	$ 339	$ 382
Provisions for warranties	435	65
Consumption of reserves	(330)	(108)
Ending balance	$ 444	$ 339

7. Leases

The Company adopted Topic 842 as of January 1, 2019, using the transition method per ASU No. 2018-11, whereby entities are allowed to apply the new leases standard at the adoption date. Accordingly, all periods prior to January 1, 2019 were presented in accordance with the previous ASC Topic 840 ("Topic 840"), Leases, and no retrospective adjustments were made to the comparative periods presented. Adoption of Topic 842 resulted in an increase to total assets of $1.5 million and to liabilities of $1.6 million from the recording of operating lease right-of-use assets ("ROU") and operating lease liabilities. Finance leases were not impacted by the adoption of Topic 842, as finance lease liabilities and the corresponding ROU assets were already recorded in the balance sheet under the previous guidance, Topic 840. The adoption did not materially impact the Company's consolidated statements of operations or cash flows. The Company has operating leases for facilities and finance leases for office equipment. Leases with an initial term of 12 months or less are not recorded in the balance sheet. The Company has elected the practical expedient to account for each separate lease component of a contract and its associated non-lease components as a single lease component, thus causing all fixed payments to be capitalized. The Company also elected the package of practical expedients permitted within the new standard, which among other things, allows the Company to carry forward historical lease classifications. The Company determines if an arrangement is a lease at inception of a contract.

ROU assets represent the Company's right to use an underlying asset during the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. ROU assets and liabilities are recognized at the lease commencement date based on the net present value of fixed lease payments over the lease term. The Company's lease term is deemed to include options to extend or terminate the lease when it is reasonably certain that it will exercise that option. ROU assets also include any advance lease payments made and exclude lease incentives. As most of the Company's operating leases do not provide an implicit rate, the Company uses its incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments on a collateralized basis. Finance lease agreements generally include an interest rate that is used to determine the present value of future lease payments. Operating fixed lease expense and finance lease depreciation expense are recognized on a straight-line basis over the lease term.

The Company's lease cost for the year ended December 31, 2019 included the following components:

	Year ended December 31, 2019
Operating lease costs	$ 963
Short-term lease costs	92
Variable lease costs	27
Amortization of finance lease assets	99
Interest on finance lease liabilities	9
Total lease cost	$ 1,190

The table below summarizes the Company's scheduled future minimum lease payments under operating and finance leases recorded on the balance sheet as of December 31, 2019:

Year	Operating Leases	Finance Leases
2020	$ 306	$ 84
2021	472	73
2022	558	48
2023	569	32
2024	581	21
Thereafter	3,174	0
Total minimum payments required	5,660	258
Less: present value of tenant allowance	1,002	0
Less: amount representing interest	1,355	17
Present value of net minimum lease payments	3,303	241
Less: current maturities of lease obligations	(282)	(77)
Long-term lease obligations	$ 3,021	$ 164

The weighted average remaining lease terms and discount rates for all the Company's operating and finance leases were as follows as of December 31, 2019:

	December 31, 2019
Weighted-average remaining lease term - finance leases	3.6 years
Weighted-average remaining lease term - operating leases	9.7 years
Weighted-average discount rate - finance leases	4%
Weighted-average discount rate - operating leases	5%

The table below presents supplemental balance sheet information related to leases during the year ended December 31, 2019:

Leases	Consolidated Balance Sheet Classification		December 31, 2019
Assets:			
Operating right-of-use assets	Other noncurrent assets	$	2,696
Finance right-of-use assets	Other noncurrent assets		234
Total lease assets		$	2,930
Liabilities:			
Current			
Operating lease liabilities	Accrued liabilities	$	282
Finance lease liabilities	Accrued liabilities		77
Noncurrent			
Operating lease liabilities	Long-term liabilities		3,021
Finance lease liabilities	Long-term liabilities		164
Total lease liabilities		$	3,544

In January 2019, the Company entered into an eleven-year lease ending February 28, 2031 for 21,030 square feet of office space in Clarksburg, Maryland for the Company's test & measurement product line. The Company moved the operations for its test & measurement product line from its Germantown, Maryland office in January 2020. For the Clarksburg lease, the Company recognized a present value right of use asset of $2.1 million in August 2019, which was the lease commencement date for accounting purposes. The present value of the right of use asset reflects 14 months of rent abatement and $1.5 million in tenant improvement incentives in the form of cash reimbursements which the Company will fully utilize.

In accordance with the disclosure requirements for the adoption of Topic 842, the Company is presenting the operating lease commitments table under Topic 840 as of December 31, 2018. The following table is unchanged from the disclosure in Note 7 in the 2018 Form 10-K:

Year		Amount
2019	$	98
2020		61
2021		48
2022		23
2023		7
Total minimum payments required		237
Less: amount representing interest		14
Present value of net minimum lease payments	$	223

8. Shareholders' Equity

Common Stock

The activity related to common shares outstanding is as follows:

	Years Ended December 31, 2019	2018
Beginning of year	18,271,249	17,806,792
Issuance of common stock on exercise of stock options	73,680	0
Restricted stock awards, net of cancellations	189,578	343,810
Director share awards	79,918	71,143
Issuance of common stock from purchase of Employee Stock Purchase Plan shares	180,859	156,795
Cancellation of stock for withholding tax for vested shares	(183,995)	(107,291)
End of Year	18,611,289	18,271,249

Preferred Stock

The Company is authorized to issue up to 5,000,000 shares of preferred stock in one or more series, each with a par value of $0.001 per share. As of December 31, 2019, and 2018, no shares of preferred stock were issued or outstanding.

