

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, 2018

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
(State or Other Jurisdiction of
Incorporation or Organization)

471 Brighton Drive,
Bloomington IL
(Address of Principal Executive Office)

77-0364943
(I.R.S. Employer
Identification Number)

60108
(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

Name of each exchange on which registered

Common Stock, \$.001 Par Value Per Share

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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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, 2018, the last business day of the registrant's most recently completed second fiscal quarter, there were 18,318,141 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 30, 2018) was approximately \$114,305,200. 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.

18,429,313 shares of common stock were issued and outstanding as of March 13, 2019.

Documents Incorporated by Reference

Certain sections of the registrant's definitive proxy statement relating to its 2019 Annual Stockholders' Meeting to be held on May 29, 2019 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.

TABLE OF CONTENTS

<u>PART I</u>		
Item 1	Business	3
Item 1A	Risk Factors	5
Item 1B	Unresolved Staff Comments	9
Item 2	Properties	9
Item 3	Legal Proceedings	10
Item 4	Mine Safety Disclosures	10
<u>PART II</u>		
Item 5	Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	11
Item 7	Management's Discussion and Analysis of Financial Condition and Results of Operations	12
Item 7A	Quantitative and Qualitative Disclosures about Market Risk	22
Item 8	Financial Statements and Supplementary Data	24
Item 9	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	59
Item 9A	Controls and Procedures	59
Item 9B	Other Information	59
<u>PART III</u>		
Item 10	Directors, Executive Officers and Corporate Governance	60
Item 11	Executive Compensation	60
Item 12	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	60
Item 13	Certain Relationships and Related Transactions, and Director Independence	60
Item 14	Principal Accountant Fees and Services	60
<u>PART IV</u>		
Item 15	Exhibits and Financial Statement Schedules	61
Item 16	Form 10-K Summary	61
	Index to Exhibit	62
	Signatures	64

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”) delivers Performance Critical **TE**lecom technology solutions to the wireless industry. We are a leading global supplier of antennas and wireless network testing solutions. Our precision 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 (IIoT). We offer in-house design, testing, radio integration, and manufacturing capabilities for our antenna customers. PCTEL’s test and measurement tools improve the performance of wireless networks globally, with a focus on LTE, public safety, and emerging 5G technologies. Network operators, neutral hosts, and equipment manufacturers rely on our scanning receivers and testing solutions to analyze, design, and optimize their 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 is celebrating its 25th year in business, having been incorporated in California in 1994 and reincorporated in Delaware in 1998. Our principal executive offices are located at 471 Brighton Drive, Bloomington, 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, 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.

Our antennas are primarily sold to original equipment manufacturer (“OEM”) providers where they are designed into and incorporated into the customer’s solution. Competition in the antenna markets is fragmented. Competitors include Airgain, Amphenol, Laird, Panorama, Pulse, and Taoglas. PCTEL maintains expertise in several technology areas in order to be competitive in the antenna market.

Test and Measurement Products PCTEL provides radio frequency (“RF”) test and measurement tools that improve the performance of wireless networks globally, with a focus on LTE, public safety, and emerging 5G technologies. Wireless carriers, neutral hosts, engineering services companies, and equipment manufacturers rely on PCTEL to analyze, design, and optimize next generation wireless networks. Revenue growth in this market is driven by expansion of current wireless technologies to improve coverage and capacity and 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 and 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, engineering companies, or to OEMs who integrate our products into their solutions which are then sold to wireless carriers. Competitors for our test tool products include OEMs such as Anritsu, Viavi, Digital Receiver Technology, and Rohde and Schwarz. PCTEL maintains expertise in several technology areas in order to be competitive in the test tool market.

Discontinued Operations

During the quarter ended June 30, 2017, we approved a plan to sell our Network Engineering Service business (“Engineering Services”) and shifted our focus toward research and development driven RF products. On July 31, 2017, we sold substantially all of the assets of our Engineering Services business to Gabe’s Construction Co., Inc. (“Gabe’s”) for a purchase price of \$1.45 million in cash. The Engineering Services business provided design, testing, commissioning, optimization, and consulting services for cellular, Wi-Fi and public safety networks. We classified assets of the Engineering Services business as held for sale at December 31, 2017 and reported the results of its operations as discontinued operations for the year ended December 31, 2017. The financial information presented in this annual report on Form 10-K reflects the historical results of Engineering Services as discontinued operations. See Note 3 in the notes to the financial statements for more information on discontinued operations.

Reorganization and Segment Reporting

Effective August 2018, we consolidated our organizational structure to drive growth and address the convergence in the industrial IIoT, public safety, and 4G infrastructure markets and the emergence of new technologies such as 5G (“the Reorganization”). Our operations, engineering, business development, sales and marketing, and operational general and administrative functions were consolidated into a single enterprise-wide organization. As a result of the Reorganization, our Chief Executive Officer, as the chief operating decision maker (“CODM”) began assesses operating profits and identifies assets at the enterprise level for resource allocations. In connection with the Reorganization, in the place of general managers for each segment, the Board of Directors appointed a Chief Operating Officer who maintains regular contact with the CODM to discuss operating activities, financial results, forecasts, and plans for the Company’s entire businesses. All operating profit and cash flows are measured and managed at the enterprise level. The balance sheet and cash flows were already managed centrally at the corporate level, with the exception of accounts receivable and inventory, and now as a result of the Reorganization, those assets are also managed at the corporate level.

Until the Reorganization, PCTEL operated in two segments for reporting purposes, Connected Solutions and RF Solutions. We are reporting our financial condition and results of operations as one segment beginning with this annual report on Form 10-K; however, we have included revenues and gross profit for the two major product lines (antenna products and test and measurement products). In order to understand our financial results, it is necessary to understand the impact on gross profit margin of the revenue mix between the two product lines.

Major Customers

There were no customers that accounted for 10% or more of revenues during the years ended December 31, 2018, and 2017.

The following table represents customers that accounted for 10% or more of total trade accounts receivable at December 31, 2018 and 2017:

Trade Accounts Receivable	As of December 31,	
	2018	2017
Customer A	13%	12%

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.

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 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 connection with the Reorganization, the Company combined its sales functions under a single Chief Sales Officer and has focused on sharing best sales practices and software tools company-wide to execute on our marketing strategy. 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

PCTEL has historically done final assembly of most of our antenna products in-house at our facilities in Bloomingdale, Illinois and Tianjin, China and final assembly of all and all of our OEM receiver and interference management product lines in-house at our facility in Germantown, Maryland. In order to optimize the cost structure of our antenna product line and increase our competitiveness, we have engaged with several contract manufacturers over the last several years and are in the process of transitioning several product lines from our Tianjin facility to additional contract manufacturers in China and elsewhere over the next two years. As a result of using multiple contract manufacturers with a variety of expertise, we will avoid becoming dependent on any specific contract manufacturer. If any of our contract manufacturers are unable to provide satisfactory services for us, other contract manufacturers are available, although transitioning a new contract manufacturer could cause delays, disruption and additional costs and could negatively impact our timely delivery of products. 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 7 for information on purchase commitments.

Employees

As of December 31, 2018, we had 454 full-time equivalent employees, consisting of 324 in operations, 55 in research and development, 42 in sales and marketing, and 33 in general and administrative functions. Total full-time equivalent employees were 484 at December 31, 2017. Headcount decreased by 30 at December 31, 2018 from December 31, 2017 primarily due a reduction in force related to the U.S. workforce. None of our U.S. employees are represented by a labor union. All of 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. As indicated in the section titled "Manufacturing" above, we are in the process of transitioning the final assembly of some of our antenna products to contract manufacturers, resulting in a reduction of a significant portion of our workforce in Tianjin, China. We are negotiating severance arrangements for those workers.

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, the Company has to anticipate which technologies are promising and will be adopted by its 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 the Company's long-term competitiveness.

To innovate and solve complex network engineering problems, the Company has to offer highly competitive compensation in order to attract and retain specific types of engineers and other skilled professionals. In addition, the Company 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 our Company from its competitors and may result in a significant loss of business or diminishing margin on our products.

Mobile operators, who drive demand for our products, may decrease their capital expenditures on their mobile networks.

Mobile operators engage in a variety of businesses and must allocate their capital expenditure budget across these businesses. They may limit their capital expenditures allocated to improvement of their network or adoption of new technologies. Our business depends upon their demand for our solutions and products.

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:

- a competitor 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 a new participant or as a result of a merger of existing competitors; and
- potential competitors have 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, including 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 a 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; (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, including certain PCTEL antenna and antenna components, and a potential increase in certain of these tariffs is currently under consideration. In addition to impacting the products sent to our U.S.-based customers from our facility in Tianjin, China, these tariffs pertain to certain components and materials sent from our Tianjin facility to our Bloomingdale, Illinois facility for final assembly. The costs of these tariffs have necessitated price increases and may result in a loss of revenue. The impact of the tariffs on the Company's future revenue and profitability is uncertain. Furthermore, political uncertainty surrounding international trade disputes and protectionist measures may have a negative effect on customer confidence and spending. The Company will continue to monitor, manage manufacturing costs, and adjust prices as necessary and as market conditions permit. We do not believe these price increases have resulted in a significant loss of revenue.

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

PCTEL has 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.

In addition, in the event that our suppliers discontinued 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 scanning receivers at our facility in Germantown, 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, over the next two years 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, the Company must manage its operations to limit the cost of product production, accurately forecast demand for its 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 commences volume production of equipment that incorporates 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 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 sufficient 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. 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 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.

Federal income tax reform could have unforeseen effects on our financial condition and results of operations.

The 2017 Tax Cuts and Jobs Act ("Tax Act") includes international provisions, which generally establish a territorial-style system for taxing foreign-source income of domestic multinational corporations. The Tax Act imposed a deemed repatriation tax on foreign earnings and implemented a minimum tax on the global intangible low-taxed income ("GILTI"), which is generally the net income of its controlled foreign corporation in excess of a 10% return on depreciable tangible assets after identification of other income subject to non-deferral rules. The ultimate outcome of the Tax Act on our business and financial condition is uncertain. It is possible that the application of these new rules may have a material and adverse impact on our operating results, cash flows and financial condition.

Risks Related to our Common Stock

The trading price of our stock price may be volatile based on a number of factors, many of which are not under our control.

Our stock can experience significant changes in price on a percentage basis. The closing price on the Nasdaq Global Select Market fluctuated between a high of \$7.83 and a low of \$3.94 during 2018. Our stock price can be subject to wide fluctuations in response to a variety of factors, many of which are out of our control, including:

- adverse changes in domestic or global economic conditions,
- 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, and
- sales of common stock by our stockholders or the Company or repurchases 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:

Location	Square feet	Owned/Leased	Lease Term	
			Beginning	Ending
Bloomington, Illinois	75,517	Owned	N/A	N/A
Tianjin, China	44,289	Leased	2012	2020
Germantown, Maryland	20,704	Leased	2012	2020
Beijing, China	11,270	Leased	2016	2020
Akron, Ohio	5,977	Leased	2018	2025
Lexington, North Carolina	5,630	Leased	2013	2019
Englewood, Colorado	4,759	Leased	2015	2020

Facility Changes

In August 2017, we entered into a new seven-year lease for 5,977 square feet of office space in Akron, Ohio for wireless product development. The annual lease obligation pursuant to the agreement was \$0.1 million. We assumed occupancy of this office in March 2018.

In April 2018, we extended our lease of its first-floor facility space in Tianjin, China. The total lease obligation pursuant to the lease agreement is approximately \$0.1 million. The lease expires in October 2020 which is consistent with the expiration for the second-floor facility lease in Tianjin, China.

During the first quarter 2016, we vacated our Colorado office lease in order to consolidate facility space related to our Engineering Services reporting unit. In May 2017, we signed a sublease with a term through the lease termination date. The lease expires on October 31, 2020. See Note 5 in the notes to the financial statements for more information on the Colorado lease.

We exited the office in Lexington, North Carolina in the fourth quarter 2018 and we will not renew this lease.

On January 18, 2019 we entered into a new lease for 21,030 square feet of office space in Clarksburg, Maryland commencing January 1, 2020. The lease has an eleven-year term that ends on December 31, 2027. Total lease payments are \$5.0 million. We will relocate our operations from Germantown, Maryland facility to the new facility in Clarksburg, Maryland in January 2020.

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 are 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, 2018, 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 13, 2019, 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. The Company did not repurchase any shares of its common stock during the fourth quarter of 2018, and it has no shares remaining that could be repurchased under previously approved programs.

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. The review highlights the principal factors affecting earnings and the significant changes in balance sheet items for the years 2018 and 2017. 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 delivers Performance Critical TELEcom technology solutions to the wireless industry. We are a leading global supplier of antennas and wireless network testing solutions.

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 primarily in small cells, enterprise Wi-Fi access points, fleet management and transit systems, and in 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, Pulse, and Taoglas.

PCTEL’s Test & Measurement Product line provides test tools that improve the performance of wireless networks globally with a focus on LTE, public safety, and emerging 5G technologies. Network operators, neutral hosts, and equipment manufacturers rely on our scanning receivers and testing solutions to analyze, design, and optimize their 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 and 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.

During the quarter ended June 30, 2017, we approved a plan to sell our Network Engineering Service business (“Engineering Services”) and shift our focus toward highly engineered radio frequency (“RF”) products. On July 31, 2017, we sold substantially all the assets of our Engineering Services business to Gabe’s Construction Co., Inc. (“Gabe’s”) for a purchase price of \$1.45 million. The Engineering Services business provided design, testing, commissioning, optimization, and consulting services for cellular, Wi-Fi and public safety networks was a reporting unit within Test & Measurement Products. We classified assets of the Engineering Services reporting unit as held for sale at December 31, 2017 and reported the results of its operations as discontinued operations for the year ended December 31, 2017. The financial information presented in this Form 10-K reflects the historical results of the Engineering Services business as discontinued operations. See Note 3 in the notes to the financial statements for more information on discontinued operations.

Reorganization and Segment Reporting

Effective August 2018, we consolidated our organizational structure to drive growth and address the convergence in the industrial IoT, public safety, and 4G infrastructure markets and the emergence of new technologies such as 5G (the “Reorganization”). Our operations, engineering, business development, sales and marketing, and operational general and administrative functions were consolidated into a single enterprise-wide organization. As a result of the Reorganization, our Chief Executive Officer, as the CODM, began assessing operating profits and identified assets at the enterprise level for resource allocations. In connection with the

Reorganization, the Board of Directors appointed a Chief Operating Officer who maintains regular contact with the CODM to discuss operating activities, financial results, forecasts, and plans for the Company's businesses. All operating profit and cash flows are measured and managed at the enterprise level.

Until the Reorganization, PCTEL operated in two segments for reporting purposes, Connected Solutions and RF Solutions. Our CODM assessed operating profits and identified assets for the Connected Solutions and RF Solutions segments for resource allocations. Each segment had its own general manager as well as its own engineering, business development, sales and marketing, and operational general and administrative functions.

Because the Reorganization occurred during the third quarter 2018, this Form 10-K does not include segment reporting information; however, we have included revenues and gross profit for the two major product lines (antenna products and test and measurement products) because each product line has a significantly different gross profit margin profile. In order to understand our financial results, it is necessary to understand the impact on gross profit margin of the revenue mix between them.

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. The patent submissions are primarily for defensive purposes, rather than for potential license revenue generation.

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 key vertical markets for antenna products.

Manufacturing

We have historically done final assembly of most of our antenna products in-house at our facilities in Bloomingdale, Illinois and Tianjin, China and final assembly of all our OEM receiver and interference management product lines in-house at our facility in Germantown, Maryland. In order to optimize the cost structure of our antenna product line and increase our competitiveness, we have engaged with several contract manufacturers over the last several years and are in the process of transitioning several product lines from our Tianjin facility to additional contract manufacturers in China and elsewhere over the next two years. As a result of using multiple contract manufacturers with a variety of expertise, we will avoid becoming dependent on any specific contract manufacturer. If any of our contract manufacturers are unable to provide satisfactory services for us, other contract manufacturers are available, although transitioning to a new contract manufacturer could cause delays, disruption and additional costs and could negatively impact our timely delivery of products. 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 our suppliers.

Financial Summary

Revenues were approximately \$83.0 million for the year ended December 31, 2018, a decrease of 9.3% from the prior year. By product line, revenues decreased by \$6.3 million (27.3%) for test & measurement products and \$2.3 million (3.3%) for antenna products. Gross margins were lower by \$7.7 million due to the gross margin impact of lower revenues, a higher mix of antenna products versus test and measurement products, and lower gross margin percentages within both product lines compared to 2017. Operating expenses declined in 2018 by \$0.7 million as 2017 included incentive compensation expense of \$1.4 million under the short-term incentive plan and higher sales commission of \$0.3 million, partially offset by separation costs and other related costs of \$1.0 million associated with our Reorganization in 2018. Higher interest income provided additional other income of \$0.5 million in 2018 compared to 2017. The net impact of these changes resulted in an operating loss of \$5.6 million in 2018 compared to operating income of \$1.4 million in 2017.

Results of Operations for Continuing Operations
Years ended December 31, 2018 and 2017
(All amounts in tables, other than percentages, are in thousands)

REVENUES BY PRODUCT LINE

	2018	2018 compared to 2017		2017
		\$ Change	% Change	
Antenna Products	\$ 66,328	\$ (2,284)	-3.3%	\$ 68,612
Test & Measurement Products	16,733	(6,286)	-27.3%	23,019
Corporate	(82)	112	not meaningful	(194)
Total	\$ 82,979	\$ (8,458)	-9.3%	\$ 91,437

Revenues for antenna products decreased \$2.3 million (3.3%) compared to 2017, primarily due to lower revenues from site solutions products and from fleet and transit systems. Revenues declined by \$6.3 million (27.3%) for test & measurement products primarily due to lower revenues from U.S. carriers and from customers in the Asia Pacific region. Revenues from U.S. carriers declined by \$4.1 million and revenues in the Asia Pacific region declined by \$1.6 million compared to 2017. Spending was lower on legacy systems by U.S. carriers in preparation for the capital expenditures required for 5G deployments.

GROSS MARGIN BY PRODUCT LINE

	2018	% of Revenues	2017	% of Revenues
	Antenna Products	\$ 20,157	30.4%	\$ 22,439
Test & Measurement Products	10,883	65.0%	16,354	71.0%
Corporate	41	not meaningful	18	not meaningful
Total	\$ 31,081	37.5%	\$ 38,811	42.4%

The gross margin percentage was 37.5% for the year ended December 31, 2018, a decrease of 4.9% compared to 2017. Approximately 1.7% of the gross margin percentage decline was due to a lower mix of test and measurement products in 2018. The proportion of test and measurement products declined from 25% in 2017 to 20% in 2018. The remainder of the percentage decline is due to lower gross margin percentages in both product lines in 2018 compared to 2017. For antenna products, the gross margin percentage declined by 2.3% due to less favorable product mix, pricing pressure with small cell antennas, and costs associated with headcount reductions associated with our corporate reorganization in the third quarter 2018. For test and measurement products, the gross margin percentage decreased by 6.0% to 65.0% due to volume decline and also due to less favorable product mix.

CONSOLIDATED OPERATING EXPENSES

	2018	Change	2017	% of Revenues	
				2018	2017
Research and development	\$ 11,851	\$ 709	\$ 11,142	14.3%	12.2%
Sales and marketing	12,083	(547)	12,630	14.6%	13.8%
General and administrative	12,355	(755)	13,110	14.9%	14.3%
Amortization of intangible assets	418	(78)	496	0.5%	0.5%
	\$ 36,707	\$ (671)	\$ 37,378	44.2%	40.9%

Research and development expenses increased by \$0.7 million from 2017 to 2018 due to investments for antenna products. In 2017, we added headcount to increase our capabilities in key vertical markets for antenna products. 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 and 56 full-time equivalent employees in research and development at December 31, 2018 and 2017, 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 decreased \$0.5 million from 2017 to 2018 due to employee headcount reductions in sales and sales support, and due lower sales commissions and lower marketing expenses.

We had 42 and 49 full-time equivalent employees in sales and marketing at December 31, 2018 and 2017, 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 decreased \$0.8 million from 2017 to 2018. The decrease was primarily because 2017 included \$1.0 million of incentive compensation expense and \$0.3 million of expense related to the CEO transition that were not included in 2018, offsetting expense of \$0.5 million related to executive separations in 2018.

We had 33 and 37 full-time equivalent employees in general and administrative functions at December 31, 2018 and 2017, respectively.

Amortization expense within operating expenses was approximately \$0.4 million and \$0.5 million for the years ended December 31, 2018 and 2017, respectively. Amortization expense decreased by approximately \$0.1 million in 2018 compared to 2017. The decrease was attributable to certain assets being fully amortized in 2018.

OPERATING (LOSS) PROFIT

	2018	% of Revenues	2017	% of Revenues
Total	\$ (5,626)	-6.8%	\$ 1,433	1.6%

Total operating income decreased \$7.1 million for the year ended December 31, 2018 compared to 2017 primarily due to the gross margin impact of lower revenues, partially offset by lower operating expenses of \$0.7 million.

OTHER INCOME, NET

	2018	2017
Interest income	\$ 623	\$ 270
Foreign exchange losses	(77)	(139)
Other, net	18	(26)
	<u>\$ 564</u>	<u>\$ 105</u>
Percentage of revenues	0.7%	0.1%

Other income, net consists of interest income, foreign exchange gains and losses, and interest expense.

For the year ended December 31, 2018, interest income increased by \$0.4 million due to higher average investment balances and higher average interest rates. Foreign exchange losses were due to fluctuation of the Chinese Yuan to the U.S. Dollar and due to the realization of foreign exchange losses related to the British Pound.

EXPENSE (BENEFIT) FOR INCOME TAXES

	2018	2017
Expense (benefit) for income taxes	\$ 7,827	\$ (2,471)
Effective tax rate	-154.6%	-160.7%

The effective tax rate for the year ended December 31, 2018 increased from the statutory rate of 21.0% by approximately 176% primarily because we recorded a 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.

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. At December 31, 2017, the Company had a partial valuation allowance on its deferred tax assets. Our positive results in 2017, the impact of selling our Engineering Services business, and our performance versus the 2017 projections supported a partial valuation allowance. However, our losses in 2018 and the cumulative loss position for the past three years is 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 these accounting standards,

as of December 31, 2018, we recorded a valuation allowance of \$8.9 million was recorded against the net U.S. deferred tax assets and a valuation allowance of \$0.3 million has been recorded against the net China deferred tax assets. We did this in order to reduce the amount of 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 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 the Company changes its 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 our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

The effective tax rate differed from the statutory rate of 34.0% for the year ended December 31, 2017 by approximately 195% because we increased the valuation allowance for our U.S. deferred tax assets by \$8.2 million. This adjustment offset provisional income tax expense of \$5.0 million related to the remeasurement of deferred tax assets, and provisional income tax expense of \$0.6 million related to the transition tax on the accumulated unremitted foreign earnings and profits of our foreign subsidiaries ("Transition Tax"). These provisional charges were finalized with the filing of the 2017 U.S. federal income tax return with minimal changes to the provisional amounts.

At December 31, 2018, we had a full valuation allowance of \$14.5 million on our deferred tax assets. We maintain a valuation allowance due to uncertainties regarding realizability. Management evaluates the recoverability of deferred tax assets and the need for a valuation allowance and our ability to use these deferred tax assets on a regular basis. The valuation allowance at December 31, 2017 was \$5.2 million, all of which related to U.S. deferred tax assets.

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.

In response to the enactment of the Tax Act in late 2017, the U.S. Securities and Exchange Commission issued Staff Accounting Bulletin No. 118 ("SAB 118") to address situations where the accounting is incomplete for certain income tax effects of the Tax Act upon issuance of an entity's financial statements for the reporting period in which the Tax Act was enacted. Under SAB 118, we recorded provisional income tax expense related to the deemed repatriation of the accumulated unremitted earnings and profits of foreign subsidiaries, and net income tax expense associated with the remeasurement of our net deferred tax assets due to the tax rate reduction and included these amounts in our consolidated financial statements for the year ended December 31, 2017. We completed the accounting in the fourth quarter 2018 upon filing our U.S. Federal tax returns and increased 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 certain of the CFC's depreciable, tangible assets less certain interest expense items ("net deemed tangible income return"). Under U.S. GAAP, we are allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the "period cost method") or (2) factoring such amounts into our measurement of its deferred taxes (the "deferred method"). For the year ended December 31, 2018, we included the expected 2018 GILTI income tax expense under 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, 2018.

See Note 6 of the consolidated financial statements for more information on income taxes.

NET LOSS FROM DISCONTINUED OPERATIONS, NET OF INCOME TAX BENEFIT

	<u>2018</u>	<u>2017</u>
Net loss from discontinued operations, net of tax benefit	\$ 0	\$ (187)

During the quarter ended June 30, 2017, we approved a plan to sell Engineering Services business and shift our focus toward highly engineered RF products. We sold the business to Gabe's July 31, 2017. See Note 3 to the consolidated financial statements for information related to discontinued operations. The results for our services business are reported as discontinued operations for the year ended December 31, 2017.

The net income from discontinued operations for the year ended December 31, 2017 includes operating losses for Engineering Services and a net gain on sale of \$0.5 million.

LIQUIDITY AND CAPITAL RESOURCES

	Years Ended December 31,	
	2018	2017
Net (loss) income from continuing operations	\$ (12,889)	\$ 4,009
Changes for depreciation, amortization, stock-based compensation, and other non-cash items	15,211	4,027
Changes in operating assets and liabilities	1,621	1,733
Net cash provided by operating activities	\$ 3,943	\$ 9,769
Net cash used in investing activities	\$ (1,110)	\$ (16,708)
Net cash used in financing activities	\$ (4,032)	\$ (3,126)
Net cash flows provided by discontinued operations	\$ 0	\$ 639

	December 31,	December 31,
	2018	2017
Cash and cash equivalents at the end of the year	\$ 4,329	\$ 5,559
Short-term investments at the end of the year	\$ 30,870	\$ 32,499
Working capital at the end of the year	\$ 53,443	\$ 58,091

Liquidity and Capital Resources Overview

At December 31, 2018, our cash, cash equivalents, and investments were approximately \$35.2 million, and we had working capital of approximately \$53.4 million. Our primary source of liquidity is cash provided by operations, with short term swings in liquidity supported by a significant balance of cash and 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. During the two years ended December 31, 2018 and 2017 our balance sheet provided operating funds. In periods of expansion, we will 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, 2018 was approximately 3.3% 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 investment vehicles. 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 merger and acquisition activity to continue in the future.

Within financing activities, we have historically generated funds from the exercise of stock options and proceeds from the issuance of common stock through the Employee Stock Purchase Plan ("ESPP"), and we have historically used funds to repurchase shares of our common stock through our share repurchase programs and through quarterly dividends. Whether this activity results in our being a net user of funds versus a net generator of funds is largely dependent on our stock price during any given year.

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

Operating Activities:

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 due to there was no liability related to the 2018 Short-Term Incentive Plan. The liability at December 31, 2017 was \$1.7 million.

We generated \$9.8 million of funds from operating activities during the year ended December 31, 2017. Adjustments related to non-cash items within net income were \$4.0 million for the year ended December 31, 2017, as amortization and depreciation was \$3.7 million, and stock-based compensation was \$3.0 million offset by a \$2.6 million adjustment to the deferred tax provision. Within the balance sheet, we generated cash of \$2.0 million from the reduction of inventories and \$0.8 million from the reduction of accounts receivable, but we used \$1.0 million from the reduction of accounts payables. The inventory decrease was due to improvements in supply chain management, improved processes for forecasting and reductions in minimum order quantities for purchases. Accounts receivable generated cash primarily because of the sale of Engineering Services. We had accounts receivable of \$3.1 million at December 31, 2017 related to Engineering Services. Accounts payables declined primarily due to the reduction in inventories.

Investing Activities:

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.

Our investing activities used \$16.7 million of cash during the year ended December 31, 2017. Redemptions and maturities of our short-term investments during the year provided \$35.0 million in cash and we rotated \$49.0 million of cash into new short-term investments. We used \$2.7 million of cash for capital expenditures during the year ended December 31, 2017. Capital expenditures during 2017 include \$0.6 million for a new IP phone and communications system.

Financing Activities:

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.

We used \$3.1 million of cash for financing activities during the year ended December 31, 2017. We used \$3.7 million for cash dividends paid quarterly during 2017. We received \$2.0 million in proceeds from the purchase of shares through our ESPP and due to stock option exercises. We used \$1.3 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, 2018 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
Operating leases:						
Facility	(a)	\$ 2,067	\$ 1,135	\$ 688	\$ 217	\$ 27
Equipment	(b)	186	41	122	23	0
Purchase obligations	(c)	10,750	10,750	0	0	0
Total		\$ 13,003	\$ 11,926	\$ 810	\$ 240	\$ 27

- (a) Future payments for the lease of office and production facilities.
- (b) Future payments for the 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.

As of December 31, 2018, we had obligations through 2022 for capital leases of \$237 related to office equipment. See Note 7 of the consolidated financial statements for more information on capital leases.

We have a liability related to uncertain positions for income taxes of \$0.7 million at December 31, 2018. We do not know when this obligation will be paid.

U.S. Tariffs

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, including certain PCTEL antenna and antenna components, and there are additional tariffs under review. In addition to impacting the products sent to our U.S.-based customers from our facility in Tianjin, China, these tariffs pertain to certain components and materials sent from our Tianjin facility to our Bloomingdale, Illinois facility for final assembly. The cost of these tariffs has necessitated price increases on our antenna products. The impact of the tariffs on the Company's future revenue and profitability is uncertain. Furthermore, political uncertainty surrounding international trade disputes and protectionist measures may have a negative effect on customer confidence and spending. The Company will continue to monitor and adjust prices as necessary and as market conditions permit. We do not believe these price increases have resulted in a significant loss of revenue.

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 and 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 and measurement products, we satisfy our performance obligations generally at the time of shipment, or upon delivery based on the contractual terms with its customers. For products shipped on consignment, we recognize revenue upon delivery from the consignment location. For its test and 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. For products shipped on consignment, we recognize revenue upon customer delivery from the consignment location. We allow our major antenna product distributors to return a limited amount 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 the lower of cost or market 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. We amortize stock-based compensation expense over the requisite service period, and we record forfeitures as incurred. Stock-based compensation expense and disclosures are 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 market place 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 international subsidiaries located in Tianjin, and branch office thereof in Beijing, China and a representative office located in Hong Kong. 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.

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, provides for a Transition Tax on the accumulated unremitted foreign earnings and profits of our foreign subsidiaries, a reduction of the U.S. federal corporate income tax rate from 34% to 21%, and an indefinite carryforward for net operating losses incurred in 2018 and future periods subject to an 80% annual limitation against future income.

In response to the enactment of the Tax Act in late 2017, the U.S. Securities and Exchange Commission issued SAB 118 to address situations where the accounting is incomplete for certain income tax effects of the Tax Act upon issuance of an entity's financial statements for the reporting period in which the Tax Act was enacted. Under SAB 118, a company may record provisional amounts during a measurement period for specific income tax effects of the Tax Act for which the accounting is incomplete, but a reasonable estimate can be determined, and when unable to determine a reasonable estimate for any income tax effects, report provisional amounts in the first reporting period in which a reasonable estimate can be determined. We recorded provisional amounts during the fourth quarter 2017 and finalized the adjustments in the fourth quarter 2018 upon completion of our U.S. income tax returns.

In the fourth quarter 2017 we recorded provisional income tax expense of \$0.6 million related to the deemed repatriation of the accumulated unremitted earnings and profits of foreign subsidiaries, and provisional income tax expense of \$5.0 million associated with the remeasurement of our net deferred tax assets due to the reduction in the U.S. corporate tax rate, and we included these amounts in our consolidated financial statements for the year ended December 31, 2017. In the fourth quarter 2018, we recorded an increase of \$0.1 million for the Transition Tax.

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 first perform a qualitative assessment to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value, including goodwill. If our qualitative assessment is indicative of possible impairment, then a two-step quantitative fair value assessment is performed at the reporting unit level. In the first step, the fair value of each reporting unit is compared with its carrying value. If the fair value exceeds the carrying value, then goodwill is not impaired, and no further testing is performed. The second step 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. 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

In January 2017, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2017-04, Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment ("Topic 350"). Topic 350 eliminates Step 2 as part of the goodwill impairment test. The amount of the impairment charge to be recognized would now be the amount by which the carrying value exceeds the reporting unit's fair value. The loss to be recognized cannot exceed the amount of goodwill allocated to that reporting unit. We early adopted this guidance on January 1, 2017 because its annual impairment test is performed after January 1, 2017. The adoption of Topic 350 did not have an impact on our consolidated financial statements because there was no impairment identified from our step 1 analysis at the measurement date of October 1, 2017.

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. We 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 August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments ("Topic 230"). Topic 230 addresses the following eight specific cash flow issues: Debt prepayment or debt extinguishment costs; settlement of zero-coupon debt instruments or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing; contingent consideration payments made after a business combination; proceeds from the settlement of insurance claims; proceeds from the settlement of corporate-owned life insurance policies (including bank-owned life insurance policies); distributions received from equity method investees; beneficial interests in securitization transactions; and separately identifiable cash flows and application of the predominance principle. This guidance was effective for us on January 1, 2018. Adoption of Topic 230 did not have an impact on our consolidated financial statements.

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 amendments will be effective for us on January 1, 2020. We are currently evaluating this guidance and the impact it will have on our consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-09, Compensation - Stock Compensation ("Topic 718"): Improvements to Employee Share-Based Payment Accounting. Topic 718 affects all entities that issue share-based payment awards to their employees. Topic 718 simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows, including recognizing all excess tax benefits and tax deficiencies as income tax expense or benefit in the income statement rather than in additional paid-in capital. We adopted Topic 718 in the first quarter of 2017. Upon adoption, we recognized deferred tax assets of \$0.6M for all excess tax benefits that had not been previously recognized. We also elected to recognize forfeitures as incurred. We recorded an adjustment of \$0.1 million to deferred tax assets for estimated forfeitures previously recorded. These adjustments were recorded through a cumulative-effect adjustment to retained earnings of approximately \$0.5 million and an adjustment to the valuation allowance for \$0.2 million. We also reclassified our payments for withholding tax on stock-based compensation from operating activities to financing activities in the consolidated statements of cash flows for the years ended December 31, 2017.

In February 2016, the FASB issued 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. Topic 842 also provides clarifications surrounding the presentation of the effects of leases in the income statement and statement of cash flows. This guidance was effective for us on January 1, 2019. We expect to record a right of use asset and corresponding lease liability in the range of \$1.4 to \$1.8 million upon adoption of Topic 842. We do not believe the standard will materially impact our statement of operations. We updated our controls to identify and classify leases in accordance with Topic 842. As a practical expedient, short-term agreements of less than 12 months will be excluded from recognition under the Topic 842 but will be logged and monitored for disclosure purposes.

In July 2015, the FASB issued ASU No. 2015-11, Simplifying the Measurement of Inventory. ASU 2015-11 simplifies the subsequent measurement of inventory by requiring inventory to be measured at the lower of cost and net realizable value. ASU 2015-11 applies only to inventories for which cost is determined by methods other than last-in first-out and the retail inventory method. We adopted this guidance on January 1, 2017. The adoption of this ASU did not have an impact on our consolidated financial statements.

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. We adopted Topic 606 on January 1, 2018 using the modified retrospective approach. The majority of our revenue is recognized on a "point-in-time" basis and a nominal amount of our revenue is recognized "over time" under the new standard, which is consistent with our revenue recognition policy under the previous guidance.

See Note 14 for information on Revenue from Contracts with Customers.

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, 2018. 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 2018, approximately 10% 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 \$0.8 million of cash in foreign bank accounts at December 31, 2018. As of December 31, 2018, we had no intention of repatriating the \$.06M of 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. We expect to repatriate its remaining cash of \$0.2 million during the first quarter of 2019. We do not expect the foreign currency exchange rate related to the repatriation of these funds to have a material impact on the financial statements.

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, 2018 and 2017.

Trade Accounts Receivable	As of December 31,	
	2018	2017
Customer A	13%	12%

Item 8: Financial Statements and Supplementary Data

**PCTEL, INC.
INDEX TO THE CONSOLIDATED FINANCIAL STATEMENTS**

	<u>Page</u>
Reports of Independent Registered Public Accounting Firm	25
Consolidated Balance Sheets as of December 31, 2018 and 2017	27
Consolidated Statements of Operations for the years December 31, 2018, and 2017	28
Consolidated Statements of Comprehensive (Loss) Income for the years ended December 31, 2018, and 2017	29
Consolidated Statements of Stockholders' Equity for the years ended December 31, 2018, and 2017	30
Consolidated Statements of Cash Flows for the years ended December 31, 2018, and 2017	31
Notes to the Consolidated Financial Statements	32

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, 2018 and 2017, the related consolidated statements of operations, comprehensive (loss) income, 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, 2018 and 2017, 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, 2018, 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 18, 2019 expressed an unqualified opinion.

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 18, 2019

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, 2018, 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, 2018, 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, 2018, and our report dated March 18, 2019, 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 18, 2019

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

	December 31, 2018	December 31, 2017
ASSETS		
Cash and cash equivalents	\$ 4,329	\$ 5,559
Short-term investment securities	30,870	32,499
Accounts receivable, net of allowances of \$63 and \$319 at December 31, 2018 and December 31, 2017, respectively	15,864	18,624
Inventories, net	12,848	12,756
Prepaid expenses and other assets	1,416	1,605
Total current assets	65,327	71,043
Property and equipment, net	12,138	12,369
Goodwill	3,332	3,332
Intangible assets, net	1,029	2,113
Deferred tax assets, net	0	7,734
Other noncurrent assets	45	72
TOTAL ASSETS	\$ 81,871	\$ 96,663
LIABILITIES AND STOCKHOLDERS' EQUITY		
Accounts payable	\$ 6,083	\$ 5,471
Accrued liabilities	5,801	7,481
Total current liabilities	11,884	12,952
Long-term liabilities	381	392
Total liabilities	12,265	13,344
Stockholders' equity:		
Common stock, \$0.001 par value, 100,000,000 shares authorized, 18,271,249 and 17,806,792 shares issued and outstanding at December 31, 2018 and December 31, 2017, respectively	18	18
Additional paid-in capital	133,859	134,505
Accumulated deficit	(64,055)	(51,258)
Accumulated other comprehensive (loss) income	(216)	54
Total stockholders' equity	69,606	83,319
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 81,871	\$ 96,663

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,	
	2018	2017
REVENUES	\$ 82,979	\$ 91,437
COST OF REVENUES	51,898	52,626
GROSS PROFIT	<u>31,081</u>	<u>38,811</u>
OPERATING EXPENSES:		
Research and development	11,851	11,142
Sales and marketing	12,083	12,630
General and administrative	12,355	13,110
Amortization of intangible assets	418	496
Total operating expenses	<u>36,707</u>	<u>37,378</u>
OPERATING (LOSS) INCOME	(5,626)	1,433
Other income, net	564	105
(LOSS) INCOME BEFORE INCOME TAXES	(5,062)	1,538
Expense (benefit) for income taxes	7,827	(2,471)
NET (LOSS) INCOME FROM CONTINUING OPERATIONS	(12,889)	4,009
NET LOSS FROM DISCONTINUED OPERATIONS, NET OF INCOME TAX BENEFIT	0	(187)
NET (LOSS) INCOME	<u>\$ (12,889)</u>	<u>\$ 3,822</u>
Net (Loss) Income per Share from Continuing Operations:		
Basic	\$ (0.75)	\$ 0.24
Diluted	\$ (0.75)	\$ 0.24
Net Loss per Share from Discontinued Operations:		
Basic	\$ 0.00	\$ (0.01)
Diluted	\$ 0.00	\$ (0.01)
Net (Loss) Income per Share:		
Basic	\$ (0.75)	\$ 0.23
Diluted	\$ (0.75)	\$ 0.23
Weighted Average Shares:		
Basic	17,186	16,626
Diluted	17,186	16,913
Cash dividend per share	\$ 0.22	\$ 0.21

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

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

	<u>Years Ended December 31,</u>	
	<u>2018</u>	<u>2017</u>
NET (LOSS) INCOME	\$ (12,889)	\$ 3,822
OTHER COMPREHENSIVE (LOSS) INCOME		
Foreign currency translation adjustments	(270)	436
COMPREHENSIVE (LOSS) INCOME	<u>\$ (13,159)</u>	<u>\$ 4,258</u>

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, 2016	\$ 17	\$ 134,480	\$ (55,590)	\$ (382)	\$ 78,525
Cumulative-effect adjustment resulting from adoption of ASU 2016-09			510		510
BALANCE at JANUARY 1, 2017	\$ 17	\$ 134,480	\$ (55,080)	\$ (382)	\$ 79,035
Stock-based compensation expense	1	3,053	0	0	3,054
Issuance of shares for stock purchase and option plans	0	1,975	0	0	1,975
Cancellation of shares for payment of withholding tax	0	(1,298)	0	0	(1,298)
Dividends paid	0	(3,705)	0	0	(3,705)
Net income	0	0	3,822	0	3,822
Change in cumulative translation adjustment, net	0	0	0	436	436
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

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,	
	2018	2017
Operating Activities:		
Net (loss) income from continuing operations	\$ (12,889)	\$ 4,009
Adjustments to reconcile net (loss) income to net cash provided by operating activities:		
Depreciation	2,806	2,567
Intangible asset amortization	1,084	1,162
Stock-based compensation	3,261	3,005
Loss on disposal/sale of property and equipment	19	18
Restructuring costs	(39)	(78)
Bad debt provision	265	55
Deferred tax provision	7,817	(2,647)
Changes in operating assets and liabilities, net of acquisitions:		
Accounts receivable	2,362	798
Inventories	(336)	1,970
Prepaid expenses and other assets	198	(121)
Accounts payable	1,095	(1,037)
Income taxes payable	(3)	(199)
Other accrued liabilities	(1,657)	182
Deferred revenue	(40)	85
Net cash provided by operating activities	<u>3,943</u>	<u>9,769</u>
Investing Activities:		
Capital expenditures	(2,754)	(2,666)
Proceeds from disposal of property and equipment	15	1
Purchase of investments	(44,591)	(49,009)
Redemptions/maturities of short-term investments	46,220	34,966
Net cash used in finance activities	<u>(1,110)</u>	<u>(16,708)</u>
Financing Activities:		
Proceeds from issuance of common stock	686	1,975
Payment of withholding tax on stock-based compensation	(578)	(1,298)
Principle payments on capital leases	(125)	(98)
Cash dividends	(4,015)	(3,705)
Net cash used in financing activities	<u>(4,032)</u>	<u>(3,126)</u>
Cash flows from discontinued operations:		
Net cash used in operating activities	0	(795)
Net cash provided by investing activities	0	1,434
Net cash flows provided by discontinued operations:	<u>0</u>	<u>639</u>
Net decrease in cash and cash equivalents	(1,199)	(9,426)
Effect of exchange rate changes on cash	(31)	130
Cash and cash equivalents, beginning of year	5,559	14,855
Cash and Cash Equivalents, End of Year	<u>\$ 4,329</u>	<u>\$ 5,559</u>
Other information:		
Cash paid for income taxes	\$ 41	\$ 172
Cash paid for interest	\$ 11	\$ 12
Non-cash investing and financing information:		
Decreases to additional paid-in capital related to restricted stock	\$ (189)	\$ (1,339)
Issuance of restricted common stock, net of cancellations	\$ 2,276	\$ 196
Purchase of assets under capital leases	\$ 47	\$ 149

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

PCTEL, INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
For the Year Ended: December 31, 2018
(in thousands, except share data and numbers disclosed in millions)

1. Organization and Summary of Significant Accounting Policies

Nature of Operations

PCTEL, Inc. (“PCTEL”, the “Company”, “we”, “ours”, and “us”) delivers Performance Critical TELEcom technology solutions to the wireless industry. PCTEL is a leading global supplier of wireless network antenna and testing solutions. PCTEL designs and manufactures precision antennas and provides test and measurement products that improve the performance of wireless networks globally. 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”). PCTEL test tools improve the performance of wireless networks globally. Mobile operators, neutral hosts, and equipment manufacturers rely on PCTEL 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 and performance and customer service, and it avoids commodity markets. Our 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, Pulse, and Taoglas.