9. Stock-Based Compensation

Stock Plans

Common Stock Reserved for Future Issuance

A summary of the reserved shares of common stock for future issuance are as follows:

Stock Plan	December 31, 2019	2018
PCTEL, Inc. 2019 Stock Incentive Plan	2,240,669	0
PCTEL, Inc. 2015 Stock Incentive Plan	489,136	2,160,154
PCTEL, Inc. 2019 Employee Stock Purchase Plan	1,800,000	0
PCTEL, Inc. 2014 Employee Stock Purchase Plan	0	194,814
Total shares reserved	4,529,805	2,354,968

These shares available exclude stock options outstanding.

Stock Incentive Plans

On May 29, 2019, at the Annual Meeting of Shareholders, the shareholders adopted and approved the PCTEL, Inc. 2019 Stock Incentive Plan (the "2019 Stock Plan") upon the recommendation of the Board of Directors. The purpose of the 2019 Stock Plan is to promote the interests of the Company and its stockholders by aiding the Company in attracting and retaining employees, officers, consultants, independent contractors and non-employee directors capable of assuring the future success of the Company, to provide such persons with opportunities for stock ownership in the Company and to offer such persons incentives to put forth maximum effort for the success of the Company's business. The 2019 Stock Plan replaced the PCTEL, Inc. Stock Plan adopted in 2015 (the "2015 Stock Plan").

The 2019 Stock Plan, which is administered by the Compensation Committee of the Company's Board of Directors, authorizes the grant of stock options, stock appreciation rights, restricted stock, restricted stock units, and other stock-based awards. The aggregate number of shares that may be issued under all stock-based awards made under the 2019 Stock Plan will be (i) the sum of 2,213,000 shares and (ii) any shares subject to any outstanding award under the 2015 Stock Plan that after the effective date of the 2019 Stock Plan are not purchased, are forfeited or are reacquired by the Company or otherwise not delivered to the participant due to termination or cancellation of such award. At December 31, 2019, the number of shares available in the 2019 Stock Plan that were from the 2015 Plan was 27,669. The Board of Directors may from time to time amend, suspend or terminate the 2019 Stock Plan, subject to its terms.

Employee Stock Purchase Plan

At the 2019 Annual Meeting of Shareholders, the shareholders adopted and approved the PCTEL, Inc. 2019 Employee Stock Purchase Plan (the "2019 ESPP") upon recommendation of the Board of Directors. The purpose of the 2019 ESPP is to provide employees with an opportunity to purchase shares of PCTEL common stock through accumulated payroll deductions. Encouraging employees to acquire equity ownership in PCTEL assures a closer alignment of the interests of participating employees with those of the Company's stockholders. The 2019 ESPP replaces the 2014 ESPP effective for the trading period commencing October 1, 2019. On October 1, 2019, the remaining shares from the 2014 ESPP were cancelled.

The 2019 ESPP is administered by the Compensation Committee of the Company's Board of Directors. Subject to change by the administrator, shares of PCTEL common stock may be purchased during consecutive offering periods that begin approximately every six months commencing on the first trading day on or after April 1 and terminating on the last trading day of the offering period ending on September 30 and commencing on the first trading day on or after October 1 and terminating on the last trading day of the offering period ending on March 31. The maximum number of shares of common stock which are available for sale under the 2019 ESPP is 1,800,000 shares. Unless and until the administrator determines otherwise, the purchase price will be equal to 85% of the fair market value of PCTEL common stock on the first day of an offering period or the last day of an offering period, whichever is lower. The administrator may from time to time amend, suspend or terminate the 2019 ESPP, subject to its terms.

Stock-Based Compensation Expense

The consolidated statements of operations include $4.1 million, and $3.3 million of stock compensation expense for the years ended December 31, 2019 and 2018, respectively. The Company did not capitalize any stock compensation expense during the years ended December 31, 2019, and 2018.

The stock-based compensation expense by type is as follows:

	Years Ended December 31,	
	2019	2018
Service-based awards	$ 1,963	$ 2,618
Director awards	402	422
Performance-based awards - long-term incentive plan	226	0
Performance-based awards - short-term incentive plan	1,335	0
Employee stock purchase plan	205	216
Stock options	2	5
Total	$ 4,133	$ 3,261

The stock-based compensation is reflected in the consolidated statements of operations as follows:

	Years Ended December 31,	
	2019	2018
Cost of revenues	$ 408	$ 224
Research and development	652	620
Sales and marketing	672	576
General and administrative	2,401	1,841
Total	$ 4,133	$ 3,261

The following table presents a summary of the remaining unrecognized share-based compensation expense related to our outstanding share-based awards as of December 31, 2019:

Award Type	Remaining Unrecognized Compensation Expense	Weighted Average Life (Years)
Service-based awards	$ 1,643	1.3
Performance-based awards	$ 678	2.0
Stock options	$ 1	1.1

Service-Based Awards

Restricted Stock

The Company grants service-based restricted shares as employee incentives under the 2019 Stock Plan after its adoption at the 2019 annual meeting of shareholders. The Company previously granted service-based restricted shares under the 2015 Stock Plan. During the year ended December 31, 2019, the Company awarded executives and key-managers long-term incentives comprised one-third of service-based restricted stock and two-thirds of performance-based restricted stock. In 2018, the Company awarded annual service-based restricted stock to eligible employees as long-term incentives. When service-based restricted stock is granted to employees, the Company records deferred stock compensation within additional paid-in capital, representing the fair value of the common stock on the date the restricted shares are granted. The Company records stock compensation expense on a straight-line basis over the vesting period of the applicable service-based restricted shares. These grants vest over various periods; however, the restricted stock grants in 2019 and 2018 vest over three years in equal increments.