Test and Measurement Products

PCTEL provides RF test and measurement tools that improve the performance of wireless networks globally, with a focus on LTE, public safety, and emerging 5G technologies. Mobile operators, neutral hosts, and equipment manufacturers rely on PCTEL 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 and 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, Digital Receiver Technology, and Rohde and Schwarz.

Segment Reporting

Effective August 2018, the Company consolidated its organizational structure to drive growth and address the convergence in the IIoT, public safety, and 4G infrastructure markets and the emergence of new technologies such as 5G (the “Reorganization”). The Company’s operations, engineering, business development, sales and marketing, and operational general and administrative functions were consolidated into a single enterprise-wide organization. As a result of the Reorganization that occurred in the third quarter 2018, the Company’s Chief Executive Officer, as the chief operating decision maker (“CODM”) began assessing operating profits and identified assets at the enterprise level for resource allocations. In connection with the Reorganization, the Board of Directors appointed a Chief Operating Officer who maintains regular contact with the CODM to discuss operating activities, financial results, forecasts, and plans for the Company’s businesses. All operating profit and cash flows are measured and managed at the enterprise level.

Until the Reorganization, PCTEL operated in two segments for reporting purposes, Connected Solutions and RF Solutions. The CODM assessed operating profits and identified assets for the Connected Solutions and RF Solutions segments for resource allocations. Each segment had its own general manager as well as its own engineering, business development, sales and marketing, and operational general and administrative functions.

Because the Reorganization occurred during the third quarter 2018, this Form 10-K does not include segment reporting information; however, we have included revenues and gross profit for the two major product lines (antenna products and test and measurement products) because each product line has a significantly different gross profit margin profile. In order to understand our financial results, it is necessary to understand the impact on gross profit margin of the revenue mix between them.

During the quarter ended June 30, 2017, the Company approved a plan to sell its Network Engineering Service business (“Engineering Services”) and shift its focus toward research and development driven RF products. On July 31, 2017, the Company sold substantially all of the assets of the Company’s Engineering Services business to Gabe’s Construction Co., Inc. (“Gabe’s”) for a purchase price of \$1.45 million. The Engineering Services business provided design, testing, commissioning, optimization, and consulting services for cellular, Wi-Fi and public safety networks as a reporting unit within the test and measurement product line. The Company classified assets of the Engineering Services reporting unit as held for sale at December 31, 2017 and reported the results of its operations as discontinued operations for the year ended December 31, 2017.

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. Net foreign exchange losses resulting from foreign currency transactions included in other income, net was \$77, and \$139 in the years ended December 31, 2018, and 2017, respectively.

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 investments consist of the following:

	December 31, 2018	December 31, 2017
Cash	\$ 1,485	\$ 3,785
Cash equivalents	2,844	1,774
Short-term investments	30,870	32,499
	<u>\$ 35,199</u>	<u>\$ 38,058</u>

Cash and Cash Equivalents

At December 31, 2018 and 2017, cash and cash equivalents included bank balances and investments with original maturities less than 90 days. At December 31, 2018 and 2017, 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.

The Company had \$0.8 million and \$1.2 million of cash and cash equivalents in foreign bank accounts at December 31, 2018 and at December 31, 2017, respectively. The Company's cash in its foreign bank accounts is not insured. Within the cash in foreign bank accounts, the Company had cash of \$0.6 million and \$1.0 million in China bank accounts at December 31, 2018 and December 31, 2017, respectively. As of December 31, 2018, 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. The Company completed the closure of its Israel subsidiary during the fourth quarter 2018. The Company expects to repatriate its remaining cash of \$0.2 million during the first quarter of 2019. The Company does not expect the foreign currency exchange rate related to the repatriation of these funds to have a material impact on the financial statements.

Investments

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. At December 31, 2017, the Company's short-term investments consisted of pre-refunded municipal bonds, U.S. government agency bonds, AA or higher rated corporate bonds and certificates of deposit. All of the investments at December 31, 2018 and 2017 were classified as held-to-maturity.

The Company had investments of pre-refunded municipal bonds at December 31, 2017 but none at December 31, 2018. The income and principal from the pre-refunded municipal bonds were secured by an irrevocable trust of U.S. Treasury securities. The bonds that had original maturities greater than 90 days were recorded at the purchase price and carried at amortized cost. Approximately 8% of the Company's municipal bonds were protected by bond default insurance.

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

	December 31, 2018				December 31, 2017			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash equivalents:								
Corporate bonds	\$ 0	\$ 1,156	\$ 0	\$ 1,156	\$ 0	\$ 1,350	\$ 0	\$ 1,350
US government agency bonds	0	0	0	0	0	249	0	249
Money market funds	1,688	0	0	1,688	175	0	0	175
Total Cash Equivalents	<u>\$ 1,688</u>	<u>\$ 1,156</u>	<u>\$ 0</u>	<u>\$ 2,844</u>	<u>\$ 175</u>	<u>\$ 1,599</u>	<u>\$ 0</u>	<u>\$ 1,774</u>
Investments:								
Corporate bonds	0	21,583	0	21,583	0	18,463	0	18,463
Pre-refunded municipal bonds	0	0	0	0	0	2,133	0	2,133
US government agency bonds	0	5,671	0	5,671	0	4,457	0	4,457
Certificates of deposit	3,616	0	0	3,616	7,446	0	0	7,446
Total Investments	<u>\$ 3,616</u>	<u>\$ 27,254</u>	<u>\$ 0</u>	<u>\$ 30,870</u>	<u>\$ 7,446</u>	<u>\$ 25,053</u>	<u>\$ 0</u>	<u>\$ 32,499</u>
Cash equivalents and Investments - book value	<u>\$ 5,304</u>	<u>\$ 28,410</u>	<u>\$ 0</u>	<u>\$ 33,714</u>	<u>\$ 7,621</u>	<u>\$ 26,652</u>	<u>\$ 0</u>	<u>\$ 34,273</u>
Cash equivalents and Investments - fair value	<u>\$ 5,304</u>	<u>\$ 28,389</u>	<u>\$ 0</u>	<u>\$ 33,693</u>	<u>\$ 7,622</u>	<u>\$ 26,617</u>	<u>\$ 0</u>	<u>\$ 34,239</u>

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. The fair values in the table above reflect net unrealized losses of \$21 and \$34 at December 31, 2018 and December 31, 2017, 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 and \$0.3 million at December 31, 2018 and 2017, 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, 2018 and 2017 were composed of raw materials, sub-assemblies, finished goods and work-in-process. The Company had consigned inventory of \$0.9 million and \$0.5 million at December 31, 2018 and 2017, 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 \$3.3 million and \$3.0 million as of December 31, 2018 and 2017, respectively.

Inventories consisted of the following:

	December 31, 2018	December 31, 2017
Raw materials	\$ 7,023	\$ 6,849
Work in process	1,388	962
Finished goods	4,437	4,945
Inventories, net	<u>\$ 12,848</u>	<u>\$ 12,756</u>

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 computers 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, 2018	December 31, 2017
Building	\$ 6,351	\$ 6,351
Computers and office equipment	10,963	10,873
Manufacturing and test equipment	13,573	13,012
Furniture and fixtures	1,318	1,288
Leasehold improvements	1,529	1,444
Motor vehicles	20	20
Total property and equipment	33,754	32,988
Less: Accumulated depreciation and amortization	(23,386)	(22,389)
Land	1,770	1,770
Property and equipment, net	<u>\$ 12,138</u>	<u>\$ 12,369</u>

Depreciation and amortization expense were approximately \$2.8 million and \$2.6 million for the years ended December 31, 2018 and 2017, respectively. Amortization for capital leases is included in depreciation and amortization expense. See Note 7 for information related to capital leases.

Liabilities

Accrued liabilities consisted of the following:

	December 31, 2018	December 31, 2017
Payroll, bonuses, and other employee benefits	\$ 1,409	\$ 2,780
Inventory receipts	1,396	1,730
Paid time off	936	1,011
Professional fees and contractors	346	155
Employee stock purchase plan	343	314
Warranties	339	382
Income and sales taxes	186	243
Customer refunds for estimated returns	154	197
Deferred revenues	149	189
Real estate taxes	148	148
Short-term obligations under capital leases	91	97
Other	304	235
Total	<u>\$ 5,801</u>	<u>\$ 7,481</u>

Long-term liabilities consisted of the following:

	December 31, 2018	December 31, 2017
Capital leases	\$ 132	\$ 180
Deferred rent	87	89
Other	162	123
Total	<u>\$ 381</u>	<u>\$ 392</u>

Revenue Recognition

The Company sells antenna product and test and 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 and 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 and 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 \$0.1 million during the years ended December 31, 2018, and 2017.

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.

In accordance with the Tax Act, the Company recorded provisional income tax expense of \$0.6 million related to the deemed repatriation of the accumulated unremitted earnings and profits of foreign subsidiaries, and provisional income tax expense of \$5.0 million associated with the remeasurement of its net deferred tax assets due to the reduction in the U.S. corporate income tax rate, and included these amounts in its consolidated financial statements for the year ended December 31, 2017. The Company completed the accounting in the fourth quarter 2018 upon filing the Company's U.S. Federal tax returns and increased the Transition Tax by \$0.1 million.

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. As a result of the Company's cumulative three-year

loss, the finite life for federal net operating losses generated through December 31, 2017, and the finite life of state net operating losses, the Company had a full valuation allowance of \$14.5 million at December 31, 2018. See Note 6 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 test, the Company first performs a qualitative assessment to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value, including goodwill. If the qualitative assessment is indicative of possible impairment, then a two-step quantitative fair value assessment is performed at the reporting unit level. In the first step, the fair value of each reporting unit is compared with its carrying value. If the fair value exceeds the carrying value, then goodwill is not impaired, and no further testing is performed. The second step 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, 2018 related to its goodwill of \$3.3 million. Due to the Company's Reorganization in the third quarter 2018, its operations, engineering, business development, sales and marketing, and operational general and administrative functions were consolidated into a single enterprise-wide organization. Since there are no longer reportable segments, the Company has not disclosed segment information in this Form-10K for the year ended December 31, 2018. However, the Company has discrete financial information necessary to perform goodwill impairment testing for the reporting unit under the accounting guidance. The goodwill is not related to the whole Company. The Company evaluated the goodwill based on the cash flows for the test and measurement product line. The cash flows for test and measurement product line were only prepared for testing goodwill and were not reviewed by the Company's CODM. The revenues and gross margins were specifically identified, and the operating expenses were a combination of direct expenses and allocated expenses. The Company performed both a qualitative analysis of goodwill and the step one 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 date because the fair value of the reporting unit exceeded its carrying value by a significant margin.

The Company performed its annual goodwill test at October 31, 2017 for the goodwill of \$3.3 million. The Company performed both a qualitative analysis of goodwill and the step one quantitative analysis. There was no triggering event 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 date 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 for continuing operations during the years ended December 31, 2018, and 2017.

Recent Accounting Pronouncements

In January 2017, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2017-04, Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment (“Topic 350”). Topic 350 eliminates Step 2 as part of the goodwill impairment test. The amount of the impairment charge to be recognized would now be the amount by which the carrying value exceeds the reporting unit’s fair value. The loss to be recognized cannot exceed the amount of goodwill allocated to that reporting unit. The Company early adopted this guidance on January 1, 2017 because its annual impairment test is performed after January 1, 2017.

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 August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of certain cash receipts and cash payments (“Topic 230”). Topic 230 addresses the following eight specific cash flow issues: Debt prepayment or debt extinguishment costs; settlement of zero-coupon debt instruments or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing; contingent consideration payments made after a business combination; proceeds from the settlement of insurance claims; proceeds from the settlement of corporate-owned life insurance policies (including bank-owned life insurance policies); distributions received from equity method investees; beneficial interests in securitization transactions; and separately identifiable cash flows and application of the predominance principle. This guidance was effective for the Company on January 1, 2018. Adoption of this guidance did not have an impact on the Company’s consolidated financial statements.

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 amendments will be effective for the Company on January 1, 2020. The Company is currently evaluating this guidance and the impact it will have on its consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting (“Topic 718”). Topic 718 affects all entities that issue share-based payment awards to their employees. Topic 718 simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows, including recognizing all excess tax benefits and tax deficiencies as income tax expense or benefit in the income statement rather than in additional paid-in capital. The Company adopted Topic 718 in the first quarter of 2017. Upon adoption, the Company recognized deferred tax assets of \$0.6 million for all excess tax benefits that had not been previously recognized. The Company also elected to recognize forfeitures as incurred. The Company recorded an adjustment of \$0.1 million to deferred tax assets for estimated forfeitures previously recorded. These adjustments were recorded through a cumulative-effect adjustment to retained earnings of approximately \$0.5 million and an adjustment to the valuation allowance for \$0.2 million. The Company also reclassified its payments for withholding tax on stock-based compensation from operating activities to financing activities in the consolidated statements of cash flows for the years ended December 31, 2017.

In February 2016, the FASB issued 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. Topic 842 also provides clarifications surrounding the presentation of the effects of leases in the income statement and statement of cash flows. This guidance will be effective for the Company on January 1, 2019. The Company expects to record a right of use asset and corresponding lease liability in the range of \$1.4 million to \$1.8 million upon adoption of Topic 842. The Company does not believe the standard will materially impact its statement of operations. In preparation for implementing Topic 842, the Company updated its controls to identify and classify leases appropriately. As a practical expedient, short-term agreements of less than 12 months will be excluded from recognition under the Topic 842 but will be logged and monitored for disclosure purposes.

In July 2015, the FASB issued ASU No. 2015-11, Simplifying the Measurement of Inventory. ASU 2015-11 simplifies the subsequent measurement of inventory by requiring inventory to be measured at the lower of cost and net realizable value. ASU 2015-11 applies only to inventories for which cost is determined by methods other than last-in first-out and the retail inventory method. The Company adopted this guidance on January 1, 2017. The adoption of this ASU did not have an impact to the Company's consolidated financial statements.

In May 2014, the FASB issued ASU 2014-09, "Revenue from Contracts with Customers" ("Topic 606") which introduces 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 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. There were no changes to retained earnings from the adoption of Topic 606.

There were no changes to retained earnings from the adoption of Topic 606. See Note 14 for information on Revenue from Contracts with Customers.

2. (Loss) Earnings per Share

The Company computes earnings per share data under two different disclosures, basic and diluted, for all periods in which 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,	
	2018	2017
Basic (Loss) Income Per Share computation:		
Numerator:		
Net (loss) net income from continuing operations	\$ (12,889)	\$ 4,009
Net loss from discontinued operations	\$ 0	\$ (187)
Net (loss) income	\$ (12,889)	\$ 3,822
Denominator:		
Common shares outstanding	17,186	16,626
Net (Loss) Income per common share - basic		
Net (loss) income from continuing operations	\$ (0.75)	\$ 0.24
Net loss from discontinued operations	\$ 0.00	\$ (0.01)
Net (loss) income	\$ (0.75)	\$ 0.23
Diluted (Loss) Income Per Share computation:		
Denominator:		
Common shares outstanding	17,186	16,626
Restricted shares subject to vesting	*	285
Common stock option grants	*	2
Total shares	17,186	16,913
(Loss) Income per common share - diluted		
Net (loss) income from continuing operations	\$ (0.75)	\$ 0.24
Net loss from discontinued operations	\$ 0.00	\$ (0.01)
Net (loss) income	\$ (0.75)	\$ 0.23

* As denoted by "*" in the table above, weighted average common stock option grants and restricted shares of 361,000 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. Discontinued Operations

During the quarter ended June 30, 2017, the Company approved a plan to sell its Engineering Services business and shift its focus towards research and development driven RF products. On July 31, 2017, the Company sold its Network Engineering Services business to Gabe's. The Company filed a Form 8-K related to the disposition on August 4, 2017.

The disposition of Engineering Services met the requirements for classification as held for sale during the quarter ended June 30, 2017 because the disposition met all the criteria outlined in the accounting guidance. Due to the significance of the results during the years ended December 31, 2016, 2015, and 2014, and because this disposition represented a strategic shift by the Company to focus on products, the disposition of Engineering Services also qualified as a discontinued operation for reporting purposes. As such, the Company reported the results of its Engineering Services business as discontinued operations beginning with the quarter ended June 30, 2017. In this annual report on Form 10-K, the results for Engineering Services are reported as discontinued operations for the year ended December 31, 2017. All the revenues and cost of revenues in discontinued operations related to services provided by the Company.

The Company sold the fixed assets and backlog of the Network Engineering Services business to Gabe's for \$1.45 million. At closing, the Company received \$1.4 million, consisting of \$1.3 million for the sale of the business and \$0.1 million related to future services. A pre-tax book gain of \$0.5 million is included in discontinued operations in the year ended December 31, 2017. The net pre-tax book gain includes proceeds from the sale of assets minus the book value of the assets disposed as well as severance and related payroll benefits for terminated employees. The book value of the assets was \$0.6 million at the date of closing. On August 1, 2017, the Company terminated 25 employees, and Gabe's hired 11 of these employees. The severance and related benefits for the terminated

employees who were not subsequently hired by Gabe's was \$0.2 million. The income tax gain was \$0.3 million, which included the tax value of the fixed assets and the remaining tax value for intangible assets no longer being used by the Company as of the sale to Gabe's. The Company retained working capital of approximately \$0.5 million, including accounts receivable, accounts payable, and accrued liabilities. Subsequent to the sale, the Company provided transition services for billing and accounts receivable collection. The Company completed transition services as of June 30, 2018.

There was no impairment loss recorded on the long-lived assets because the fair value of the assets less cost to sell was higher than the carrying value of the assets.

The details of the discontinued operations within the Statement of Operations are as follows:

	<u>Year Ended December 31,</u>	
	<u>2017</u>	
Revenues	\$	3,725
Cost of revenues		3,974
Gross profit		(249)
Operating expenses:		
Sales and marketing		400
General and administrative		74
Amortization of intangible assets		0
Impairment of intangible assets		0
Restructuring expenses		19
Total operating expenses		493
Operating loss		(742)
Gain on sale		503
Net loss before income taxes		(239)
Benefit for income taxes		(52)
Net loss	\$	(187)

The details of the cash flows for discontinued operations are as follows:

	<u>Year Ended December 31,</u>	
	<u>2017</u>	
Cash flows from discontinued operations:		
Operating Activities:		
Net loss	\$	(187)
Gain on sale of assets		(803)
Depreciation		197
Intangible amortization		0
Impairment of intangible assets		0
Deferred tax provision		(53)
Stock compensation		49
Prepaid expenses and other assets		2
Net cash used in operating activities	\$	(795)
Investing Activities:		
Capital expenditures	\$	(16)
Proceeds from sale of assets		1,450
Net cash provided by investing activities	\$	1,434
Net cash flows from discontinued operations:	\$	639

The investing cash flows for the year ended December 31, 2017 includes the proceeds from the sale of assets to Gabe's.

The Company recognized revenue for engineering services under the completed performance method. Most engineering services were delivered in one week or less, and revenue was generally recognized when engineering reports were completed and issued to the customer. For specialized staffing, the Company recognized revenue as services are provided to the customer.

4. Goodwill and Other Intangible Assets

Goodwill

There were no changes to the goodwill of \$3.3 million during 2018 or 2017. 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, 2018			December 31, 2017		
	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	9,336	778	10,114	8,670	1,444
Trademarks and trade names	4,834	4,607	227	4,834	4,335	499
Other	2,506	2,482	24	2,506	2,336	170
	<u>\$ 34,334</u>	<u>\$ 33,305</u>	<u>\$ 1,029</u>	<u>\$ 34,334</u>	<u>\$ 32,221</u>	<u>\$ 2,113</u>

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 continuing operations, amortization expense was approximately \$1.1 million for the year ended December 31, 2018, and \$1.2 million for the year ended December 31, 2017. 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, 2018, \$0.4 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, 2017, \$0.5 million of the intangible asset amortization was included in operating expenses and \$0.7 million was included in cost of goods revenues.