The following table summarizes service-based restricted stock activity:

	Years ended December 31,			
	2019		2018	
Unvested Restricted Stock Awards	Shares	Weighted Average Fair Value	Shares	Weighted Average Fair Value
Beginning of year	838,967	$ 6.21	828,576	$ 5.66
Shares awarded	190,159	5.25	486,975	6.92
Shares vested	(538,137)	5.96	(392,975)	5.93
Shares cancelled	(13,802)	6.27	(83,609)	6.14
End of year	477,187	$ 6.11	838,967	$ 6.21

In February 2019, the Company issued to employees 190,159 service-based restricted stock awards that vest in three substantially equal annual increments commencing in 2020. The intrinsic values of service-based restricted shares that vested were $3.3 million and $2.2 million during the years ended December 31, 2019, and 2018, respectively.

Restricted Stock Units

The Company grants service-based restricted stock units as employee incentives. Restricted stock units are primarily granted to foreign employees for long-term incentive purposes. Employee restricted stock units are service-based awards and are amortized over the vesting period. At the vesting date, these units are converted to shares of common stock. The Company records expense on a straight-line basis for restricted stock units.

The following summarizes the service-based restricted stock unit activity:

	Years Ended December 31,			
	2019		2018	
Unvested Restricted Stock Units	Shares	Weighted Average Fair Value	Shares	Weighted Average Fair Value
Beginning of year	18,638	$ 5.66	31,800	$ 5.47
Units awarded	2,700	5.27	5,500	7.05
Units vested/Shares awarded	(13,221)	5.35	(11,587)	5.35
Units cancelled	0	0	(7,075)	6.90
End of year	8,117	$ 5.83	18,638	$ 5.66

The intrinsic values of service-based restricted stock units that vested were $97 and $61, during the years ended December 31, 2019, and 2018, respectively.

Stock Options

The Company may grant stock options to purchase common stock to new employees. The Company issues stock options with exercise prices no less than the fair value of the Company's stock on the grant date. Employee options are subject to installment vesting typically over a period of four years. Stock options may be exercised at any time prior to their expiration date or within 180 days of termination of employment, or such shorter time as may be provided in the related stock option agreement. The Company grants stock options with a ten-year life.

The following table summarizes the Company's stock option activity:

	Years Ended December 31,			
	2019		2018	
	Options Outstanding	Weighted Average Exercise Price	Options Outstanding	Weighted Average Exercise Price
Beginning of Year	423,534	$ 7.15	470,484	$ 7.24
Options granted	0	0.00	2,000	6.98
Options exercised	(154,409)	7.18	0	0.00
Options forfeited	0	0.00	(2,793)	5.13
Options cancelled/expired	(118,879)	7.16	(46,157)	8.21
End of Year	**150,246**	$ 7.11	**423,534**	$ 7.15
Exercisable	**147,394**	$ 7.13	**417,385**	$ 7.17

During the year ended December 31, 2019, the Company received proceeds of $0.5 million from the exercise of 62,909 options and issued 10,771 shares for the exercisable 91,500 options. The intrinsic value of the options exercised was $0.2 million. There were no exercises for the year ended December 31, 2018. The Company did not grant stock options during 2019 and granted 2,000 stock options during 2018.

The range of exercise prices for options outstanding and exercisable at December 31, 2019, was $5.00 to $8.32. The following table summarizes information about stock options outstanding under all stock option plans:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Number Outstanding	Weighted Average Contractual Life (Years)	Weighted-Average Exercise Price	Number Exercisable	Weighted Average Exercise Price
$ 5.00 — $ 5.06	8,500	5.04	$ 5.05	6,738	$ 5.05
$ 6.84 — $ 6.98	4,500	5.15	$ 6.90	3,410	$ 6.88
$ 7.16	84,541	0.27	$ 7.16	84,541	$ 7.16
$ 7.22	40,205	0.26	$ 7.22	40,205	$ 7.22
$ 7.31 — $ 8.32	12,500	1.27	$ 7.86	12,500	$ 7.86
$ 5.00 — $ 8.32	150,246	0.61	$ 7.11	147,394	$ 7.13

The weighted average contractual life and intrinsic value at December 31, 2019, was the following:

	Weighted Average Contractual Life (years)	Intrinsic Value
Options Outstanding	0.61	$ 205
Options Exercisable	0.54	$ 197

The intrinsic value is based on the share price of $8.47 at December 31, 2019.

The Company did not grant any stock options during 2019. The Company calculated the fair value of the 2018 stock options granted on the date of grant using the Black-Scholes option-pricing model based upon the following assumptions:

	2018
Dividend yield	3.2%
Risk-free interest rate	2.4%
Expected volatility	33%
Expected life (in years)	3.7

The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options, which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions including the expected stock price volatility and expected option life. Because the Company's employee stock options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, the existing models may not necessarily provide a reliable single measure of the fair value of the employee stock options.

The dividend yield rate was calculated by dividing the Company's annual dividend by the closing price on the grant date. The risk-free interest rate was based on the U.S. Treasury yields with a remaining term that approximates the expected life of the options granted. The Company calculated the volatility based on a five-year historical period of the Company's stock price. The expected life used for options granted was based on historical data of employee exercise performance. The Company records expense based on the grading vesting method.