There was no amortization expense in discontinued operations for the year ended December 31, 2018 or December 31, 2017.

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. The Company's amortization expense over the next three years is as follows:

Fiscal Year	Amount
2019	\$ 885
2020	\$ 144

5. Restructuring

The following table summarizes the Company's restructuring accrual activity for the years ended December 31, 2018, and 2017:

	Severance	Lease Terminations	Total
Balance at January 1, 2017	\$ 6	\$ 190	\$ 196
Restructuring expense	(1)	20	19
Payments/charges	(5)	(94)	(99)
Balance at December 31, 2017	0	116	116
Payments/charges	0	(39)	(39)
Balance at December 31, 2018	<u>\$ 0</u>	<u>\$ 77</u>	<u>\$ 77</u>

There were no expenses reported as restructuring in 2018. The restructuring expense for the year ended December 31, 2017 is included in the net loss from discontinued operations.

The restructuring liability is recorded on the balance sheet at December 31, 2018 and 2017 as follows:

	December 31, 2018	December 31, 2017
Accrued liabilities	\$ 33	\$ 35
Long-term liabilities	44	81
	<u>\$ 77</u>	<u>\$ 116</u>

Discontinued Operations

During the first quarter 2016, the Company reduced headcount related to Engineering Services and exited from its Colorado office in order to consolidate facility space. The Company signed a sublease for the office space in the second quarter 2017 and adjusted the net amount due for the lease. In July 2017, the Engineering Services business was sold to Gabe's Construction and the activity related to Engineering Services is reported as discontinued operations. The obligation for the Colorado lease was retained by the Company. See Note 3 for additional information related to discontinued operations.

The following table summarizes the minimum lease payments and sublease payments under the lease agreements for the Colorado office:

Year	Lease Payments	Sublease Payments
2019	122	88
2020	93	59
Total	<u>\$ 215</u>	<u>\$ 147</u>

6. Income Taxes

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

	Years Ended December 31,	
	2018	2017
Domestic	\$ (5,033)	\$ 917
Foreign	(29)	621
	<u>\$ (5,062)</u>	<u>\$ 1,538</u>

The expense (benefit) for income taxes of continuing operations consisted of the following:

	Years Ended December 31,	
	2018	2017
Current:		
Federal	\$ 0	\$ 0
State	32	34
Foreign	(22)	142
	<u>10</u>	<u>176</u>
Deferred:		
Federal	6,337	(1,720)
State	1,333	(878)
Foreign	147	(49)
	<u>7,817</u>	<u>(2,647)</u>
Total	<u>\$ 7,827</u>	<u>\$ (2,471)</u>

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

	Years Ended December 31	
	2018	2017
Statutory federal income tax rate	21%	34%
State income tax, net of federal benefit	4%	3%
Tax effect of permanent differences	-1%	-2%
Change in valuation allowance	-182%	-535%
Foreign Income Inclusion	0%	37%
Effective state rate change to deferred tax assets	1%	-11%
Effective Federal rate change to deferred tax assets	0%	326%
Stock Compensation shortfalls	-2%	15%
Release of FIN 48 liability	0%	-8%
Foreign income taxed at different rates	0%	-6%
Tax on repatriation	0%	-7%
Research and development credits	4%	-6%
Return to provision adjustments	0%	-2%
Other	0%	1%
	<u>-155%</u>	<u>-161%</u>

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

The Company recorded an income tax benefit of \$2.5 million for the year ended December 31, 2017. The 2017 effective tax rate differed from the Federal rate of 34% because the Company decreased the valuation allowance for its U.S. deferred tax assets by \$8.2 million, offsetting the net income tax expense of \$5.0 million related to the remeasurement of net deferred tax assets, and the \$0.6 million of income tax expense related to a transition tax on the accumulated unremitted foreign earnings and profits of foreign subsidiaries ("Transition Tax"). The adjustment to the valuation allowance included \$1.4 million to reflect the new corporate tax rate of 21.0%.

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.

In response to the enactment of the Tax Act in late 2017, the U.S. Securities and Exchange Commission issued SAB 118 to address situations where the accounting is incomplete for certain income tax effects of the Tax Act upon issuance of an entity's financial statements for the reporting period in which the Tax Act was enacted. Under SAB 118, companies were allowed to record provisional amounts during a measurement period for specific income tax effects of the Tax Act for which the accounting is incomplete, but a reasonable estimate can be determined.

To determine the amount of the Transition Tax at December 31, 2017, the Company determined, in addition to other factors, the amount of post-1986 earnings and profits of relevant subsidiaries, as well as the amount of non-U.S. income taxes paid on such earnings. The Company recorded provisional income tax expense of \$0.6 million related to the deemed repatriation of the accumulated unremitted earnings and profits of the Company's foreign subsidiaries. The deemed inclusion for the Transition Tax was offset by the 2017 net operating loss included within deferred tax assets. This provisional amount was based on available information, including estimated tax earnings and profits from foreign subsidiaries. The Company increased the Transition Tax \$0.1 million in the fourth quarter 2018 upon completion of its U.S. income tax returns.

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"). Under U.S. GAAP, the Company is allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the period cost method) or (2) factoring such amounts into the Company's measurement of its deferred taxes (the deferred method). For the year ended December 31, 2018, the Company included an estimate of the expected 2018 GILTI income tax expense under 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, 2018.

For the reduction in the corporate tax rate at December 31, 2017, the Company recorded provisional income tax expense of \$5.0 million associated with the remeasurement of the Company's gross deferred tax assets and an income tax benefit of \$1.4 million associated with a remeasurement of the valuation allowance. These provisional impacts were finalized with the filing of the 2017 income tax returns with minimal impact.

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, 2018 or 2017.

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,	
	2018	2017
Deferred Tax Assets:		
Net operating loss carryforwards	\$ 5,725	\$ 3,658
Amortization	3,920	4,508
Federal, foreign, and state credits	1,812	1,627
Inventory reserves	982	949
Stock compensation	982	845
Deferred Gain	875	876
Accrued vacation	240	257
Other	235	635
Gross deferred tax assets	14,771	13,355
Valuation allowance	(14,457)	(5,234)
Net deferred tax asset	314	8,121
Deferred Tax Liabilities:		
Depreciation	(314)	(387)
Net Deferred Tax Assets	\$ 0	\$ 7,734

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 deferred tax assets consisted of domestic deferred tax assets of \$14.2 million for and foreign deferred tax assets of \$0.3 million.

At December 31, 2017, the Company had gross deferred tax assets of \$13.4 million, deferred tax liabilities of \$0.4 million, and a valuation allowance of \$5.2 million. The net deferred tax assets at December 31, 2017 consisted of domestic net deferred tax assets of \$7.6 million and foreign net deferred tax assets of \$0.1 million. The net income tax expense related to the remeasurement of the deferred tax assets consisted of income tax expense of \$5.0 million related to gross deferred tax assets and an income tax benefit of \$1.4 million related to the valuation allowance. The most significant balance within the net deferred tax assets at December 31, 2018 and 2017 relates to intangible assets acquired under purchase accounting which are amortized for tax purposes over 15 years, but for shorter periods under generally accepted accounting principles.

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 NOL's 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. losses for the cumulative three-year period ending December 31, 2018 of \$7.9 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, 2017, the Company had a partial valuation allowance on its deferred tax assets. The Company's positive results in 2017, the impact of selling its Engineering Services business, and the Company's performance versus the 2017 projections supported a partial valuation allowance. However, the Company's losses in 2018 and the cumulative loss position for the past three years, and 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, 2018, a valuation allowance of \$8.9 million was recorded against the net U.S. deferred tax assets and a valuation allowance of \$0.3 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 determination is made.

The valuation allowance at December 31, 2017 reflected an allowance on deferred tax assets related to expiring net operating losses and credits and no valuation allowance on its deferred tax assets related to timing differences. The Company's adjustment to the valuation allowance at December 31, 2017 included \$1.4 million to reflect the new corporate tax rate of 21.0%.

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,	
	2018	2017
Beginning of period	\$ 700	\$ 870
Addition related to tax positions in current year	30	13
Reversals for uncertain tax positions	0	(183)
End of period	<u>\$ 730</u>	<u>\$ 700</u>

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 2015 and subsequent periods. The Company's state tax returns remain subject to examination for 2012 and subsequent periods. The Company's foreign tax returns remain subject to examination for 2010 and subsequent periods.

Summary of Carryforwards

At December 31, 2018, the Company has a federal net operating loss carryforward of \$12.6 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 \$19.7 million that expire between 2021 and 2038. Additionally, the Company has \$1.1 million of federal research credits that expire between 2030 and 2038 and \$1.5 million of state research credits with no expiration.

Investment in Foreign Operations

In 2015, the Company provided U.S. income taxes of \$0.1 million related to the expected repatriation of earnings from its subsidiary in Israel. The Company adjusted this amount to reflect the provisional amount calculated from the Transition Tax in 2017. The Company closed this entity in 2018 and expects to repatriate the earnings in 2019. With respect to its subsidiary in China, while the Company recorded income tax related to the deemed dividend of earnings of its China subsidiary, the Company considers such earnings permanently reinvested. Upon repatriation of these earnings, the Company would be subject to local withholding taxes.

7. Commitments and Contingencies

Operating Leases

The Company has operating leases for facilities through 2025 and office equipment through 2023. The future minimum rental payments under these leases at December 31, 2018, are as follows:

Year	Amount
2019	\$ 1,176
2020	518
2021	145
2022	146
2023	131
Thereafter	137
Future minimum lease payments	<u>\$ 2,253</u>

The rent expense under leases was approximately \$1.0 million and \$0.9 million for the years ended December 31, 2018, and 2017, respectively.

Capital Leases

The Company has capital leases for office and manufacturing equipment. As of December 31, 2018, and 2017, the equipment had cost, accumulated depreciation, and a net book value as follows:

	December 31, 2018	December 31, 2017
Cost	\$ 502	\$ 453
Accumulated Depreciation	(287)	(195)
Net Book Value	<u>\$ 215</u>	<u>\$ 258</u>

The following table presents future minimum lease payments under capital leases together with the present value of the net minimum lease payments due in each year:

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	<u>\$ 223</u>

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 \$0.2 million at December 31, 2018 and 2017 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 \$0.3 million at December 31, 2018 and \$0.4 million at December 31, 2017 and is included in other accrued liabilities in the accompanying consolidated balance sheets.

	Year Ended December 31,	
	2018	2017
Beginning balance	\$ 382	\$ 394
Provisions for warranties	65	102
Consumption of reserves	(108)	(114)
Ending balance	<u>\$ 339</u>	<u>\$ 382</u>

8. Shareholders' Equity

Common Stock

The activity related to common shares outstanding for the years ended December 31 is as follows:

(share data in thousands)	2018	2017
Beginning of year	17,807	17,335
Issuance of common stock on exercise of stock options net of stock swaps	0	189
Issuance of restricted common stock and performance shares, net of cancellations	415	245
Issuance of common stock from executive bonuses	0	113
Issuance of common stock from purchase of Employee Stock Purchase Plan shares	157	140
Cancellation of stock for withholding tax for vested shares	(108)	(215)
End of Year	<u>18,271</u>	<u>17,807</u>

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, 2018, and 2017, no shares of preferred stock were issued or outstanding.

9. Stock-Based Compensation

Stock Plans

Common Stock Reserved for Future Issuance

At December 31, 2018, the Company had 2,778,502 shares of common stock that could potentially be issued under various stock-based compensation plans described in this footnote. A summary of the reserved shares of common stock for future issuance are as follows:

	December 31,	
	2018	2017
PCTEL Stock Plan	2,583,688	3,298,876
2001 Stock Plan	0	19,600
Employee Stock Purchase Plan	194,814	351,609
Total shares reserved	<u>2,778,502</u>	<u>3,670,085</u>

These amounts include the shares available for grant and the options outstanding.

PCTEL Stock Plan

The Board of Directors may grant to employees, directors and consultants restricted stock, options to purchase common stock, or stock purchase rights at terms and prices determined by the Board under the PCTEL, Inc. Stock Plan ("Stock Plan") which expires in 2025. Under the Stock Plan, restricted share awards are deducted from the shares available in the Stock Plan at a ratio of 1.78 stock option awards are deducted from the shares available in the Stock Plan at a ratio of 1.0. As of December 31, 2018, options to acquire 423,534 shares were outstanding and a total of 2,160,154 shares remain available for future grants.

2001 Non-Statutory Stock Option Plan

In June 2010, the stockholders approved certain changes to the PCTEL Stock Plan that included the following: (i) there would be no additional grants from the 2001 Stock Plan; and (ii) any shares returned (or that would have otherwise returned) to the 2001 Plan would be added to the shares of common stock authorized for issuance under the PCTEL Stock Plan. The 2001 Plan terminated in August 2011, and there remain no options to acquire shares at December 31, 2018.

Employee Stock Purchase Plan

Under the Company's ESPP, eligible employees can purchase common stock at the lower of 85% of the fair market value of the common stock on the first or last day of each offering period. The expiration date of the ESPP is the date that all shares authorized have been granted. As of December 31, 2018, the Company had 194,814 shares remaining that can be issued under the Purchase Plan.

Stock-Based Compensation Expense

The consolidated statements of operations include \$3.3 million, and \$3.0 million of stock compensation expense in continuing operations for the years ended December 31, 2018 and 2017, respectively. The Company did not capitalize any stock compensation expense during the years ended December 31, 2018, and 2017.

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

	Years Ended December 31,	
	2018	2017
Service-based awards	\$ 2,618	\$ 2,415
Annual director awards	422	370
Stock option and employee purchase plans	221	220
Total continuing operations	3,261	3,005
Discontinued operations	0	49
Total	\$ 3,261	\$ 3,054

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

	Years Ended December 31,	
	2018	2017
Cost of revenues	\$ 224	\$ 268
Research and development	620	517
Sales and marketing	576	474
General and administrative	1,841	1,746
Total continuing operations	3,261	3,005
Discontinued operations	0	49
Total	\$ 3,261	\$ 3,054

Restricted Stock - Serviced Based

The Company grants service-based restricted shares as employee incentives under the Stock Plan. 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. During the first quarter 2018, the Company issued to employees 420,977 service-based restricted stock awards to employees that vest in three substantially equal annual increments commencing in 2019. During the years ended December 31, 2018, and 2017, the Company awarded annual service-based restricted stock to eligible employees as long-term incentives.

The following table summarizes service-based restricted stock activity for the years ended December 31st:

	2018		2017	
	Shares	Weighted Average Fair Value	Shares	Weighted Average Fair Value
Unvested Restricted Stock Awards				
Beginning of year	828,576	\$ 5.66	1,120,960	\$ 5.83
Shares awarded	486,975	6.92	337,786	6.13
Shares vested	(392,975)	5.93	(527,657)	6.27
Shares cancelled	(83,609)	6.14	(102,513)	5.92
End of year	838,967	\$ 6.21	828,576	\$ 5.66

The intrinsic values of service-based restricted shares that vested were \$2.2 million and \$3.3 million during the years ended December 31, 2018, and 2017, respectively.

As of December 31, 2018, the unrecognized compensation expense related to the unvested portion of the Company's restricted stock was approximately \$2.6 million, to be recognized through 2021 over a weighted average period of 1.5 years.

Restricted Stock Units – Service Based

The Company grants service-based restricted stock units as employee incentives under the Stock Plan. 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 during the year ended December 31st:

Unvested Restricted Stock Units	2018		2017	
	Shares	Weighted Average Fair Value	Shares	Weighted Average Fair Value
Beginning of year	31,800	\$ 5.47	36,388	\$ 5.57
Units awarded	5,500	7.05	5,000	5.97
Units vested/Shares awarded	(11,587)	5.35	(9,588)	6.13
Units cancelled	(7,075)	6.90	0	0.00
End of year	18,638	\$ 5.66	31,800	\$ 5.47

The intrinsic values of service-based restricted stock units that vested were \$61 and \$60, during the years ended December 31, 2018, and 2017, respectively.

The Company recorded stock compensation expense of \$2 and \$65 for restricted stock units in the years ended December 31, 2018, and 2017, respectively. As of December 31, 2018, the unrecognized compensation expense related to the unvested portion of the Company's restricted stock units was \$0.1 million to be recognized through 2021 over a weighted average period of 1.2 years.

Stock Options

The Company may grant stock options to purchase common stock to new employees under the Stock Plan. 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 ninety 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 seven-year life. The Company granted 2000 stock options during 2018 and no stock options were granted during 2017.

A summary of the Company's stock option activity for the years ended December 31st is as follows:

	2018		2017	
	Options Outstanding	Weighted Average Exercise Price	Options Outstanding	Weighted Average Exercise Price
Beginning of Year	470,484	\$ 7.24	825,561	\$ 7.30
Options granted	2,000	6.98	0	0.00
Options exercised	0	0.00	(211,044)	7.09
Options forfeited	(2,793)	5.13	(103,381)	8.24
Options cancelled/expired	(46,157)	8.21	(40,652)	6.70
End of Year	423,534	\$ 7.15	470,484	\$ 7.24
Exercisable	417,385	\$ 7.17	458,698	\$ 7.28

During the year ended December 31, 2017, the Company received proceeds of \$1.5 million from the exercise of 211,044 options. The intrinsic value of these options exercised was \$128. There were no exercises during the year ended December 31, 2018.

The range of exercise prices for options outstanding and exercisable at December 31, 2018, was \$5.00 to \$8.32. The following table summarizes information about stock options outstanding under all stock option plans:

Range of Exercise Prices	Options Outstanding			Options Exercisable		
	Number Outstanding	Weighted Average Contractual Life (Years)	Weighted-Average Exercise Price	Number Exercisable	Weighted Average Exercise Price	
\$ 5.00 — \$ 7.15	19,189	3.19	\$ 6.03	13,407	\$ 6.17	
7.16 — 7.19	291,140	0.88	7.16	291,140	7.16	
7.20 — 7.22	97,705	1.21	7.22	97,705	7.22	
7.23 — 8.32	15,500	2.38	7.83	15,133	7.83	
\$ 5.00 — \$ 8.32	423,534	1.12	\$ 7.15	417,385	\$ 7.17	

The weighted average contractual life and intrinsic value at December 31, 2018, was the following:

	Weighted Average Contractual Life (years)	Intrinsic Value
Options Outstanding	1.12	\$ 0.00
Options Exercisable	1.06	\$ 0.00

The intrinsic value is based on the share price of \$4.29 at December 31, 2018.

The Company calculated the fair value of 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.

As of December 31, 2018, the unrecognized compensation expense related to the unvested portion of the Company's stock options was approximately \$3, to be recognized through 2021 over a weighted average period of 1.4 years.

Short-Term Incentive Plan

In March 2017, the Company awarded 112,986 shares to certain executives and key managers for the Company's 2016 Short-Term Incentive ("STIP"). 100% of the 2017 STIP was paid in cash. Incentive awards earned by certain executives and key managers under the Company's 2018 STIP were to be settled 50% in cash and 50% in shares of the Company's stock, but none of the performance thresholds were met.

Performance-based Equity Awards

The Company granted performance awards to executives in 2014 and 2015 as long-term incentives. These long-term incentive plans ("LTIPs") had four-year revenue goals to encourage long-term growth with a penalty if certain profit levels were not maintained. Each four-year period was divided into two interim periods (each an "Interim Period"), the first ending in 2015 and 2016, respectively and the second ending in 2017 and 2018, respectively. The LTIPs were designed so that at the end of each Interim Period, the participants would receive an equity award if the Company's actual revenue at the conclusion of the Interim Period exceeds the Interim Period threshold. The equity award increased in a linear progression as the Company's revenue for the Interim Period increased. The fair value of these performance awards was calculated based on the stock price on the date of grant and stock compensation expense is amortized over the performance period for these awards based on estimated achievement of the goals.

The following summarizes the performance unit activity during the years ended December 31st:

	2018		2017	
	Awards	Weighted Average Fair Value	Awards	Weighted Average Fair Value
Unvested Performance Units - at Target				
Beginning of Year	110,500	\$ 7.49	296,500	\$ 7.95
Units cancelled	(110,500)	7.49	(186,000)	8.22
End of Year	<u>0</u>	<u>\$ 0.00</u>	<u>110,500</u>	<u>\$ 7.49</u>

At the award date, the number of shares that could be earned collectively by all participants at target was 424,000. The Company did not meet the revenue threshold for either Interim Period and accordingly there was no award under the 2015 LTIP in the years ended December 31, 2016 or December 31, 2018.

At the award date, the number of shares that could be earned collectively by all participants at target was 380,000. The Company did not meet the revenue thresholds for revenue threshold for either Interim Period and accordingly there was no award under the 2014 LTIP the years ended December 31, 2015 or 2017.

The performance-based awards cancelled during 2018 consisted of 88,000 awards that were not earned under the second Interim Period of the 2015 LTIP related to the 2018 Interim Period and 22,500 awards related to terminated employees. The awards cancelled during 2017 consisted of 102,500 awards that were not earned the second Interim Period of the 2014 LTIP and 83,500 awards related to terminated employees.

The number of awards presented in the table above is based on achievement at target.