Performance-Based Awards

Short-Term Incentive Plan

Incentive compensation earned by executives and key managers under the Company's 2019 and 2018 Short-Term Incentive Plans were to be settled 50% in cash and 50% in shares of the Company's stock. Shares valued at $1.2 million were earned and will be issued to participants during the first quarter 2020. No shares were issued pursuant to the 2018 STIP because the performance thresholds were not met.

Long-Term Incentive Plan

The Company awards performance-based awards to executives and key managers to encourage sustainable growth, consistent earnings and management retention. Based on the fair value of the shares on the grant date, the Company records stock compensation expense over the performance period based on the estimated achievement of the award.

The following table summarizes the performance award activity:

	Years Ended December 31,					
	2019			2018		
Unvested Performance Awards - at Target	**Awards**		**Weighted Average Fair Value**	**Awards**		**Weighted Average Fair Value**
Beginning of Year	0	$	0.00	110,500	$	7.49
Awards Granted	174,117		5.27	0		0.00
Awards vested	0		0.00	0		0.00
Units cancelled	(2,680)		5.27	(110,500)		7.49
End of Year	171,437		5.27	0	$	0.00

The Company granted performance awards to executives and key managers in February 2019 ("2019 LTIP"). Under the 2019 LTIP shares of the Company's stock can be earned based on achievement of a three-year revenue growth target with a penalty if a certain adjusted EBITDA level is not maintained. If the Company achieves less than the target growth over the performance period, the participant will receive fewer shares than the target award, determined on a straight-line basis. If the Company, achieves greater than the target growth, the participant will receive more shares than the target award on an accelerated basis. The performance period for the 2019 LTIP is from January 1, 2019 through December 31, 2021 and the participants are required to be in service at the determination date of the award following the end of the performance period in order to receive the award. Shares earned under the 2019 LTIP will be fully vested shares. At target, the total fair market value of the award was $0.9 million based on the share price of $5.27 on the grant date. On the award date, the aggregate number of shares that could be earned at target was 174,117 and the maximum number of aggregate shares that could be earned was 300,015. During the year ended December 31, 2019, the target and maximum shares that can be earned declined by 2,680 and 4,690, respectively due to employee terminations.

The Company granted performance awards to executives and key managers in 2015 ("2015 LTIP") with four-year revenue goals. No shares were earned under the 2015 LTIP and the remaining awards were cancelled at December 31, 2018. The performance-based awards cancelled during 2018 consisted of 88,000 awards that were not earned and 22,500 awards related to terminated employees.

Employee Stock Purchase Plan

The following table summarizes the ESPP activity:

	Years Ended December 31,			
	2019		2018	
	Shares	Weighted Average Fair Value at Grant Date	Shares	Weighted Average Fair Value at Grant Date
Outstanding, beginning of year	0	$ 0.00	0	$ 0.00
Granted	180,859	1.08	156,795	1.49
Vested	(180,859)	1.08	(156,795)	1.49
Outstanding, end of year	0	$ 0.00	0	$ 0.00

Based on the 15% discount and the fair value of the option feature of this plan, the ESPP is considered compensatory. Compensation expense is calculated using the fair value of the employees' purchase rights under the Black-Scholes model. During the years ended December 31, 2019 and 2018, the Company received proceeds of $0.7 million from the ESPP.

The Company calculated the fair value of each employee stock purchase grant under the ESPP on the date of grant using the Black-Scholes option-pricing model using the following assumptions:

	Employee Stock Purchase Plan	
	2019	2018
Dividend yield	4.1%	3.2%
Risk-free interest rate	2.5%	2.1%
Expected volatility	34%	33%
Expected life (in years)	0.5	0.5

The dividend yield rate was calculated by dividing the Company's annual dividend by the closing price on the grant date. The risk-free interest rate was based on the U.S. Treasury yields with remaining term that approximates the expected life of the options granted. The Company calculated the volatility based on a five-year historical period of the Company's stock price. The expected life used was based on the offering period.

Board of Director Awards

The Company grants equity awards to members of its Board of Directors for an annual retainer and for committee services in shares of the Company's stock. These awards vest immediately. In addition, new directors receive a one-time grant of $55 paid in service-based restricted shares which vest in equal annual increments over three years. During the year ended December 31, 2019, the Company issued 79,918 shares of the Company's stock with a fair value of $0.4 million which vested immediately. During the year ended December 31, 2018, the Company issued 63,897 shares of the Company's stock with a fair value of $0.4 million which vested immediately and issued 7,246 shares with a fair value of $50 vesting over three years to a new Director.

The following table summarizes the director awards activity:

	Years Ended December 31,			
	2019		2018	
	Shares	Weighted Average Fair Value at Grant Date	Shares	Weighted Average Fair Value at Grant Date
Outstanding, beginning of year	7,246	$ 6.90	0	$ 0.00
Granted	79,918	5.03	71,143	6.63
Vested	(82,333)	(5.08)	(63,897)	(6.60)
Outstanding, end of year	4,831	$ 6.90	7,246	$ 6.90

Employee Withholding Taxes on Stock Awards

For ease in administering the issuance of stock awards, the Company holds back shares of vested restricted stock awards and short-term incentive plan stock awards, if paid in the Company's stock, for the value of the statutory withholding taxes. For each individual receiving a stock award, the Company redeems the shares it computes as the value for the withholding tax and remits this amount to the appropriate tax authority. For withholding taxes related to stock awards, the Company paid $1.2 million during the year ended December 31, 2019 and $0.6 million during the year ended December 31, 2018.

Share Repurchases

On November 6, 2019 the Board of Directors approved a share repurchase program pursuant to which the Company may repurchase up to $7.0 million of its common stock, effective immediately through the end of 2020. Such purchases may be made from time to time at predetermined prices in the open market, by block purchases, in private transactions or otherwise. The repurchases will be funded with cash on hand. The Company did not repurchase any shares of its common stock during the fourth quarter of 2019.