Employee Stock Purchase Plan

The following summarizes the ESPP activity during the years ended December 31, 2018 and 2017:

	2018		2017	
	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	156,795	1.49	139,601	1.41
Vested	(156,795)	1.49	(139,601)	1.41
Outstanding, end of year	<u>0</u>	<u>\$ 0.00</u>	<u>0</u>	<u>\$ 0.00</u>

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. The Company recognized compensation expense of \$0.2 million for each of the years ended December 31, 2018, and 2017, respectively.

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	
	2018	2017
Dividend yield	3.2%	3.5%
Risk-free interest rate	2.1%	1.1%
Expected volatility	33%	34%
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 Equity Awards

The Company grants equity awards under the Stock Plan 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, 2018, one new director received 7,246 shares with a fair value of \$50 vesting over three years. During the year ended December 31, 2018, the Company issued to directors 63,897 shares of the Company's stock with a fair value of \$0.4 million which vested immediately. During the year ended December 31, 2017, the Company issued to directors 52,786 shares of the Company's stock with a fair value of \$0.4 million which vested immediately.

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 \$0.6 million during the year ended December 31, 2018 and \$1.3 million during the year ended December 31, 2017.

10. Product Line, Customer and Geographic Information

The following tables are the product line revenues and gross profits for the years ended December 31, 2018, and 2017:

	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

	Year Ended December 31, 2017			
	Antenna Products	Test & Measurement	Corporate	Total
REVENUES	\$ 68,612	\$ 23,019	\$ (194)	\$ 91,437
GROSS PROFIT	\$ 22,439	\$ 16,354	\$ 18	\$ 38,811

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

Region	Years Ended December 31,	
	2018	2017
Asia Pacific	15%	17%
Europe, Middle East, & Africa	12%	9%
Other Americas	4%	5%
Total Foreign sales	31%	31%
Total Domestic sales	69%	69%
	100%	100%

There were no customers that accounted for 10% or more of revenues during the years ended December 31, 2018, and 2017.

The following table represents the customers that accounted for 10% or more of total trade accounts receivable at December 31, 2018 and 2017.

Trade Accounts Receivable	As of December 31,	
	2018	2017
Customer A	13%	12%

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

	December 31,	
	2018	2017
United States	\$ 15,153	\$ 23,938
All Other	1,391	1,682
	\$ 16,544	\$ 25,620

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, 2018 or 2017. 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:

	December 31,	
	2018	2017
PCTEL, Inc. 401(k) profit sharing plan - US employees	\$ 681	\$ 627
Defined contribution plans - foreign employees	527	446
Total	\$ 1,208	\$ 1,073

12. Quarterly Data (Unaudited)

	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	<u>\$ (858)</u>	<u>\$ (1,226)</u>	<u>\$ (1,670)</u>	<u>\$ (9,135)</u>
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	17,056	17,142	17,234	17,361
Diluted	17,056	17,142	17,234	17,361

	Quarters Ended,			
	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017
Revenues	\$ 22,970	\$ 21,501	\$ 23,665	\$ 23,301
Gross profit	9,454	8,962	10,150	10,245
Operating income (loss)	24	(339)	893	855
Income (loss) before income taxes	50	(325)	927	886
Net income (loss) from continuing operations	184	(185)	721	3,289
Net income (loss) from discontinued operations	(214)	(168)	234	(39)
Net income (loss)	<u>\$ (30)</u>	<u>\$ (353)</u>	<u>\$ 955</u>	<u>\$ 3,250</u>
Net income (loss) per share from continuing operations:				
Basic	\$ 0.01	\$ (0.01)	\$ 0.04	\$ 0.19
Diluted	\$ 0.01	\$ (0.01)	\$ 0.04	\$ 0.19
Net income (loss) per share from discontinued operations:				
Basic	\$ (0.01)	\$ (0.01)	\$ 0.02	\$ 0.00
Diluted	\$ (0.01)	\$ (0.01)	\$ 0.02	\$ 0.00
Net income (loss) per share:				
Basic	\$ 0.00	\$ (0.02)	\$ 0.06	\$ 0.19
Diluted	\$ 0.00	\$ (0.02)	\$ 0.06	\$ 0.19
Weighted Average Shares:				
Basic	16,340	16,534	16,757	16,926
Diluted	16,340	16,534	17,065	17,299

13. Accumulated Other Comprehensive Income

Accumulated other comprehensive (loss) income of \$(216) and \$54 at December 31, 2018 and December 31, 2017, 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 and 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 and 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 and 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. There is 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 product 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 \$0.2 million at December 31, 2018 and December 31, 2017 and is included within accrued liabilities on the accompanying condensed 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, 2018 and December 31, 2017.

There were no contract assets at December 31, 2018 or December 31, 2017. The Company records contract liabilities for deferred revenue and customer prepayments. Contract liabilities are recorded in accrued liabilities in the condensed consolidated balance sheets. The contract liability was \$0.2 million and \$0.3 million at December 31, 2018 and December 31, 2017, respectively. The Company recognized revenue of \$0.2 million and \$0.2 million during the years ended December 31, 2018, and December 31, 2017 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. On January 18, 2019, the Company entered into a new lease for 21,030 square feet of office space in Clarksburg, Maryland commencing January 1, 2020. The lease term ends on February 28, 2031. Total lease payments are \$5.0 million. The Company will relocate its operations from its Germantown, Maryland facility to the new facility in Clarksburg, Maryland in January 2020.

There were no additional 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, 2018. 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, 2018, 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 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 2019 Annual Meeting of Stockholders under the captions "Proposal #1 Election of Directors," "Name Executive Officers," "Section 16(a) Beneficial Ownership Reporting Compliance," 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.

This information shall not be deemed to be "soliciting material" or to be filed with the Securities and Exchange Commission or subject to Regulation 14A or 14C, or the liabilities of Section 18 of the Securities Exchange Act of 1934.

Item 11: Executive Compensation

The information required by this Item 11 will be included in PCTEL's proxy statement for the 2019 Annual Meeting of Stockholders under the captions "Executive Compensation and Other Matters," "Compensation of Directors," and "Compensation Committee Interlocks," 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 2019 Annual Meeting of Stockholders under the captions under the caption "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information" 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 2019 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 2019 Annual Meeting of Stockholders under the captions "Summary of Fees" of Proposal #3 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, 2018.

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

	<u>Balance at Beginning of Year</u>	<u>Charged to Costs and Expenses</u>	<u>Addition (Deductions)</u>	<u>Balance at End of Year</u>
Year Ended December 31, 2017:				
Allowance for doubtful accounts	\$ 273	55	(9)	\$ 319
Warranty reserves	\$ 394	102	(114)	\$ 382
Deferred tax asset valuation allowance	\$ 13,300	(8,236)	170	\$ 5,234
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

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, Attn: Corporate Secretary.

Item 16: Form 10-K Summary

Not applicable.

Exhibit No.	Description	Reference
2.1	Asset Purchase Agreement dated February 27, 2015, by and among PCTEL, Inc., Nexgen Wireless, Inc. and other parties thereto.	Incorporated by reference to Exhibit Number 2.1 filed with the Registrant's Current Report on Form 8-K filed March 4, 2015.
2.2.1	Amendment to Asset Purchase Agreement dated as of May 5, 2015 by and among, PCTEL, Inc., Nexgen Wireless, Inc. and other parties thereto.	Incorporated by reference to Exhibit Number 2.1 filed with the Registrant's Quarterly Report on Form 10-Q filed March 31, 2015.
2.2	Asset Purchase Agreement, dated July 31, 2017, by and between PCTEL and Gabe's Construction Co., Inc.	Incorporated by reference to Exhibit Number 10.1 filed with the Registrant's Current Report on Form 8-K filed on August 4, 2017
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).
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	* Employment Agreement between John Schoen and the Registrant, amended and restated December 11, 2008	Incorporated by reference to Exhibit Number 10.3 filed with the Registrant's Current Report on Form 8-K on November 7, 2018.
10.3	* 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.
10.4	* Form of Stock Plan Stock Option Award Agreement, as amended September 18, 2008	Incorporated by reference to Exhibit Number 10.69 filed with the Registrant's Current Report on Form 8-K filed on September 22, 2008.
10.5	* 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.
10.6	* 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.
10.7	* 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.
10.8	* 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.
10.8.1	* 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.
10.9	* Form of Management Retention Agreement	Filed Herewith

Exhibit No.	Description	Reference
10.10	* Separation Agreement and Release dated November 9, 2018 between PCTEL, Inc. and John Schoen	Filed Herewith
10.11	* FY 2018 Sales Compensation Agreement dated February 11, 2018 between PCTEL, Inc. and Arnt Arvik	Filed Herewith
10.11.1	* First Amendment to FY 2018 Sales Compensation Agreement dated September 20, 2018 between PCTEL, Inc. and Arnt Arvik	Filed Herewith
10.12	* FY 2019 Amended and Restated Sales Compensation Plan dated March 15, 2019 between PCTEL, Inc. and Arnt Arvik	Filed Herewith
10.13	* PCTEL, Inc. Long-Term Incentive Award Agreement dated February 6, 2019	Filed Herewith
10.14	* Lease Agreement between FP Gateway 270, LLC (Landlord) and PCTEL, Inc. (Tenant)	Filed Herewith
11	** Statement re Computation of Per Share Earnings	
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.	
**	Information required to be presented in Exhibit 11 is provided in Note 2 of the Notes to the Consolidated Financial Statements in this Annual Report on Form 10-K in accordance with accounting rules related to accounting for earnings per share.	
(P)	Paper Filing	

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
(Registrant)

/s/ DAVID A. NEUMANN
David A. Neumann

Chief Executive Officer
Dated: March 18, 2019

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.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ DAVID A. NEUMANN</u> (David A. Neumann)	Chief Executive Officer	March 18, 2019
<u>/s/ KEVIN MCGOWAN</u> (Kevin McGowan)	Chief Financial Officer (Principal Financial and Accounting Officer)	March 18, 2019
<u>/s/ CINDY K. ANDREOTTI</u> (Cindy K. Andreotti)	Director	March 18, 2019
<u>/s/ GINA HASPILAIRE</u> (Gina Haspilaire)	Director	March 18, 2019
<u>/s/ CYNTHIA KEITH</u> (Cynthia Keith)	Director	March 18, 2019
<u>/s/ STEVEN D. LEVY</u> (Steven D. Levy)	Director	March 18, 2019
<u>/s/ GIACOMO MARINI</u> (Giacomo Marini)	Director	March 18, 2019
<u>/s/ M. JAY SINDER</u> (M. Jay Sinder)	Director	March 18, 2019

EXHIBIT 3.2

BYLAWS

OF

PC-TEL, INC.

ARTICLE I

CORPORATE OFFICES

1.1 REGISTERED OFFICE

The registered office of the Corporation shall be 1209 Orange Street, in the City of Wilmington, County of New Castle, State of Delaware, 19801. The name of the registered agent of the Corporation at such location is The Corporation Trust Company.

1.2 OTHER OFFICES

The board of directors may at any time establish other offices at any place or places where the Corporation is qualified to do business.

ARTICLE II

MEETINGS OF STOCKHOLDERS

2.1 PLACE OF MEETINGS

Meetings of stockholders shall be held at any place, within or outside the State of Delaware, designated by the board of directors. In the absence of any such designation, stockholders' meetings shall be held at the registered office of the Corporation.

2.2 ANNUAL MEETING

The annual meeting of stockholders shall be held each year on a date and at a time designated by the board of directors. At the meeting, directors shall be elected and any other proper business may be transacted.

2.3 SPECIAL MEETING

Subject to the immediately following paragraph, a special meeting of the stockholders may be called at any time only by the (i) board of directors, (ii) the chairman of the board, (iii) the president, or (iv) the chief executive officer.

Prior to such time as a Registration Statement regarding the sale of the Corporation's Common Stock to the public is declared effective by the Securities and Exchange Commission, a special meeting of the stockholders may be called at any time by one or more stockholders holding a majority of the outstanding voting shares.

If a special meeting is called by any person other than the board of directors, the request shall be in writing, specifying the time of such meeting and the general nature of the business proposed to be transacted, and shall be delivered personally or sent by registered mail or by telegraphic or other facsimile transmission to the chairman of the board, the president, any vice president, or the secretary of the corporation. No business may be transacted at such special meeting otherwise than specified in such notice. The officer receiving the request shall cause notice to be promptly given to the stockholders entitled to vote, in accordance with the provisions of Sections 2.4 and 2.5 of this Article II, that a meeting will be held at the time requested by the person or persons who called the meeting, not less than thirty-five (35) nor more than sixty (60) days after the receipt of the request. If the notice is not given within twenty (20) days after the receipt of the request, the person or persons requesting the meeting may give the notice. Nothing contained in this paragraph of this Section 2.3 shall be construed as limiting, fixing, or affecting the time when a meeting of stockholders called by action of the board of directors may be held.

2.4 NOTICE OF STOCKHOLDERS' MEETINGS

All notices of meetings with stockholders shall be in writing and shall be sent or otherwise given in accordance with Section 2.6 of these Bylaws not less than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting. The notice shall specify the place, date and hour of the meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called.

2.5 ADVANCE NOTICE OF STOCKHOLDER NOMINEES AND STOCKHOLDER BUSINESS

To be properly brought before an annual meeting or special meeting, nominations for the election of director or other business must be (a) specified in the notice of meeting (or any supplement thereto) given by or at the direction of the board of directors, (b) otherwise properly brought before the meeting by or at the direction of the board of directors, or (c) otherwise properly brought before the meeting by a stockholder. For such nominations or other business to be considered properly brought before the meeting by a stockholder, such stockholder must have given timely written notice and in proper form of his intent to bring such business before such meeting. To be timely, such stockholder's notice must be delivered to or mailed and received by the secretary of the Corporation not less than one hundred twenty (120) days prior to the date of the Corporation's proxy statement released to stockholders in connection with the Corporation's previous year's annual meeting of stockholders. To be in proper form, a stockholder's notice to the secretary shall set forth:

- (i) the name and address of the stockholder who intends to make the nominations, propose the business, and, as the case may be, the name and address of the

person or persons to be nominated or the nature of the business to be proposed;

- (ii) a representation that the stockholder is a holder of record of stock of the Corporation entitled to vote at such meeting and, if applicable, intends to appear in person or by proxy at the meeting to nominate the person or persons specified in the notice or introduce the business specified in the notice;
- (iii) if applicable, a description of all arrangements or understandings between the stockholder and each nominee and any other person or persons (naming such person or persons) pursuant to which the nomination or nominations are to be made by the stockholder;
- (iv) such other information regarding each nominee or each matter of business to be proposed by such stockholder as would be required to be included in a proxy statement filed pursuant to the proxy rules of the Securities and Exchange Commission had the nominee been nominated, or intended to be nominated, or the matter been proposed, or intended to be proposed by the board of directors; and
- (v) if applicable, the consent of each nominee to serve as director of the Corporation if so elected.

The chairman of the meeting may refuse to acknowledge the nomination of any person or the proposal of any business not made in compliance with the foregoing procedure.

2.6 MANNER OF GIVING NOTICE; AFFIDAVIT OF NOTICE

Written notice of any meeting of stockholders, if mailed, is given when deposited in the United States mail, postage prepaid, directed to the stockholder at his address as it appears on the records of the Corporation. An affidavit of the secretary or an assistant secretary or of the transfer agent of the Corporation that the notice has been given shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

2.7 QUORUM

The holders of a majority of the stock issued and outstanding and entitled to vote thereat, present in person or represented by proxy, shall constitute a quorum at all meetings of the stockholders for the transaction of business except as otherwise provided by statute or by the Certificate of Incorporation. If, however, such quorum is not present or represented at any meeting of the stockholders, then either (i) the chairman of the meeting, or (ii) the stockholders entitled to vote thereat, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present or

represented. At such adjourned meeting at which a quorum is present or represented, any business may be transacted that might have been transacted at the meeting as originally noticed.

When a quorum is present or represented at any meeting, the vote of the holders of a majority of the stock having voting power present in person or represented by proxy shall decide any question brought before such meeting, unless the question is one upon which, by express provisions of the statutes or of the Certificate of Incorporation, a different vote is required, in which case such express provision shall govern and control the decision of the question.

2.8 ADJOURNED MEETING; NOTICE

When a meeting is adjourned to another time or place, unless these Bylaws otherwise require, notice need not be given of the adjourned meeting if the time and place thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting the Corporation may transact any business that might have been transacted at the original meeting. If the adjournment is for more than 30 days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

2.9 VOTING

The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Sections 2.12 and 2.14 of these Bylaws, subject to the provisions of Sections 217 and 218 of the General Corporation Law of Delaware (relating to voting rights of fiduciaries, pledgors and joint owners of stock and to voting trusts and other voting agreements).

Except as may be otherwise provided in the Certificate of Incorporation, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder.

2.10 WAIVER OF NOTICE

Whenever notice is required to be given under any provision of the General Corporation Law of Delaware or of the Certificate of Incorporation or these Bylaws, a written waiver thereof, signed by the person entitled to notice, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders need be specified in any written waiver of notice unless so required by the Certificate of Incorporation or these Bylaws.

2.11 STOCKHOLDER ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Notwithstanding the following provisions of this Section 2.11, effective upon the listing of the Common Stock of the Corporation on the Nasdaq Stock Market and the registration of any class of securities of the Corporation pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the stockholders of the Corporation may not take action by written consent without a meeting but must take any such actions at a duly called annual or special meeting.

Except as otherwise provided in this Section 2.11, any action required by this chapter to be taken at any annual or special meeting of stockholders of a Corporation, or any action that may be taken at any annual or special meeting of such stockholders, may be taken without a meeting, without prior notice, and without a vote if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted.

Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing. If the action which is consented to is such as would have required the filing of a certificate under any section of the General Corporation Law of Delaware if such action had been voted on by stockholders at a meeting thereof, then the certificate filed under such section shall state, in lieu of any statement required by such section concerning any vote of stockholders, that written notice and written consent have been given as provided in Section 228 of the General Corporation Law of Delaware.

2.12 RECORD DATE FOR STOCKHOLDER NOTICE; VOTING; GIVING CONSENTS

In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, or entitled to express consent to corporate action in writing without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the board of directors may fix, in advance, a record date, which shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 60 days prior to any other action.

If the board of directors does not so fix a record date, the fixing of such record date shall be governed by the provisions of Section 213 of the General Corporation Law of Delaware.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the board of directors may fix a new record date for the adjourned meeting.

2.13 PROXIES

Each stockholder entitled to vote at a meeting of stockholders or to express consent or dissent to corporate action in writing without a meeting may authorize another person or persons to act for him by a written proxy, signed by the stockholder and filed with the secretary of the Corporation, but no such proxy shall be voted or acted upon after 3 years from its date, unless the proxy provides for a longer period. A proxy shall be deemed signed if the stockholder's name is placed on the proxy (whether by manual signature, typewriting, telegraphic transmission or otherwise) by the stockholder or the stockholder's attorney-in-fact. The revocability of a proxy that states on its face that it is irrevocable shall be governed by the provisions of Section 212(c) of the General Corporation Law of Delaware.

2.14 LIST OF STOCKHOLDERS ENTITLED TO VOTE

The officer who has charge of the stock ledger of a Corporation shall prepare and make, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least 10 days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where the meeting is to be held. The stock ledger shall also be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. The stock ledger shall be the only evidence as to who are the stockholders entitled to examine the stock ledger, the list of stockholders or the books of the Corporation, or to vote in person or by proxy at any meeting of stockholders and of the number of shares held by each such stockholder.

2.15 CONDUCT OF BUSINESS

Meetings of stockholders shall be presided over by the chairman of the board, if any, or in his absence by the president, or in his absence by a vice president, or in the absence of the foregoing persons by a chairman designated by the board of directors, or in the absence of such designation by a chairman chosen at the meeting. The secretary shall act as secretary of the meeting, but in his absence the chairman of the meeting may appoint any person to act as secretary of the meeting. The chairman of any meeting of stockholders shall determine the order of business and the procedures at the meeting, including such matters as the regulation of the manner of voting and conduct of business.

ARTICLE III

DIRECTORS

3.1 POWERS

Subject to the provisions of the General Corporation Law of Delaware and any limitations in the Certificate of Incorporation or these Bylaws relating to action required to be approved by the stockholders or by the outstanding shares, the business and affairs of the Corporation shall be managed and all corporate powers shall be exercised by or under the direction of the board of directors.

3.2 NUMBER

The board of directors shall consist of not less than seven (7) members nor more than nine (9) members. The number of directors may be changed by an amendment to this bylaw, duly adopted by the board of directors or by the stockholders, or by a duly adopted amendment to the certificate of incorporation. No reduction of the authorized number of directors shall have the effect of removing any director before that director's term of office expires.

3.3 CLASSES OF DIRECTORS

At such time as a Registration Statement regarding the sale of the Corporation's Common Stock to the public is declared effective by the Securities and Exchange Commission, the Directors shall be divided into three classes designated as Class I, Class II and Class III, respectively. Directors shall be assigned to each class in accordance with a resolution or resolutions adopted by the Board of Directors. At the first annual meeting of stockholders following the closing of the Initial Public Offering, the term of office of the Class I Directors shall expire and Class I Directors shall be elected for a full term of three years. At the second annual meeting of stockholders following the closing of the Initial Public Offering, the term of office of the Class II Directors shall expire and Class II Directors shall be elected for a full term of three years. At the third annual meeting of stockholders following the closing of the Initial Public Offering, the term of office of the Class III Directors shall expire and Class III Directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, Directors shall be elected for a full term of three years to succeed the Directors of the class whose terms expire at such annual meeting.