10. Product Line, Customer and Geographic Information

Product Line Information:

The following tables are the product line revenues and gross profits for the years ended December 31, 2019, and 2018:

	Year Ended December 31, 2019			
	Antenna Products	Test & Measurement	Corporate	Total
Revenues	$ 62,708	$ 28,115	$ (206)	$ 90,617
Gross Profit	$ 21,841	$ 19,640	$ 31	$ 41,512
Gross Profit %	34.8%	69.9%	NA	45.8%

	Year Ended December 31, 2018			
	Antenna Products	Test & Measurement	Corporate	Total
Revenues	$ 66,328	$ 16,733	$ (82)	$ 82,979
Gross Profit	$ 20,157	$ 10,883	$ 41	$ 31,081
Gross Profit %	30.4%	65.0%	NA	37.5%

Customer Concentration:

There were no customers that accounted for 10% or more of revenues during the years ended December 31, 2019, and 2018.

The following table represents the customers that accounted for 10% or more of total trade accounts receivable at December 31, 2019 and 2018.

	As of December 31,	
Trade Accounts Receivable	**2019**	**2018**
Customer A	15%	9%
Customer B	11%	1%
Customer C	8%	13%

Geographic Information:

The Company's revenue to customers by geographic location, as a percent of total revenues, is as follows:

	Years Ended December 31,	
Region	**2019**	**2018**
Europe, Middle East, & Africa	14%	12%
Asia Pacific	10%	15%
Other Americas	3%	4%
Total Foreign sales	27%	31%
Total Domestic sales	73%	69%
	100%	100%

The long-lived assets by geographic region are as follows:

	December 31,	
	2019	**2018**
United States	$ 17,485	$ 15,153
All Other	945	1,391
	$ 18,430	$ 16,544

11. Benefit Plans

The Company's 401(k) plan covers all of the U.S. employees beginning the first of the month following the first month of their employment. Under this plan, employees may elect to contribute up to 15% of their current compensation to the 401(k) plan up to the statutorily prescribed annual limit. The Company matches 100% of the employee's elective deferrals up to 4% of their compensation. The Company may make discretionary contributions to the 401(k) plan but there were no discretionary contributions during the years ended December 31, 2019 or 2018. The Company also contributes to various defined contribution retirement plans for foreign employees. The defined contribution for foreign employees is primarily related to contributions for employees of the Company's China subsidiary.

The Company's contributions to retirement plans were as follows:

	Years ended December 31,	
	2019	**2018**
PCTEL, Inc. 401(k) profit sharing plan - US employees	$ 645	$ 681
Defined contribution plans - foreign employees	444	527
Total	$ 1,089	$ 1,208

12. Quarterly Data (Unaudited)

	Quarters Ended,			
	March 31, 2019	**June 30, 2019**	**September 30, 2019**	**December 31, 2019**
Revenues	$ 20,590	$ 23,499	$ 23,630	$ 22,898
Gross profit	8,658	10,694	10,647	11,513
Operating income (loss)	(469)	629	941	1,707
Income (loss) before income taxes	(307)	949	1,334	1,814
Net income (loss)	$ (317)	$ 941	$ 1,328	$ 1,798
Net income (loss) per share:				
Basic	$ (0.02)	$ 0.05	$ 0.07	$ 0.10
Diluted	$ (0.02)	$ 0.05	$ 0.07	$ 0.10
Weighted Average Shares:				
Basic	17,617,099	17,827,591	17,921,552	18,033,548
Diluted	17,617,099	17,934,141	18,181,157	18,460,503

	Quarters Ended,			
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
Revenues	$ 21,731	$ 21,582	$ 18,426	$ 21,240
Gross profit	7,864	7,799	6,721	8,697
Operating loss	(1,221)	(1,602)	(2,378)	(425)
Loss before income taxes	(1,170)	(1,393)	(2,152)	(347)
Net loss	$ (858)	$ (1,226)	$ (1,670)	$ (9,135)
Net loss per share:				
Basic	$ (0.05)	$ (0.07)	$ (0.10)	$ (0.53)
Diluted	$ (0.05)	$ (0.07)	$ (0.10)	$ (0.53)
Weighted Average Shares:				
Basic	17,055,659	17,142,318	17,234,187	17,361,255
Diluted	17,055,659	17,142,318	17,234,187	17,361,255

13. Accumulated Other Comprehensive Income

Accumulated other comprehensive losses of $0.3 million and $0.2 million at December 31, 2019 and December 31, 2018, respectively, consists of foreign currency translation adjustments.

14. Revenue from Contracts with Customers

Under Topic 606, a contract with a customer is an agreement which both parties have approved, that creates enforceable rights and obligations, has commercial substance, and has identified payment terms, and for which collectability is probable. Once the Company has entered into a contract, it is evaluated to identify performance obligations. For each performance obligation, revenue is recognized as control of promised goods or services transfers to the customer in an amount that reflects the consideration the Company expects to receive in exchange for those goods or services. The amount of revenue recognized takes into account variable consideration, such as returns and volume rebates. A majority of the Company’s revenue is short cycle in nature with shipments within one year from order. The Company's payment terms generally range between 30 to 90 days.