Notwithstanding the foregoing provisions of this Article, each Director shall serve until his successor is duly elected and qualified or until his earlier death, resignation or removal. No decrease in the number of Directors constituting the Board of Directors shall shorten the term of any incumbent Director.

3.4 RESIGNATION AND VACANCIES

Any director may resign at any time upon written notice to the Corporation. Stockholders may remove directors with or without cause. Any vacancy occurring in the board of directors with or without cause may be filled by a majority of the remaining members of the board of directors, although such majority is less than a quorum, or by a plurality of the votes cast at a meeting of stockholders, and each director so elected shall hold office until the expiration of the term of office of the director whom he has replaced.

Unless otherwise provided in the Certificate of Incorporation or these Bylaws:

- (i) Vacancies and newly created directorships resulting from any increase in the authorized number of directors elected by all of the stockholders having the right to vote as a single class may be filled by a majority of the directors then in office, although less than a quorum, or by a sole remaining director.
- (ii) Whenever the holders of any class or classes of stock or series thereof are entitled to elect one or more directors by the provisions of the Certificate of Incorporation, vacancies and newly created directorships of such class or classes or series may be filled by a majority of the directors elected by such class or classes or series thereof then in office, or by a sole remaining director so elected.

If at any time, by reason of death or resignation or other cause, the Corporation should have no directors in office, then any officer or any stockholder or an executor, administrator, trustee or guardian of a stockholder, or other fiduciary entrusted with like responsibility for the person or estate of a stockholder, may apply to the Court of Chancery for a decree summarily ordering an election as provided in Section 211 of the General Corporation Law of Delaware.

If, at the time of filling any vacancy or any newly created directorship, the directors then in office constitute less than a majority of the whole board (as constituted immediately prior to any such increase), then the Court of Chancery may, upon application of any stockholder or stockholders holding at least 10% of the total number of the shares at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office as aforesaid, which election shall be governed by the provisions of Section 211 of the General Corporation Law of Delaware as far as applicable.

3.5 PLACE OF MEETINGS; MEETINGS BY TELEPHONE

The board of directors of the Corporation may hold meetings, both regular and special, either within or outside the State of Delaware.

Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, members of the board of directors, or any committee designated by the board of directors, may participate in a meeting of the board of directors, or any committee, by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

3.6 REGULAR MEETINGS

Regular meetings of the board of directors may be held without notice at such time and at such place as shall from time to time be determined by the board.

3.7 SPECIAL MEETINGS; NOTICE

Special meetings of the board of directors for any purpose or purposes may be called at any time by the chairman of the board, the president, any vice president, the secretary or any two directors.

Notice of the time and place of special meetings shall be delivered personally or by telephone to each director or sent by first-class mail or telegram, charges prepaid, addressed to each director at that director's address as it is shown on the records of the Corporation. If the notice is mailed, it shall be deposited in the United States mail at least 4 days before the time of the holding of the meeting. If the notice is delivered personally or by telephone or by telegram, it shall be delivered personally or by telephone or to the telegraph company at least 48 hours before the time of the holding of the meeting. Any oral notice given personally or by telephone may be communicated either to the director or to a person at the office of the director who the person giving the notice has reason to believe will promptly communicate it to the director. The notice need not specify the purpose or the place of the meeting, if the meeting is to be held at the principal executive office of the Corporation.

3.8 QUORUM

At all meetings of the board of directors, a majority of the authorized number of directors shall constitute a quorum for the transaction of business and the act of a majority of the directors present at any meeting at which there is a quorum shall be the act of the board of directors, except as may be otherwise specifically provided by statute or by the Certificate of Incorporation.

3.9 WAIVER OF NOTICE

Whenever notice is required to be given under any provision of the General Corporation Law of Delaware or of the Certificate of Incorporation or these Bylaws, a written waiver thereof, signed by the person entitled to notice, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or

special meeting of the directors, or members of a committee of directors, need be specified in any written waiver of notice unless so required by the Certificate of Incorporation or these Bylaws.

3.10 ADJOURNED MEETING; NOTICE

If a quorum is not present at any meeting of the board of directors, then the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present.

3.11 CONDUCT OF BUSINESS

Meetings of the board of directors shall be presided over by the chairman of the board, if any, or in his absence by the chief executive officer, or in their absence by a chairman chosen at the meeting. The secretary shall act as secretary of the meeting, but in his absence the chairman of the meeting may appoint any person to act as secretary of the meeting. The chairman of any meeting shall determine the order of business and the procedures at the meeting.

3.12 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the board of directors, or of any committee thereof, may be taken without a meeting if all members of the board or committee, as the case may be, consent thereto in writing and the writing or writings are filed with the minutes of proceedings of the board or committee.

3.13 FEES AND COMPENSATION OF DIRECTORS

Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, the board of directors shall have the authority to fix the compensation of directors. The directors may be paid their expenses, if any, of attendance at each meeting of the board of directors and may be paid a fixed sum for attendance at each meeting of the board of directors or a stated salary as director. No such payment shall preclude any director from serving the Corporation in any other capacity and receiving compensation therefor. Members of special or standing committees may be allowed like compensation for attending committee meetings.

3.14 REMOVAL OF DIRECTORS

Unless otherwise restricted by statute, by the Certificate of Incorporation or by these Bylaws, any director or the entire board of directors may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors. If at any time a class or series of shares is entitled to elect one or more directors, the provisions of this Article 3.14 shall apply to the vote of that class or series and not to the vote of the outstanding shares as a whole.

ARTICLE IV

COMMITTEES

4.1 COMMITTEES OF DIRECTORS

The board of directors may, by resolution passed by a majority of the whole board, designate one or more committees, with each committee to consist of one or more of the directors of the Corporation. The board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the board of directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the board of directors or in the Bylaws of the Corporation, shall have and may exercise all the powers and authority of the board of directors in the management of the business and affairs of the Corporation, and may authorize the seal of the Corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority to (i) amend the Certificate of Incorporation (except that a committee may, to the extent authorized in the resolution or resolutions providing for the issuance of shares of stock adopted by the board of directors as provided in Section 151(a) of the General Corporation Law of Delaware, fix any of the preferences or rights of such shares relating to dividends, redemption, dissolution, any distribution of assets of the Corporation or the conversion into, or the exchange of such shares for, shares of any other class or classes or any other series of the same or any other class or classes of stock of the Corporation), (ii) adopt an agreement of merger or consolidation under Sections 251 or 252 of the General Corporation Law of Delaware, (iii) recommend to the stockholders the sale, lease or exchange of all or substantially all of the Corporation's property and assets, (iv) recommend to the stockholders a dissolution of the Corporation or a revocation of a dissolution, or (v) amend the Bylaws of the Corporation; and, unless the board resolution establishing the committee, the Bylaws or the Certificate of Incorporation expressly so provide, no such committee shall have the power or authority to declare a dividend, to authorize the issuance of stock, or to adopt a certificate of ownership and merger pursuant to Section 253 of the General Corporation Law of Delaware.

4.2 COMMITTEE MINUTES

Each committee shall keep regular minutes of its meetings and report the same to the board of directors when required.

4.3 MEETINGS AND ACTION OF COMMITTEES

Meetings and actions of committees shall be governed by, and held and taken in accordance with, the provisions of Article III of these Bylaws, Section 3.5 (place of meetings and meetings by telephone), Section 3.6 (regular meetings), Section 3.7 (special meetings and notice), Section 3.8 (quorum), Section 3.9 (waiver of notice), Section 3.10 (adjournment and notice of adjournment),

Section 3.11 (conduct of business) and 3.12 (action without a meeting), with such changes in the context of those Bylaws as are necessary to substitute the committee and its members for the board of directors and its members; provided, however, that the time of regular meetings of committees may also be called by resolution of the board of directors and that notice of special meetings of committees shall also be given to all alternate members, who shall have the right to attend all meetings of the committee. The board of directors may adopt rules for the government of any committee not inconsistent with the provisions of these Bylaws.

ARTICLE V

OFFICERS

5.1 OFFICERS

The officers of the Corporation shall be a chief executive officer, one or more vice presidents, a secretary and a chief financial officer. The Corporation may also have, at the discretion of the board of directors, a chairman of the board, a president, a chief operating officer, one or more executive, senior or assistant vice presidents, assistant secretaries and any such other officers as may be appointed in accordance with the provisions of Section 5.2 of these Bylaws. Any number of offices may be held by the same person.

5.2 APPOINTMENT OF OFFICERS

Except as otherwise provided in this Section 5.2, the officers of the Corporation shall be appointed by the board of directors, subject to the rights, if any, of an officer under any contract of employment. The board of directors may appoint, or empower an officer to appoint, such officers and agents of the business as the Corporation may require (whether or not such officer or agent is described in this Article V), each of whom shall hold office for such period, have such authority, and perform such duties as are provided in these Bylaws or as the board of directors may from time to time determine. Any vacancy occurring in any office of the Corporation shall be filled by the board of directors or may be filled by the officer, if any, who appointed such officer.

5.3 REMOVAL AND RESIGNATION OF OFFICERS

Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the board of directors at any regular or special meeting of the board or, except in the case of an officer chosen by the board of directors, by any officer upon whom such power of removal may be conferred by the board of directors or, in the case of an officer appointed by another officer, by such other officer.

Any officer may resign at any time by giving written notice to the Corporation. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice; and, unless otherwise specified in that notice, the acceptance of the resignation shall not

be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the Corporation under any contract to which the officer is a party.

5.4 CHAIRMAN OF THE BOARD

The chairman of the board, if such an officer be elected, shall, if present, preside at meetings of the board of directors and exercise and perform such other powers and duties as may from time to time be assigned to him by the board of directors or as may be prescribed by these Bylaws. If there is no chief executive officer, then the chairman of the board shall also be the chief executive officer of the Corporation and shall have the powers and duties prescribed in Section 5.5 of these Bylaws.

5.5 CHIEF EXECUTIVE OFFICER

The Chief Executive Officer of the Corporation shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and the officers of the Corporation. He or she shall preside at all meetings of the stockholders and, in the absence or nonexistence of a Chairman of the Board at all meetings of the Board of Directors. He or she shall have the general powers and duties of management usually vested in the chief executive officer of a Corporation, including general supervision, direction and control of the business and supervision of other officers of the Corporation, and shall have such other powers and duties as may be prescribed by the Board of Directors or these Bylaws.

The Chief Executive Officer shall, without limitation, have the authority to execute bonds, mortgages and other contracts requiring a seal, under the seal of the Corporation, except where required or permitted by law to be otherwise signed and executed and except where the signing and execution thereof shall be expressly delegated by the Board of Directors to some other officer or agent of the Corporation.

5.6 PRESIDENT

Subject to such supervisory powers as may be given by these Bylaws or the Board of Directors to the Chairman of the Board or the Chief Executive Officer, if there be such officers, the president shall have general supervision, direction and control of the business and supervision of other officers of the Corporation, and shall have such other powers and duties as may be prescribed by the Board of Directors or these Bylaws. In the event a Chief Executive Officer shall not be appointed, the President shall have the duties of such office.

5.7 VICE PRESIDENT

In the absence or disability of the president, the vice presidents, if any, in order of their rank as fixed by the board of directors or, if not ranked, a vice president designated by the board of directors, shall perform all the duties of the chief executive officer and when so acting shall have all the powers of, and be subject to all the restrictions upon, the chief executive officer. The vice presidents shall have such other powers and perform such other duties as from time to time may be

prescribed for them respectively by the board of directors, these Bylaws, the chief executive officer or the chairman of the board.

5.8 SECRETARY

The secretary shall keep or cause to be kept, at the principal executive office of the Corporation or such other place as the board of directors may direct, a book of minutes of all meetings and actions of directors, committees of directors, and stockholders. The minutes shall show the time and place of each meeting, whether regular or special (and, if special, how authorized and the notice given), the names of those present at directors' meetings or committee meetings, the number of shares present or represented at stockholders' meetings, and the proceedings thereof.

The secretary shall keep, or cause to be kept, at the principal executive office of the Corporation or at the office of the Corporation's transfer agent or registrar, as determined by resolution of the board of directors, a share register, or a duplicate share register, showing the names of all stockholders and their addresses, the number and classes of shares held by each, the number and date of certificates evidencing such shares, and the number and date of cancellation of every certificate surrendered for cancellation.

The secretary shall give, or cause to be given, notice of all meetings of the stockholders and of the board of directors required to be given by law or by these Bylaws. He shall keep the seal of the Corporation, if one be adopted, in safe custody and shall have such other powers and perform such other duties as may be prescribed by the board of directors or by these Bylaws.

5.9 CHIEF FINANCIAL OFFICER

The chief financial officer shall keep and maintain, or cause to be kept and maintained, adequate and correct books and records of accounts of the properties and business transactions of the Corporation, including accounts of its assets, liabilities, receipts, disbursements, gains, losses, capital, retained earnings and shares. The books of account shall at all reasonable times be open to inspection by any director.

The chief financial officer shall deposit all money and other valuables in the name and to the credit of the Corporation with such depositaries as may be designated by the board of directors. He shall disburse the funds of the Corporation as may be ordered by the board of directors, shall render to the chief executive officer and directors, whenever they request it, an account of all of his transactions as treasurer and of the financial condition of the Corporation, and shall have such other powers and perform such other duties as may be prescribed by the board of directors or these Bylaws.

5.10 ASSISTANT SECRETARY

The assistant secretary, or, if there is more than one, the assistant secretaries in the order determined by the stockholders or board of directors (or if there be no such determination, then in the

order of their election) shall, in the absence of the secretary or in the event of his or her inability or refusal to act, perform the duties and exercise the powers of the secretary and shall perform such other duties and have such other powers as the board of directors or the stockholders may from time to time prescribe.

5.11 AUTHORITY AND DUTIES OF OFFICERS

In addition to the foregoing authority and duties, all officers of the Corporation shall respectively have such authority and perform such duties in the management of the business of the Corporation as may be designated from time to time by the board of directors or the stockholders.

ARTICLE VI

INDEMNITY

6.1 INDEMNIFICATION OF DIRECTORS AND OFFICERS

The Corporation shall, to the maximum extent and in the manner permitted by the General Corporation Law of Delaware, indemnify each of its directors and officers against expenses (including attorneys' fees), judgments, fines, settlements, and other amounts actually and reasonably incurred in connection with any proceeding, arising by reason of the fact that such person is or was an agent of the Corporation. For purposes of this Section 6.1, a "director" or "officer" of the Corporation includes any person (i) who is or was a director or officer of the Corporation, (ii) who is or was serving at the request of the Corporation as a director or officer of another Corporation, partnership, joint venture, trust or other enterprise, or (iii) who was a director or officer of a Corporation which was a predecessor Corporation of the Corporation or of another enterprise at the request of such predecessor Corporation.

6.2 INDEMNIFICATION OF OTHERS

The Corporation shall have the power, to the extent and in the manner permitted by the General Corporation Law of Delaware, to indemnify each of its employees and agents (other than directors and officers) against expenses (including attorneys' fees), judgments, fines, settlements, and other amounts actually and reasonably incurred in connection with any proceeding, arising by reason of the fact that such person is or was an agent of the Corporation. For purposes of this Section 6.2, an "employee" or agent of the Corporation (other than a director or officer) includes any person (i) who is or was an employee or agent of the Corporation, (ii) who is or was serving at the request of the Corporation as an employee or agent of another Corporation, partnership, joint venture, trust or other enterprise, or (iii) who was an employee or agent of a Corporation which was a predecessor Corporation of the Corporation or of another enterprise at the request of such predecessor Corporation.

6.3 INSURANCE

The Corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another Corporation, partnership, joint venture, trust or other enterprise against any liability asserted against him and incurred by him in any such capacity, or arising out of his status as such, whether or not the Corporation would have the power to indemnify him against such liability under the provisions of the General Corporation Law of Delaware.

ARTICLE VII

RECORDS AND REPORTS

7.1 MAINTENANCE AND INSPECTION OF RECORDS

The Corporation shall, either at its principal executive office or at such place or places as designated by the board of directors, keep a record of its stockholders listing their names and addresses and the number and class of shares held by each stockholder, a copy of these Bylaws as amended to date, accounting books, and other records.

Any stockholder of record, in person or by attorney or other agent, shall, upon written demand under oath stating the purpose thereof, have the right during the usual hours for business to inspect for any proper purpose the Corporation's stock ledger, a list of its stockholders, and its other books and records and to make copies or extracts therefrom. A proper purpose shall mean a purpose reasonably related to such person's interest as a stockholder. In every instance where an attorney or other agent is the person who seeks the right to inspection, the demand under oath shall be accompanied by a power of attorney or such other writing that authorizes the attorney or other agent to so act on behalf of the stockholder. The demand under oath shall be directed to the Corporation at its registered office in Delaware or at its principal place of business.

7.2 INSPECTION BY DIRECTORS

Any director shall have the right to examine the Corporation's stock ledger, a list of its stockholders and its other books and records for a purpose reasonably related to his position as a director. The Court of Chancery is hereby vested with the exclusive jurisdiction to determine whether a director is entitled to the inspection sought. The Court may summarily order the Corporation to permit the director to inspect any and all books and records, the stock ledger, and the stock list and to make copies or extracts therefrom. The Court may, in its discretion, prescribe any limitations or conditions with reference to the inspection, or award such other and further relief as the Court may deem just and proper.

7.3 REPRESENTATION OF SHARES OF OTHER CORPORATIONS

The chairman of the board, the chief executive officer, any vice president, the chief financial officer, the secretary or assistant secretary of this Corporation, or any other person authorized by the board of directors or the chief executive officer or a vice president, is authorized to vote, represent, and exercise on behalf of this Corporation all rights incident to any and all shares of any other corporation or corporations standing in the name of this Corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

ARTICLE VIII

GENERAL MATTERS

8.1 CHECKS

From time to time, the board of directors shall determine by resolution which person or persons may sign or endorse all checks, drafts, other orders for payment of money, notes or other evidences of indebtedness that are issued in the name of or payable to the Corporation, and only the persons so authorized shall sign or endorse those instruments.

8.2 EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS

The board of directors, except as otherwise provided in these Bylaws, may authorize any officer or officers, or agent or agents, to enter into any contract or execute any instrument in the name of and on behalf of the Corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the board of directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the Corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

8.3 STOCK CERTIFICATES; PARTLY PAID SHARES

The shares of a corporation shall be represented by certificates, provided that the board of directors of the Corporation may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the Corporation. Notwithstanding the adoption of such a resolution by the board of directors, every holder of stock represented by certificates and upon request every holder of uncertificated shares shall be entitled to have a certificate signed by, or in the name of the Corporation by the chairman or vice-chairman of the board of directors, or the president or vice-president, and by the treasurer or an assistant treasurer, or the secretary or an assistant secretary of such Corporation representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been

placed upon a certificate has to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if he were such officer, transfer agent or registrar at the date of issue.

The Corporation may issue the whole or any part of its shares as partly paid and subject to call for the remainder of the consideration to be paid therefor. Upon the face or back of each stock certificate issued to represent any such partly paid shares, upon the books and records of the Corporation in the case of uncertificated partly paid shares, the total amount of the consideration to be paid therefor and the amount paid thereon shall be stated. Upon the declaration of any dividend on fully paid shares, the Corporation shall declare a dividend upon partly paid shares of the same class, but only upon the basis of the percentage of the consideration actually paid thereon.

8.4 SPECIAL DESIGNATION ON CERTIFICATES

If the Corporation is authorized to issue more than one class of stock or more than one series of any class, then the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate that the Corporation shall issue to represent such class or series of stock; provided, however, that, except as otherwise provided in Section 202 of the General Corporation Law of Delaware, in lieu of the foregoing requirements there may be set forth on the face or back of the certificate that the Corporation shall issue to represent such class or series of stock a statement that the Corporation will furnish without charge to each stockholder who so requests the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

8.5 LOST CERTIFICATES

Except as provided in this Section 8.5, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the Corporation and cancelled at the same time. The Corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the Corporation may require the owner of the lost, stolen or destroyed certificate, or his legal representative, to give the Corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

8.6 CONSTRUCTION; DEFINITIONS

Unless the context requires otherwise, the general provisions, rules of construction, and definitions in the Delaware General Corporation Law shall govern the construction of these Bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural

number includes the singular, and the term "person" includes both a Corporation and a natural person.

8.7 DIVIDENDS

The directors of the Corporation, subject to any restrictions contained in the Certificate of Incorporation, may declare and pay dividends upon the shares of its capital stock pursuant to the General Corporation Law of Delaware. Dividends may be paid in cash, in property, or in shares of the Corporation's capital stock.

The directors of the Corporation may set apart out of any of the funds of the Corporation available for dividends a reserve or reserves for any proper purpose and may abolish any such reserve. Such purposes shall include but not be limited to equalizing dividends, repairing or maintaining any property of the Corporation, and meeting contingencies.

8.8 FISCAL YEAR

The fiscal year of the Corporation shall be fixed by resolution of the board of directors and may be changed by the board of directors.

8.9 SEAL

The Corporation may adopt a corporate seal, which may be altered at pleasure, and may use the same by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

8.10 TRANSFER OF STOCK

Upon surrender to the Corporation or the transfer agent of the Corporation of a certificate for shares duly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer, it shall be the duty of the Corporation to issue a new certificate to the person entitled thereto, cancel the old certificate, and record the transaction in its books.