All of the Company’s revenue relates to contracts with customers. The Company’s accounting contracts are from purchase orders or purchase orders combined with purchase agreements. The majority of the Company’s revenue is recognized on a “point-in-time” basis and a nominal amount of revenue is recognized “over time”. For the sale of antenna products and test & measurement products, the Company satisfies its performance obligations generally at the time of shipment, or upon delivery based on the contractual terms with its customers. For products shipped on consignment, the Company recognizes revenue upon delivery from the consignment location. For its test & measurement software tools, the Company has a performance obligation to provide software maintenance and support for one year. The Company recognizes revenues for the maintenance and support over this period.

The Company considers shipping and handling performed by the Company as fulfillment activities. Amounts billed for shipping and handling are included in revenues, while costs incurred for shipping and handling are included in cost of revenues. The Company excludes taxes from the transaction price. Cost of contracts include sales commissions. The Company expenses the cost of contracts when incurred because the amortization period is one year or less.

For the test & measurement product line, performance obligations for the sale of products and software licenses are satisfied at a point in time and the performance obligations for post contract support (“PCS”), extended warranties, and data storage are satisfied over time. If there is no standalone selling price for the performance obligations satisfied over time, the Company uses a market assessment approach for the standalone selling price. This standalone selling price is consistent for all customers.

Antenna product line sales have either contract pricing or negotiated prices on individual purchase orders. Variable consideration related to specific customers or orders that impacts the stand-alone selling price including right of return, rebate incentives, or quantity-based pricing. The Company allows its major distributors and certain other customers to return unused antenna products under specified terms and conditions. The Company estimates product returns based on historical sales and return trends and records a corresponding refund liability. The refund liability was $0.1 million and $0.2 million at December 31, 2019 and December 31, 2018, respectively and is included within accrued liabilities on the accompanying consolidated balance sheets. Additionally, the Company recorded an asset based on historical experience for the amount of product expected to be returned to inventory as a result of the return, which is recorded in inventories in the condensed consolidated balance sheets. The product return asset was $0.1 million at December 31, 2019 and December 31, 2018.

There were no contract assets at December 31, 2019 or December 31, 2018. The Company records contract liabilities for deferred revenue and customer prepayments. Contract liabilities are recorded in accrued liabilities in the consolidated balance sheets. The contract liability was $0.2 million at December 31, 2019 and at December 31, 2018. The Company recognized revenue of $0.2 million during the years ended December 31, 2019, and December 31, 2018 respectively, related to contract liabilities at the beginning of the period.

15. Subsequent Events

The Company evaluates subsequent events occurring between the most recent balance sheet date and the date that the financial statements are available to be issued in order to determine whether the subsequent events are to be recorded and/or disclosed in the Company’s financial statements and footnotes. The financial statements are considered to be available to be issued at the time that they are filed with the SEC.

There were no subsequent events or transactions that required recognition or disclosure in the consolidated financial statements

Item 9: Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A: Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

Our management evaluated, with the participation of our Chief Executive Officer and our Chief Financial Officer, the effectiveness of our disclosure controls and procedures as defined by Rule 13a-15(e) of the Securities Exchange Act of 1934, as of the end of the period covered by this Annual Report on Form 10-K. Based on this evaluation, our Chief Executive Officer and our Chief Financial Officer have concluded that our disclosure controls and procedures are effective to ensure that information we are required to disclose in our reports that we file or submit under Securities Exchange Act of 1934 (i) is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and (ii) is accumulated and communicated to our management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

(b) Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934. Our internal control over financial reporting is a process designed by, or under the supervision of, our principal executive and principal financial officers, or persons performing similar functions, and effected by our board of directors, management, and other personnel, 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 (GAAP) and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of PCTEL;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of PCTEL are being made only in accordance with authorizations of management and directors of PCTEL; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of PCTEL's assets that could have a material effect on the financial statements.

Our management has assessed the effectiveness of our internal control over financial reporting as of December 31, 2019. In making its assessment of internal control over financial reporting, management used the criteria described in "*2013 Internal Control – Integrated Framework*" issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Based on our management's assessment of internal control over financial reporting, management has concluded that, as of December 31, 2019, our internal control over financial reporting was effective to provide assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Grant Thornton LLP, our independent registered public accounting firm, has audited and issued their report on our internal control over reporting, which is included herein.

(c) Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting during the most recently completed fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B: Other Information

None.

PART III

Item 10: Directors, Executive Officers and Corporate Governance

The information required by this Item 10 will be included in PCTEL's proxy statement for the 2020 Annual Meeting of Stockholders under the captions "Proposal #1 Election of Directors," " Information About Our Executive Officers," and "Corporate Governance" and is incorporated by reference herein. The proxy statement will be filed with the SEC pursuant to Rule 14a-6 under the Exchange Act in accordance with applicable SEC deadlines and is incorporated in this Item 10 by reference.

Item 11: Executive Compensation

The information required by this Item 11 will be included in PCTEL's proxy statement for the 2020 Annual Meeting of Stockholders under the captions "Executive Compensation and Other Matters," and "Compensation of Directors," and is incorporated by reference herein.

Item 12: Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item 12 will be included in PCTEL's proxy statement for the 2020 Annual Meeting of Stockholders under the captions under the caption "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation and Other Matters-Summary of Equity Plans" and is incorporated by reference herein.

Item 13: Certain Relationships and Related Transactions, and Director Independence

The information required by this Item 13 will be included in PCTEL's proxy statement for the 2020 Annual Meeting of Stockholders under the captions "Certain Relationships and Related Person Transactions" and "Corporate Governance" and is incorporated by reference herein.

Item 14: Principal Accountant Fees and Services

The information required by this Item 14 will be included in PCTEL's proxy statement for the 2020 Annual Meeting of Stockholders under the captions "Summary of Fees" of Proposal #4 and "Pre-Approval of Independent Auditor Services and Fees" and is incorporated by reference herein.

PART IV

Item 15: Exhibits and Financial Statement Schedules

(a) (1) Financial Statements

The Consolidated Financial Statements are included in Part II, Item 8 of this Annual Report on Form 10-K on pages 24 to 58.

(a) (2) Financial Statement Schedules

The following financial statement schedule is filed as a part of this Report under Schedule II immediately preceding the signature page: Schedule II — Valuation and Qualifying Accounts for the two fiscal years ended December 31, 2019.

PCTEL, INC.
SCHEDULE II — VALUATION AND QUALIFYING ACCOUNTS
(in thousands)

	Balance at Beginning of Year	Charged to Costs and Expenses	Additions (Deductions)	Balance at End of Year
Year Ended December 31, 2018:				
Allowance for doubtful accounts	$ 319	265	(521)	$ 63
Warranty reserves	$ 382	65	(108)	$ 339
Deferred tax asset valuation allowance	$ 5,234	9,223	0	$ 14,457
Year Ended December 31, 2019:				
Allowance for doubtful accounts	$ 63	(2)	43	$ 104
Warranty reserves	$ 339	213	(108)	$ 444
Deferred tax asset valuation allowance	$ 14,457	0	(967)	$ 13,490

All other schedules called for by Form 10-K are omitted because they are inapplicable, or the required information is shown in the financial statements, or notes thereto, included herein.

(a) (3) Exhibits (numbered in accordance with Item 601 of Regulation S-K)

The exhibits listed below are filed or incorporated by reference as part of this Annual Report on Form 10-K. We will furnish at no cost a copy of any exhibit filed with or incorporated by reference into this Annual Report on Form 10-K. Oral or written requests for copies of any exhibits should be directed to us, with attention to Company Secretary.

Exhibit No.		Description	Reference
3.1		Amended and Restated Certificate of Incorporation of PCTEL, Inc. (P)	Incorporated by reference to Exhibit Number 3.2 filed with the Registrant's Registration Statement on Form S-1 (File No. 333-84707).
3.2		Amended and Restated Bylaws of the Registrant	Filed Herewith
4.1		Specimen common stock certificate (P)	Incorporated by reference to Exhibit Number 4.1 filed with the Registrant's Registration Statement on Form S-1 (File No. 333-84707).
4.2		Description of Securities	Filed Herewith
10.1	*	Form of Indemnification Agreement between PCTEL, Inc. and each of its directors and officers (P)	Incorporated by reference to Exhibit Number 10.1 filed with the Registrant's Registration Statement on Form S-1 (File No. 333-84707).
10.2	*	Form of Severance Benefits Letter	Incorporated by reference to Exhibit Number 10.1 filed with the Registrant's Current Report on Form 8-K on November 7, 2018.
10.3	*	Form of Stock Plan Stock Option Award Agreement, as amended September 18, 2018	Incorporated by reference to Exhibit Number 10.69 filed with the Registrant's Current Report on Form 8-K on September 22, 2008.
10.4	*	Employee Stock Purchase Plan, as amended and restated June 10, 2014	Incorporated by reference from Appendix A to the Registrant's Definitive Proxy Statement on Schedule 14A filed April 30, 2014.
10.5	*	PCTEL, Inc., Stock Plan, as amended and restated June 30, 2015	Incorporated by reference From Appendix A to the Registrant’s Definitive Proxy Statement on Schedule 14A filed on April 30, 2015.
10.6	*	Employment Agreement dated December 5, 2016 between PCTEL, Inc. and David A. Neumann	Incorporated by reference to Exhibit Number 10.15 filed with the Registrant's Annual Report on Form 10-K for fiscal year ended December 31, 2017.
10.7	*	Amended and Restated Management Retention Agreement dated April 9, 2013 between PCTEL, Inc. and David A. Neumann	Incorporated by reference to Exhibit Number 10.16 filed with the Registrant's Annual Report on Form 10-K for fiscal year ended December 31, 2017.
10.7.1	*	First Amendment to Amended and Restated Management Retention Agreement dated December 13, 2016 between PCTEL, Inc. and David A. Neumann	Incorporated by reference to Exhibit Number 10.16.1 filed with the Registrant's Annual Report on Form 10-K for fiscal year ended December 31, 2017.
10.8	*	Form of Management Retention Agreement	Incorporated by reference to Exhibit Number 10.9 filed with the Registrant's Annual Report on Form 10-K for fiscal year ended December 31, 2018
10.9	*	FY 2019 Amended and Restated Sales Compensation Plan dated March 15, 2019 between PCTEL, Inc. and Arnt Arvik	Incorporated by reference to Exhibit Number 10.12 filed with the Registrant's Annual Report on Form 10-K for fiscal year ended December 31, 2018
10.10	*	PCTEL, Inc. Long-Term Incentive Award Agreement dated February 6, 2019	Incorporated by reference to Exhibit Number 10.13 filed with the Registrant's Annual Report on Form 10-K for fiscal year ended December 31, 2018
10.11		Lease Agreement between FP Gateway 270, LLC (Landlord) and PCTEL, Inc. (Tenant) \	Incorporated by reference to Exhibit Number 10.14 filed with the Registrant's Annual Report on Form 10-K for fiscal year ended December 31, 2018