8.11 STOCK TRANSFER AGREEMENTS

The Corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the Corporation to restrict the transfer of shares of stock of the Corporation of any one or more classes owned by such stockholders in any manner not prohibited by the General Corporation Law of Delaware.

8.12 REGISTERED STOCKHOLDERS

The Corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends and to vote as such owner, shall be entitled to hold liable for calls and assessments the person registered on its books as the owner of shares, and shall

not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of another person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE IX

AMENDMENTS

The original or other Bylaws of the Corporation may be adopted, amended or repealed by the stockholders entitled to vote; provided, however, that the Corporation may, in its Certificate of Incorporation, confer the power to adopt, amend or repeal Bylaws upon the directors. The fact that such power has been so conferred upon the directors shall not divest the stockholders of the power, nor limit their power to adopt, amend or repeal Bylaws.

ARTICLE X

DISSOLUTION

If it should be deemed advisable in the judgment of the board of directors of the Corporation that the Corporation should be dissolved, the board, after the adoption of a resolution to that effect by a majority of the whole board at any meeting called for that purpose, shall cause notice to be mailed to each stockholder entitled to vote thereon of the adoption of the resolution and of a meeting of stockholders to take action upon the resolution.

At the meeting a vote shall be taken for and against the proposed dissolution. If a majority of the outstanding stock of the Corporation entitled to vote thereon votes for the proposed dissolution, then a certificate stating that the dissolution has been authorized in accordance with the provisions of Section 275 of the General Corporation Law of Delaware and setting forth the names and residences of the directors and officers shall be executed, acknowledged, and filed and shall become effective in accordance with Section 103 of the General Corporation Law of Delaware. Upon such certificate's becoming effective in accordance with Section 103 of the General Corporation Law of Delaware, the Corporation shall be dissolved.

ARTICLE XI

CUSTODIAN

11.1 APPOINTMENT OF A CUSTODIAN IN CERTAIN CASES

The Court of Chancery, upon application of any stockholder, may appoint one or more persons to be custodians and, if the Corporation is insolvent, to be receivers, of and for the Corporation when:

- (i) at any meeting held for the election of directors the stockholders are so divided that they have failed to elect successors to directors whose terms have expired or would have expired upon qualification of their successors; or
- (ii) the business of the Corporation is suffering or is threatened with irreparable injury because the directors are so divided respecting the management of the affairs of the Corporation that the required vote for action by the board of directors cannot be obtained and the stockholders are unable to terminate this division; or
- (iii) the Corporation has abandoned its business and has failed within a reasonable time to take steps to dissolve, liquidate or distribute its assets.

11.2 DUTIES OF CUSTODIAN

The custodian shall have all the powers and title of a receiver appointed under Section 291 of the General Corporation Law of Delaware, but the authority of the custodian shall be to continue the business of the Corporation and not to liquidate its affairs and distribute its assets, except when the Court of Chancery otherwise orders and except in cases arising under Sections 226(a)(3) or 352(a)(2) of the General Corporation Law of Delaware.

ARTICLE XII

LOANS TO OFFICERS

The Corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the Corporation or of its subsidiaries, including any officer or employee who is a Director of the Corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the Corporation. The loan, guarantee or other assistance may be with or without interest and may be unsecured, or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the Corporation. Nothing in this Bylaw shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the Corporation at common law or under any statute.

AMENDED AND RESTATED

BYLAWS

OF

PC-TEL, INC.

a Delaware Corporation

(as amended October 13, 2011 to restate Section 3.2, and previously amended August 16, 2001, to restate in its entirety Article VI of the Amended and Restated Bylaws, dated August 3, 1999)

TABLE OF CONTENTS

Page

ARTICLE I CORPORATE OFFICES	1
1.1 REGISTERED OFFICE	1
1.2 OTHER OFFICES	1
ARTICLE II MEETINGS OF STOCKHOLDERS	1
2.1 PLACE OF MEETINGS	1
2.2 ANNUAL MEETING	1
2.3 SPECIAL MEETING	1
2.4 NOTICE OF STOCKHOLDERS' MEETINGS	2
2.5 ADVANCE NOTICE OF STOCKHOLDER NOMINEES AND STOCKHOLDER BUSINESS	2
2.6 MANNER OF GIVING NOTICE; AFFIDAVIT OF NOTICE	3
2.7 QUORUM	3
2.8 ADJOURNED MEETING; NOTICE	4
2.9 VOTING	4
2.10 WAIVER OF NOTICE	4
2.11 STOCKHOLDER ACTION BY WRITTEN CONSENT WITHOUT A MEETING	4
2.12 RECORD DATE FOR STOCKHOLDER NOTICE; VOTING; GIVING CONSENTS	5
2.13 PROXIES	5
2.14 LIST OF STOCKHOLDERS ENTITLED TO VOTES	5
2.15 CONDUCT OF BUSINESS	6
ARTICLE III DIRECTORS	6
3.1 POWERS	6
3.2 NUMBER	6
3.3 CLASSES OF DIRECTORS	6
3.4 RESIGNATION AND VACANCIES	7
3.5 PLACE OF MEETINGS; MEETINGS BY TELEPHONE	8
3.6 REGULAR MEETINGS	8
3.7 SPECIAL MEETINGS; NOTICE	8
3.8 QUORUM	8
3.9 WAIVER OF NOTICE	9
3.10 ADJOURNED MEETING; NOTICE	9
3.11 CONDUCT OF BUSINESS	9
3.12 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING	9
3.13 FEES AND COMPENSATION OF DIRECTORS	9
3.14 REMOVAL OF DIRECTORS	10

TABLE OF CONTENTS
(continued)

Page	
ARTICLE IV COMMITTEES	10
4.1	COMMITTEES OF DIRECTORS10
4.2	COMMITTEE MINUTES10
4.3	MEETINGS AND ACTION OF COMMITTEES11
ARTICLE V OFFICERS	11
5.1	OFFICERS11
5.2	APPOINTMENT OF OFFICERS11
5.3	REMOVAL AND RESIGNATION OF OFFICERS11
5.4	CHAIRMAN OF THE BOARD12
5.5	CHIEF EXECUTIVE OFFICER12
5.6	PRESIDENT12
5.7	VICE PRESIDENT12
5.8	SECRETARY13
5.9	CHIEF FINANCIAL OFFICER13
5.10	ASSISTANT SECRETARY13
5.11	AUTHORITY AND DUTIES OF OFFICERS14
ARTICLE VI INDEMNITY	14
6.1	INDEMNIFICATION OF DIRECTORS AND OFFICERS14
6.2	INDEMNIFICATION OF OTHERS14
6.3	INSURANCE14
ARTICLE VII RECORDS AND REPORTS	15
7.1	MAINTENANCE AND INSPECTION OF RECORDS15
7.2	INSPECTION BY DIRECTORS15
7.3	REPRESENTATION OF SHARES OF OTHER CORPORATIONS15
ARTICLE VIII GENERAL MATTERS	16
8.1	CHECKS16
8.2	EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS16
8.3	STOCK CERTIFICATES; PARTLY PAID SHARES16
8.4	SPECIAL DESIGNATION ON CERTIFICATES17
8.5	LOST CERTIFICATES17
8.6	CONSTRUCTION; DEFINITIONS17
8.7	DIVIDENDS17
8.8	FISCAL YEAR18
8.9	SEAL18
8.10	TRANSFER OF STOCK18
8.11	STOCK TRANSFER AGREEMENTS18

TABLE OF CONTENTS
(continued)

Page

8.12	REGISTERED STOCKHOLDERS	18
ARTICLE IX	AMENDMENTS	18
ARTICLE X	DISSOLUTION	19
ARTICLE XI	CUSTODIAN	19
11.1	APPOINTMENT OF A CUSTODIAN IN CERTAIN CASES	19
11.2	DUTIES OF CUSTODIAN	19
ARTICLE XII	LOANS TO OFFICERS	20

PCTEL, INC.

MANAGEMENT RETENTION AGREEMENT

This Management Retention Agreement (the "Agreement") is effective as of _____ by and between [name of executive (the "Executive") and PCTEL, Inc. (the "Company")].

RECITALS

A. It is expected that the Company from time to time may consider a Change of Control (as defined below). The Board of Directors of the Company (the "Board") recognizes that such consideration can be a distraction to the Executive and can cause the Executive to consider alternative employment opportunities. The Board has determined that it is in the best interests of the Company and its stockholders to assure that the Company will have the continued dedication and objectivity of the Executive, notwithstanding the possibility, threat or occurrence of a Change of Control of the Company.

B. The Board believes that it is in the best interests of the Company and its stockholders to provide Executive with an incentive to continue his/her employment and to motivate the Executive to maximize the value of the Company upon a Change of Control for the benefit of its stockholders.

C. The Board believes that it is imperative to provide the Executive with certain benefits upon a Change of Control and severance benefits upon Executive's termination of employment following a Change of Control which provides Executive with enhanced financial security and incentive and encouragement to remain with the Company notwithstanding the possibility of a Change of Control.

D. Certain capitalized terms used in this Agreement are defined in Section 4.

The parties hereto agree as follows:

1. Term of Agreement. This Agreement shall terminate upon the date that all obligations of the parties with respect to this Agreement have been satisfied.

2. At-Will Employment. The Company and Executive acknowledge that Executive's employment is and shall continue to be at-will, as defined under applicable law, and may be terminated by either party at any time, with or without cause or notice. If the Executive's employment terminates for any reason, including (without limitation) any termination prior to a Change of Control, the Executive shall be entitled to such payments, benefits, damages, awards

and compensation as provided pursuant to other written agreements between Executive and the Company.

3. Change of Control Severance Benefits.

(a) Change of Control. Upon the occurrence of a Change of Control, the unvested portion of all Executive's outstanding equity awards (including, but not limited to, stock options and restricted stock grants) with a performance-based vesting schedule shall be automatically amended to convert such equity awards to a time-based vesting schedule (the "Converted Awards"). Each Converted Award shall vest as to one forty-eighth (1/48th) of the shares subject to the award each month, provided that Executive remains an employee of the Company through each such date. Executive shall be given vesting credit from the original date of grant as if each Converted Award had been subject to a time-based vesting schedule from its grant date. For purposes of this Section 3(a), the number of shares subject to the Converted Award shall be the amount of the award that is targeted for achievement during the total performance period (whether measured in one or more fiscal periods) in which the Change of Control occurs, regardless of any actual level of achievement subsequently determined. Converted Awards shall be subject to the provisions of Section 3(b)(iii). In the event of a conflict between the terms and conditions of the PCTEL, Inc. Stock Plan, as amended from time to time (the "Stock Plan"), the agreements relating to Executive's equity awards, and this Section 3(a), the terms and conditions of this Section 3(a) shall prevail and any subsequent documents that purport to modify this Agreement shall be without effect unless they specifically refer to this Agreement.

(b) Involuntary Termination other than for Cause, Death or Disability or Voluntary Termination for Good Reason Following A Change of Control. If, within twelve (12) months following a Change of Control, Executive's employment is terminated (1) involuntarily by the Company other than for Cause, death or Disability or (2) by Executive pursuant to a Voluntary Termination for Good Reason, and in either case Executive enters into a standard form of release of claims with the Company pursuant to Section 3(g), the Company shall provide Executive with the following benefits upon such termination:

(i) Severance Payment. Executive shall be entitled to receive a lump-sum cash payment in an amount equal to two hundred percent (200%) of the Executive's annual base salary. Such severance payment will be made on the sixtieth (60th) day following the date of Executive's termination of employment.

(ii) Continued Executive Benefits. Provided (1) Executive constitutes a qualified beneficiary, as defined in Section 4980B(g)(1) of the Internal Revenue Code of 1986, as amended (the "Code") and (2) Executive elects continuation coverage pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA"), within the time period prescribed pursuant to COBRA, the Company will reimburse Executive for the cost of COBRA premiums for

continued health (i.e., medical, dental and vision) coverage at the same level of coverage as was provided to Executive immediately prior to the Change of Control and at the same ratio of Company premium payment to Executive premium payment as was in effect immediately prior to the Change of Control (the “Company-Paid Coverage”). If Company-Paid Coverage included Executive’s eligible dependents immediately prior to the Change of Control, such reimbursement will cover such dependents in the same proportion as provided above. Company-Paid Coverage shall continue until the earlier of (x) twelve (12) months following the date of Executive’s termination, and (y) the date upon which Executive or Executive’s eligible dependents become covered under another employer’s group medical, dental and vision insurance benefit plans.

(iii) Equity Compensation Accelerated Vesting. One Hundred percent (100%) of Executive’s outstanding equity awards (including but not limited to stock options and restricted stock grants) with a time-based vesting schedule (including the Converted Awards) shall immediately accelerate and become completely vested.

(c) Voluntary Resignation. If Executive's employment terminates by reason of the Executive's voluntary resignation (other than a Voluntary Termination for Good Reason), then Executive shall not be entitled to receive severance or other benefits except for those (if any) established under the Company's then existing severance and benefits plans or pursuant to other written agreements with the Company.

(d) Disability; Death. If Executive's employment with the Company terminates as a result of the Executive's Disability, or if Executive's employment is terminated due to the death of the Executive, then the Executive shall not be entitled to receive severance or other benefits except for those (if any) established under the Company's then existing severance and benefits plans or pursuant to other written agreements with the Company.

(e) Termination for Cause. If Executive is terminated for Cause, then Executive shall not be entitled to receive severance or other benefits.

(f) Termination Apart from Change of Control. In the event Executive's employment is terminated for any reason, either prior to the occurrence of a Change of Control or after the twelve (12) month period following a Change of Control, then Executive shall be entitled to receive severance and any other benefits only as established under the Company's then existing severance and benefits plans or pursuant to other written agreements with the Company.

(g) Separation Agreement and Release. The receipt of any severance payments or benefits pursuant to this Agreement will be subject to Executive signing, delivering and not revoking a separation agreement and release of claims (in a form reasonably acceptable to the Company) provided that such separation agreement and release of claims is effective within sixty (60) days following Executive’s termination date. No severance pursuant to this Agreement will be paid or provided until the separation

agreement and release of claims becomes effective. If the 60th day after the termination date is in the subsequent calendar year, no payment will be made prior to January 1 of such subsequent calendar year. If Executive should die before all of the severance amounts have been paid, such unpaid amounts will be paid in a lump-sum payment promptly following such event to Executive's designated beneficiary, if living, or otherwise to the personal representative of Executive's estate.

4. Definition of Terms. The following terms referred to in this Agreement shall have the following meanings:

(a) Cause. "Cause" means (i) any material act (that remains uncured for thirty (30) days following written notice from the Company) which permits the Company to terminate a written employment agreement or similar arrangement between Executive and the Company, for "cause" or a substantially equivalent term as defined in such agreement or arrangement, or (ii) in the event there is no such agreement or arrangement, or the agreement or arrangement does not define the term "cause" or a substantially equivalent term, then "Cause" means: (A) an act of personal dishonesty taken by Executive in connection with his responsibilities as an employee and intended to result in substantial personal enrichment of Executive, (B) Executive being convicted of, or a plea of *nolo contendere* to, a felony, (C) a willful act by Executive which constitutes gross misconduct and which is injurious to the Company, or (D) following delivery to Executive of a written demand for performance from the Company which describes the basis for the Company's reasonable belief that Executive has not substantially performed his duties, continued violations by Executive of Executive's obligations to the Company which are demonstrably willful and deliberate on Executive's part.

(b) Change of Control. "Change of Control" means the occurrence of any of the following events:

(i) Any "person" (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended) becomes the "beneficial owner" (as defined in Rule 13d-3 under said Act), directly or indirectly, of securities of the Company representing fifty percent (50%) or more of the total voting power represented by the Company's then outstanding voting securities who is not already such as of the Effective Date of this Agreement; or

(ii) The consummation of the sale or disposition by the Company of all or substantially all the Company's assets (for these purposes a substantial sale or disposition will in no event be considered to occur unless at least fifty percent (50%) of the total gross fair market value of all of the assets of the Company are sold or disposed of); or

(iii) The consummation of a merger or consolidation of the Company with any other corporation, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing

to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or its parent) at least fifty percent (50%) of the total voting power represented by the voting securities of the Company or such surviving entity or its parent outstanding immediately after such merger or consolidation.

Notwithstanding the foregoing, a transaction will not be deemed a Change of Control unless the transaction qualifies as a change in control event within the meaning of Section 409A of the Code (“Section 409A”).

(c) Disability. “Disability” means that:

(i) Executive is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than twelve (12) months;

(ii) Executive is, by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than twelve (12) months, receiving income replacement benefits for at least three (3) months under the Company’s accident and health plan; or

(iii) Executive is determined to be totally disabled by the Social Security Administration.

(d) Voluntary Termination for Good Reason. “Voluntary Termination for Good Reason” means Executive voluntarily resigns within thirty (30) days following the expiration of any cure period (as discussed below) after the occurrence of any of the following, without Executive’s written consent:

(i) a material diminution by the Company in the annual base salary of Executive as in effect immediately prior to such reduction (other than a reduction that applies to Company officers and/or managers generally);

(ii) a material change in the geographic location at which Executive must perform service (in other words, the relocation of Executive to a facility or a location more than fifty (50) miles from the then present location); or

(iii) any other action or inaction that constitutes a material breach by the Company of this Agreement.

provided, however, that before Executive’s employment may be terminated by a Voluntary Termination for Good Reason, (A) Executive must provide written notice to the Company, within ninety (90) days of the initial existence of the Voluntary

Termination for Good Reason condition, setting forth the reasons for Executive's intention to terminate his employment as a result of a Voluntary Termination for Good Reason, and (B) the Company must have an opportunity within thirty (30) days following delivery of such notice to cure the Voluntary Termination for Good Reason condition.

For the avoidance of doubt, the voluntary resignation by Executive after the occurrence of either of the following shall not constitute grounds for a "Voluntary Termination for Good Reason": (1) a reduction of Executive's duties, titles, authority or responsibilities, relative to Executive's duties, title, authority or responsibilities as in effect immediately prior to such reduction, as a result of (x) the Company being acquired and made part of a larger entity, or (y) a restructuring of the Company and/or its subsidiaries, or a restructuring of the Company's employees' functions, and/or reporting relationships; or (2) a material reduction of the facilities or perquisites (including office space and location) available to Executive.

Notwithstanding anything herein to the contrary, the Company agrees that it will not materially reduce Executive's aggregate level of employee benefits, including bonuses, to which Executive was entitled immediately prior to such reduction with the result that Executive's aggregate benefits package is materially reduced (other than a reduction that generally applies to Company officers and/or managers).

5. Non-Compete and Non-solicitation.

(a) Non-Compete. Executive agrees and acknowledges that Executive's right to receive the payments and benefits set forth in this Agreement (to the extent Executive is otherwise entitled to such payments and benefits) shall be conditioned upon Executive not directly or indirectly engaging in (whether as an executive, consultant, agent, proprietor, principal, partner, stockholder, corporate officer, director or otherwise), nor having any ownership interest in or participating in the financing, operation, management or control of, any person, firm, corporation or business that is a Restricted Business; provided, however, that nothing in this Section 5(a) shall prevent Executive from owning as a passive investment less than one percent (1%) of the outstanding shares of the capital stock of a publicly-held company if (A) such shares are actively traded on the New York Stock Exchange or the Nasdaq Global Market and (B) Executive is not otherwise associated with such company or any of its affiliates. A "Restricted Business" is a business which is engaged in the design, development, manufacture, production, marketing, sale, licensing or servicing of any products, or the provision of any services, that are the same as or substantially similar to those of the Company, or a business which is otherwise one of the top 10 competitors of the Company as identified by the Company in its then most recent presentation to the Board of Directors of the Company. The Company will provide the names of such companies to Executive. Upon any breach of this section, all severance payments and benefits pursuant to this Agreement shall immediately cease.

(b) Non-Solicitation. During the twelve (12) months following the termination of Executive's employment with the Company for any reason, Executive agrees and acknowledges that Executive's right to receive the payments and benefits Executive is to receive herein (to the

extent Executive is otherwise entitled to such payments and benefits), shall be conditioned upon Executive not either directly or indirectly soliciting, inducing, attempting to hire, recruiting, encouraging, taking away, hiring any employee of the Company or causing an employee to leave his/her employment either for Executive or for any other entity or person.

6. Section 280G. Notwithstanding any other provision of this Agreement to the contrary, in the event that the amount of severance and other benefits payable to Executive under this Agreement (including, without limitation, the acceleration of any payment or the accelerated vesting of any payment or other benefit), together with any payments, awards or benefits payable under any other plan, program, arrangement or agreement maintained by the Company or one of its affiliates, would constitute an “excess parachute payment” (within the meaning of Section 280G of the Code), the payments under this Agreement shall be reduced (by the minimum possible amount) until no amount payable to Executive under this Agreement constitutes an “excess parachute payment” (within the meaning of Section 280G of the Code); provided, however, that no such reduction shall be made if the net after-tax payment (after taking into account federal, state, local or other income, employment and excise taxes) to which Executive would otherwise be entitled without such reduction would be greater than the net after-tax payment (after taking into account federal, state, local or other income and employment taxes) to Executive resulting from the receipt of such payments with such reduction. Unless the Company and Executive otherwise agree in writing, any determination required under this Section shall be made in writing, by the Company’s independent public accountants (the “Accountants”), whose determination shall be conclusive and binding upon Executive and the Company for all purposes. For purposes of making the calculations required by this Section, the Accountants may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code. The Company and Executive shall furnish to the Accountants such information and documents as the Accountants may reasonably request in order to make a determination under this Section. The Company shall bear all costs the Accountants may reasonably incur in connection with any calculations contemplated by this Section.