Exhibit No.		Description	Reference
10.12	*	PCTEL, Inc. 2019 Stock Incentive Plan	Incorporated by reference from Appendix A to the registrants Definitive Proxy Statement on Schedule 14A Filed April 16, 2019.
10.13	*	PCTEL, Inc. 2019 Employee Stock Purchase Plan	Incorporated by reference from Appendix B to the registrants Definitive Proxy Statement on Schedule 14A Filed April 16, 2019.
10.14	*	PCTEL, Inc. Long-Term Incentive Award Agreement dated February 5, 2020	Filed Herewith
10.15	*	PCTEL, Inc. Long-Term Incentive Award Agreement (RSUs) dated February 5, 2020	Filed Herewith
10.16	*	Sales Compensation Plan dated January 30, 2020 between PCTEL, Inc. and Arnt Arvik	Filed Herewith
21		List of significant subsidiaries	Filed Herewith
23		Consent of Grant Thornton LLP	Filed Herewith
24		Power of Attorney	Filed Herewith
31.1		Certification of Principal Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15(d)-14(a), as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002	Filed Herewith
31.2		Certification of Principal Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15(d)-14(a), as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002	Filed Herewith
32		Certifications of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of Sarbanes-Oxley Act of 2002.	Filed Herewith
101.INS		XBRL Instance Document	Filed Herewith
101.SCH		XBRL Taxonomy Extension Schema	Filed Herewith
101.CAL		XBRL Taxonomy Extension Calculation Linkbase	Filed Herewith
101.DEF		XBRL Taxonomy Extension Definition Linkbase	Filed Herewith
101.LAB		XBRL Taxonomy Extension Label Linkbase	Filed Herewith
101.PRE		XBRL Taxonomy Extension Presentation Linkbase	Filed Herewith

* Management contract or compensatory plan or arrangement required to be filed as an Exhibit hereto.
(P) Paper Filing

Item 16: Form 10-K Summary

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized:

PCTEL, Inc.
A Delaware corporation

/s/ DAVID A. NEUMANN
David A. Neumann

Chief Executive Officer
Dated: March 13, 2020

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ DAVID A. NEUMANN (David A. Neumann)	Chief Executive Officer	March 13, 2020
/s/ KEVIN MCGOWAN (Kevin McGowan)	Chief Financial Officer (Principal Financial and Accounting Officer)	March 13, 2020
/s/ CINDY K. ANDREOTTI (Cindy K. Andreotti)	Director	March 13, 2020
/s/ GINA HASPILAIRE (Gina Haspilaire)	Director	March 13, 2020
/s/ CYNTHIA KEITH (Cynthia Keith)	Director	March 13, 2020
/s/ STEVEN D. LEVY (Steven D. Levy)	Director	March 13, 2020
/s/ GIACOMO MARINI (Giacomo Marini)	Director	March 13, 2020
/s/ M. JAY SINDER (M. Jay Sinder)	Director	March 13 ,2020

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PCTEL

CORPORATE INFORMATION

BOARD OF DIRECTORS
David A. Neumann
Chief Executive Officer
PCTEL, Inc.

Cindy K. Andreotti
President and CEO
The Andreotti Group

Gina Haspilaire
Vice President of Partner Engagements
Netflix, Inc.

Cynthia A. Keith
Retired Partner
PricewaterhouseCoopers, LLP

Steven D. Levy
Chairman of the Board, PCTEL, Inc.
Retired Lehman Brothers Executive

Giacomo Marini
Chairman
Noventi LLC

M. Jay Sinder
Consultant

ELECTED OFFICERS
David A. Neumann
Chief Executive Officer

Arnt Arvik
Vice President and Chief Sales Officer

Shelley J. Bacastow
Senior Vice President and Chief Legal Officer

Rishi Bharadwaj
Senior Vice President and Chief Operating Officer

Kevin McGowan
Vice President and Chief Financial Officer

Sumeet Paul
Vice President and Chief Information Officer

Les W. Sgnilek
Vice President Corporate Resources and
Chief Risk Officer

TRANSFER AGENT
EQ Shareholder Services
1110 Centre Pointe Curve, Suite 101
Mendota Heights, MN 55120
Tel: 1.855.217.6361

INDEPENDENT PUBLIC ACCOUNTANTS
Grant Thornton LLP
Chicago, IL

ANNUAL MEETING
The Annual Meeting of Stockholders will be
held virtually via the Internet
Date: Wednesday, May 27, 2020
Time: 3:00 p.m. Central Time
Virtual Shareholder Meeting:
www.virtualshareholdermeeting.com/PCTI2020

INVESTOR RELATIONS
For further information on the Company,
additional copies of the Form 10-K filed with
the Securities and Exchange Commission, or
other financial information, please contact:

PCTEL, Inc.
471 Brighton Drive
Bloomingdale, IL 60108 U.S.A.
Tel: 1.630.372.6800
Fax: 1.630.372.8077

You may also contact us by sending
an e-mail to:
investorrelations@pctel.com
or by visiting our web site at
www.pctel.com

GLOBAL HEADQUARTERS
471 Brighton Drive
Bloomingdale, IL 60108 U.S.A.
Tel: 1.630.372.6800
Fax: 1.630.372.8077

OTHER OFFICES
22600 Gateway Center Drive, Suite 100
Clarksburg, MD 20871 U.S.A.
Tel: 1.301.515.0036
Fax: 1.301.515.0037

787 White Pond Drive, Suite A
Akron, OH 44320
Tel: 1.630.372.6800

First Floor No. 3 Building, Block B,
C&W Electronics Park
14 Jiu Xian Qiao Road
Chao Yang District
Beijing, China 100015
Tel: 86.10.64362066
Fax: 86.10.64376752

PengAn Road 3#
PengAn Industrial Park
Beichen District, Tianjin City
PR China
Tel: 86.22.2666.6741
Fax: 86.22.2666.7439