7. Section 409A.

(a) Amounts paid under this Agreement are intended to satisfy the requirements of the “short term deferral” rule set forth in Section 1.409A-1(b)(4) of the Treasury Regulations and thus, will not constitute a “deferral of compensation” governed by Section 409A.

(b) Amounts paid under this Agreement that do not satisfy the requirements of the “short term deferral” rule as described in clause 7(a) above are intended to satisfy the requirements of the “separation pay plan” rule set forth in Section 1.409A-1(b)(9)(iii) of the Treasury Regulations, and thus, will not constitute a “deferral of compensation” governed by Section 409A.

(c) Amounts paid under this Agreement are intended to constitute “separate payments” for purposes of Treasury Regulation Section 1.409A-2(b)(2).

(d) The Company intends the amounts paid under this Agreement to satisfy either the “short term deferral” rule (described in clause 7(a) above) or the “separation pay plan” rule (described in clause 7(b) above) so that none of the severance payments and benefits provided hereunder will be deemed a deferral of compensation that is subject to the additional tax imposed under Section 409A and any ambiguities herein will be interpreted to satisfy the “short term deferral” rule set forth in Section 1.409A-1(b)(4) of the Treasury Regulations, or alternatively, to satisfy the “separation pay plan” rule set forth in Section 1.409A-1(b)(9)(iii) of the Treasury Regulations. The Company and Executive agree to work together in good faith to consider amendments to this Agreement and to take such reasonable actions which are necessary, appropriate or desirable to avoid imposition of any additional tax or income recognition prior to actual payment of severance or other benefits to Executive under Section 409A.

(e) To the extent (i) the requirements for the “short term deferral” rule and/or the “separation pay plan” rule are not satisfied, and (ii) Executive is a “specified employee” of the Company (or any successor entity thereto) within the meaning of Section 409A(a)(2)(B)(i) on the date of Executive’s termination (other than a termination due to death), then the portion of the severance payments payable to Executive, if any, under this Agreement, when considered together with any other severance payments or separation benefits that is deemed a deferral of compensation under Section 409A shall be delayed until the earlier of (A) the date that is six (6) months and one (1) day after the date of termination, or (B) the date of Executive’s death (such date, the “Delayed Initial Payment Date”), and the Company (or the successor entity thereto) shall (x) pay to Executive a lump sum equal to the amount Executive would have otherwise received on or before the Delayed Initial Payment Date, without any adjustment on account of such delay, as if the payments had not been delayed pursuant to this section, and (y) pay the balance of the payments in accordance with any applicable payment schedules set forth herein. Notwithstanding anything herein to the contrary, if Executive dies following his or her termination, but prior to the six (6) month anniversary of Executive’s termination date, then any payments which have been delayed in accordance with this clause will be payable in a lump sum as soon as administratively practicable after the date of Executive’s death.

8. Successors.

(a) Company's Successors. Any successor to the Company (whether direct or indirect and whether by purchase, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company's business and/or assets shall assume the obligations under this Agreement and agree expressly to perform the obligations under this Agreement in the same manner and to the same extent as the Company would be required to perform such obligations in the absence of a succession. For all purposes under this Agreement, the term “Company” shall include any such successor to the Company which executes and delivers an assumption agreement consistent with this Section 8(a) or which becomes bound by the terms of this Agreement by operation of law.

(b) Executive's Successors. The terms of this Agreement and all rights of Executive hereunder shall inure to the benefit of, and be enforceable by, the Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

9. Notice.

(a) General. Notices and all other communications contemplated by this Agreement shall be in writing and shall be deemed to have been duly given when personally delivered or one (1) business day following mailing via Federal Express or similar overnight courier service. In the case of Executive, mailed notices shall be addressed to him or her at the home address which he/she most recently communicated to the Company in writing. In the case of the Company, mailed notices shall be addressed to its corporate headquarters, and all notices shall be directed to the attention of its Secretary.

Notice of Termination. Any termination by the Company for Cause shall be communicated by a notice of termination to Executive given in accordance with Section 9(a). Such notice shall indicate the specific termination provision in this Agreement relied upon, shall set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination under the provision so indicated, and shall specify the termination date (which shall be not more than thirty (30) days after the giving of such notice). A termination by Executive pursuant to a Voluntary Termination for Good Reason shall be communicated by a notice of termination to the Company in accordance with Section 4(d) and Section 9(a).

10. Miscellaneous Provisions.

(a) No Duty to Mitigate. Executive shall not be required to mitigate the value of any benefits contemplated by this Agreement, nor shall any such benefits be reduced by any earnings or benefits that the Executive may receive from any other source.

(b) Waiver. No provision of this Agreement shall be modified, waived or discharged unless the modification, waiver or discharge is agreed to in writing and signed by Executive and by two authorized officers of the Company (other than the Executive). No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party shall be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(c) Integration. This Agreement represents the entire agreement and understanding between the parties as to the subject matter herein and supersedes all prior or contemporaneous agreements related to the subject matter of this Agreement whether written or oral. No waiver, alteration or modification of any of the provisions of this Agreement will be binding unless in writing and signed by duly authorized representatives of the parties (except that the Stock Plan may be revised or modified in

accordance with its terms) and any subsequent documents that purport to modify this Agreement shall be without effect unless they specifically refer to this Agreement.

(d) Choice of Law. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of Illinois.

(e) Severability. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision hereof, which shall remain in full force and effect.

(f) Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together will constitute one and the same instrument.

IN WITNESS WHEREOF, each of the parties has executed this Agreement, in the case of the Company by its duly authorized officer, as of the day and year set forth below.

PCTEL, INC.

EXECUTIVE:

By: _____

Title: _____

Date: _____

Date: _____

EXHIBIT 10.10

SEPARATION AGREEMENT AND RELEASE

This Separation Agreement and Release ("Agreement") is made by and between **John W. Schoen** of 1619 East Greenwood, Mt. Prospect, Illinois 60056 ("Employee") and **PCTEL, Inc.**, a Delaware corporation, including its employees, directors, officers, shareholders, successors and assigns ("Company" or "PCTEL"). Employee and PCTEL may collectively sometimes be referred to as the "Parties".

WHEREAS, Employee and PCTEL have previously entered into the John W. Schoen Employment Agreement amended and restated on December 11, 2008 ("Employment Agreement");

WHEREAS, PCTEL and Employee have also previously entered into one or more restricted stock and stock option award agreements, subject to the terms and conditions of PCTEL's Stock Plan, as amended and restated (the "Stock Plan");

WHEREAS, Employee's employment with PCTEL will end on November 30, 2018 (the "Separation Date"); and

WHEREAS, the Parties desire to effect a final settlement of all claims and issues;

NOW, THEREFORE, in consideration of the execution hereof and the promises made herein, the Parties hereby agree as follows:

1. In accordance with Section 7(a)(i) of the Employment Agreement, PCTEL shall pay Employee twelve months of Employee's current base salary (Three Hundred Ten Thousand Dollars (\$310,000)), less applicable withholding, in twenty-four substantially equal payments made on each regular pay date following the execution and delivery to the Company of this Agreement, but in no event before five (5) business days have elapsed beyond the expiration of the revocation period for the release and waiver referred to in Section 15(f) below (the "Payment Date").

2. In accordance with Section 7(a)(iii) of the Employment Agreement, PCTEL shall accelerate the vesting of an aggregate of 25,666 restricted shares of PCTEL common stock previously awarded to Employee, as follows:

- (i) 5,000 from the grant identified as 4218,
- (ii) 14,000 from the grant identified as 4554; and
- (iii) 6,666 from the grant identified as 4595;

all of which would have vested on February 11, 2019. All such restricted shares will vest on the Payment Date.

3. In addition, on the Separation Date the Employee may have vested options for PCTEL common stock ("Options") remaining from the grants identified as number 3654 and 3740. In accordance with the Stock Plan, Employee has a period of ninety (90) days from the Separation Date within which to exercise the Options.

4. Employee's health insurance benefits will cease as of November 30, 2018. Subject to Employee's right to continue health insurance under COBRA, should Employee elect COBRA within the required period, in lieu of the contributory payment described in Section 7(a)(ii) of the Employment Agreement, PCTEL agrees to pay the entire cost of the COBRA premiums for a period of twelve (12) months for continued health coverage (i.e., medical, dental and vision as currently offered by Company) for Employee and Employee's eligible dependents who received health care coverage under Company health care plans as of November 1, 2018. Employee will be responsible for any and all COBRA payments thereafter.

5. On the next regular pay date following the Separation Date, Employee will be paid a lump sum (less applicable withholding) equivalent to earned but unused paid time off (PTO), if any, through the Separation Date.

6. On the next regular pay date following the Separation Date, Employee will receive a refund from the Employee Stock Purchase Program (ESPP), if applicable.

7. Employee will receive all retirement benefits for which Employee is eligible, if any, in accordance with the applicable benefit plan documents. Employee will cease and no longer accrue employee benefits, including but not limited to PTO, as of the Separation Date, and Employee's participation in all other benefits and incidents of employment shall cease on the Separation Date.

8. Employee agrees that he will not take any action, or make any statement, whether orally or in writing (including through social media), which in any manner disparages or impugns the reputation or goodwill of PCTEL and that to do so will constitute a breach of this Agreement.

Confidential

9. Employee is to direct all requests for job references to PCTEL's Vice President, Corporate Resources and Chief Risk Officer, at 471 Brighton Drive, Bloomingdale, Illinois 60108, who will respond only to written reference inquiries with the following information: dates of employment, position held, and confirmation of last salary. To the extent that Employee directs reference requests to persons at PCTEL other than PCTEL's Vice President, Corporate Resources and Chief Risk Officer, PCTEL will not be liable for any statements made by such non-designated individuals regarding Employee. Further, the Parties stipulate and agree that PCTEL has no liability for any statements made regarding Employee by persons not employed by PCTEL at the time such statements are made.

10. Employee represents and warrants that he has returned to PCTEL all PCTEL equipment and/or other property, including but not limited to the following:

Laptop computer (#2294) and peripherals;
Disks, computer files, thumb or other drives;
Company information;
Employee identification badge; and
Other materials which he had in his possession or subject to his control relating to PCTEL and/or any of its customers, vendors and/or employees ("Materials").

Employee further warrants and acknowledges that he has not retained any such Materials (including any copies or duplicates thereof).

11. Employee agrees to submit an expense report to PCTEL for all unpaid legitimate business expenses incurred in connection with his employment with PCTEL no later than December 31, 2018.

12. Employee acknowledges that, during his employment, he may have become aware of trade secrets and other confidential, proprietary business information involving PCTEL or its customers. Employee further acknowledges that he is not to disclose any trade secrets, privileged or confidential information learned in the course of Employee's employment with PCTEL, and that pursuant to Section 10 above Employee is required to return to PCTEL any such trade secrets, privileged or confidential materials currently in his possession, whether in hard copy, or electronic format. If Employee has turned over such trade secret, privileged or confidential PCTEL information and/or documents, whether in hard copy or electronic format, to any third party, Employee is required, as a condition of this Agreement, to take all necessary efforts to retrieve such information and return it to PCTEL as well as to inform PCTEL's General Counsel of the identity of all such third parties so that PCTEL may take whatever action is necessary to retrieve its information.

13. In exchange for the payments and benefits set forth in this Agreement, Employee agrees to the following post-employment covenants:

- (a) Employee agrees that for the one (1) year period following the Separation Date, he will not directly or indirectly encourage or solicit any individual to leave the employ of the Company without the Company's prior written consent.
- (b) Employee agrees that for the one (1) year period following the Separation Date, he will not directly or indirectly be employed by or associated with, or receive compensation from, any competitor of the Company listed on Exhibit A hereto.
- (c) Employee agrees that during the one (1) year period following the Separation Date, he will give written notice to his new employers of his obligations under this Agreement, including but not limited to this Section 13. Further, during such period Employee agrees to promptly inform the Company, in writing, of the name and address of his subsequent employers. Finally, Employee consents to the Company providing his subsequent employers with information, including a copy of this Agreement, regarding ongoing obligations under this Agreement.

The foregoing agreements are intended to supersede the obligations of Employee under paragraphs 5(g) and (h) of that certain Proprietary Information and Inventions Agreement effective November 12, 2001 ("PIIA").

14. In exchange for the foregoing benefits and payments, Employee, for himself, his heirs, executors and administrators will release and forever discharge PCTEL from any and all legally waivable claims, demands, sums of money, contracts, controversies, agreements, promises, damages, costs, causes of action and liabilities of any kind or character whatsoever, from the beginning of time to the date Employee signs this Agreement, relating to his employment at PCTEL, including the termination of such employment, except insofar as it may be necessary to take action with respect to the enforcement of this Agreement or as specified in Section 15(d). This release includes but is not limited to, all claims which

could have been raised under any local, state or federal statute (including specifically under the Worker Adjustment and Retraining Act (WARN) or any similar state statute, if applicable), ordinance, regulation and/or under any express or implied contract and/or under common law.

15. With respect to the foregoing release and waiver, Employee acknowledges the following:

- (a) The foregoing release and waiver is entered into knowingly, voluntarily and with the opportunity for advice by Employee's personal attorney.
- (b) The entitlements set forth in this Agreement are in satisfaction of the Company's obligations under the Employment Agreement.
- (c) Nothing contained in this Agreement purports to release any of Employee's rights or claims that may arise after the date of execution of this Agreement.
- (d) Nothing contained in this Agreement prohibits Employee from reporting possible violations of federal law or regulation to any governmental agency or regulatory authority, including but not limited to the Securities and Exchange Commission, or from making other disclosures that are protected under the whistleblower provisions of federal law or regulation.
- (e) This Agreement shall not give rise to any legal rights or obligations with respect to any waiver of claims until Employee is afforded a period of forty-five (45) calendar days within which to consider the terms of this Agreement.
- (f) Employee shall be afforded seven (7) calendar days following the execution of this Agreement within which Employee may revoke the Agreement insofar as it relates to the Age Discrimination in Employment Act, if applicable, and none of the terms and provisions of this Agreement shall become effective or enforceable with respect to any waiver of claims under the Age Discrimination in Employment Act until such revocation period has expired. Any such revocation must be in writing, including email, and directed to Shelley J. Bacastow, Vice President and General Counsel, PCTEL, Inc., 471 Brighton Drive Bloomingdale, Illinois 60108. Ms. Bacastow's email address is: shelly.bacastow@pctel.com and her telephone number is 630.339.2115. Although such revocation must be in writing, Ms. Bacastow must also be informed by telephone of the revocation on or before the last day of the revocation period.

16. Employee acknowledges and agrees that if he breaches any of the terms of this Agreement, then PCTEL may (a) stop the payment of any benefits pursuant to this Agreement not yet paid; (b) seek recovery of any payments already made pursuant to this Agreement, and (c) seek the payment of all damages, costs and expenses (including reasonable attorneys' fees) incurred by PCTEL in connection with such suit, action or breach.

17. The Parties hereby stipulate and agree that nothing contained in this Agreement shall be construed as an admission of liability, culpability or wrongdoing by either Party.

18. The Parties agree that this Agreement shall be construed and enforced in accordance with the laws of the State of Illinois without regard to choice of law or conflict of law principles. The Parties further agree that any legal proceedings relating to this Agreement will be handled in accordance with paragraph 12(c) of the Employment Agreement (Arbitration and Equitable Relief); provided, however, if the provisions of such paragraph are disallowed, the Parties agree that any legal proceedings relating to this Agreement shall be instituted in federal or state court in Cook County, Illinois, and the Parties consent to the jurisdiction of such courts for such actions. The Parties agree to waive the right to a jury trial of any dispute or claim.

19. Should any provision of this Agreement, in whole or in part, be held invalid or unenforceable by operation of law or otherwise, all other provisions shall remain in full force and effect and the Parties agree that a court may modify any provision to make it valid or enforceable in whole or in part.

20. In addition to the specific portions of the Employment Agreement and PIIA expressly superseded in various provisions of this Agreement, this Agreement is also intended to supersede the Amended and Restated Management Retention Agreement dated April 8, 2013 between the Parties. It is not, however, intended to supersede the Indemnification Agreement dated November 19, 2009 between the Parties.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the respective dates set forth below.

PCTEL, Inc.

Dated: 11/9/2018
Les Sgnilek

By /s/Les Sgnilek
Vice President, Corporate Resources and Chief Risk Officer

John W. Schoen

Dated: 11/9/2018

/s/ John W. Schoen

EXHIBIT A
PROHIBITED COMPANIES

The following are the entities referenced in section 13(c):

Airgain Inc.

Epiq Solutions

Mobile Mark, Inc.

Panorama Antennas Ltd.

Rohde & Schwarz GmbH & Co KG

Taoglas

Venture Corporation Limited

PCTEL, INC.

SALES COMPENSATION PLAN

Prepared specifically for:
Arnt Arvik

FY 2018

PCTEL, Inc.
2018 Sales Compensation Plan
This plan supersedes all previous compensation plans

EXHIBIT 10.11

I. Introduction

The PCTEL Sales Compensation Plan (the “Plan”) has been designed to:

- Align sales compensation with corporate profitability;
- Motivate, incent and reward sales behavior in order to achieve PCTEL’s corporate and financial objectives; and
- Provide a Plan that is equitable and consistent across regions and product lines.

II. Definitions

Base Salary – Base Salary is the amount payable to Participant as non-variable compensation for services rendered to the Company. It is determined by Company management on an annual basis.

Commission – Commission is the variable amount payable to Participant as compensation for sales to customers as set forth in Section IV below.

Commissionable Revenue – Revenue earned by the Company (determined in accordance with Generally Accepted Accounting Principles in the United States of America) from sales of products, services, NRE, maintenance charges, royalties and training charges, excluding freight, loans, interest charges, and other similar charges.

Company – PCTEL, Inc. and its subsidiaries

RFS Total Quota – Commission earned from Commissionable Revenue generated by total RF Solutions sales, the Participant will receive the percentage of Base Salary indicated on Attachment A.

Participant – The sales professional for whom this Plan is prepared and whose name is found on the cover page of this Plan.

Payout Factor – The percentage determined from the chart in Section V based upon the percentage of Quota attained.

Plan Administrators – The CFO together with the Vice President, Corporate Resources and Chief Risk Officer, and the Senior Vice President & General Manager-RFS.

Plan Year – The Plan Year is January 1, 2018 through December 31, 2018.

Quota Assignment Statement (Attachment A) – The signed statement between PCTEL and Participant defining the amount of the Quota and related objectives, if any.

Target Commission – The amount or percentage of Commission identified in Attachment A as Participant’s personal target.

III. General

Plan Administration: The Plan Administrators will manage the Plan and have full discretion to construe the terms of the Plan, determine eligibility to participate in the Plan, and determine whether Commission is payable under the Plan.

Adjustments: PCTEL reserves the right, without notice, to make any adjustments or revisions to the Plan. In the event of any revision or adjustment to the Plan, including Attachment A, an amended Plan will be prepared and signed by all parties. No handwritten changes will be accepted.

EXHIBIT 10.11

Interpretation: Any questions relative to interpretation and administration of this Plan shall be referred to the CFO whose interpretation will be final and binding.

Termination of Employment: The final amount, if any, of Commission due to Participant upon termination of employment is the Commission earned as provided in this Plan up to and including the termination date.

Participation: Plan Participants are not eligible for any other management bonus or similar plan offered by the Company.

IV. Annual Quota

At the beginning of each fiscal year, the Senior Vice President & General Manager-RFS, working with the Vice President, Corporate Resources and Chief Risk Officer, will set the RFS Total Quota and Target Commission potential for the Participant on the Quota Assignment Statement (Attachment A.)

There will be no retroactive customer account changes without approval from the Senior Vice President & General Manager - RFS. Any changes will be documented in writing by Participant, the CFO, the Senior Vice President & General Manager-RFS, and the Vice President, Corporate Resources and Chief Risk Officer, with a copy to the Finance Department.

V. Commission

Participant will earn a Commission as follows:

Commission Earned: Commission is calculated based upon the annual amount of Commissionable Revenue generated by the Participant.

Returns and Credits: In the event that a product for which Participant received credit as Commissionable Revenue is returned (or the Company credited the customer's account as though the product was returned), the corresponding amount of Commissionable Revenue related to the returned or credited product shall be subtracted from the Commissionable Revenue otherwise credited to the Participant. The amount of Commissionable Revenue will be subtracted in the quarter the product return or product credit is processed. Further, if one or more assigned accounts are greater than 90 days past the due date established by the applicable payment terms, the corresponding amount of Commissionable Revenue previously credited to the Participant shall be subtracted and the next quarterly Commission payment shall be adjusted accordingly. Such Commissionable Revenue will be added back in the quarter in which the payment is received from the customer and will be included in the next succeeding Commission payment. No Commission will be payable for any write-off amounts.

Commission Calculation - After the end of first fiscal quarter and monthly thereafter, the Finance Department will calculate the year-to-date Commissionable Revenue from invoices issued related to RFS product and services. The "**Payout Factor**" is determined by locating the percentage of Individual Quota attained year-to-date in the table below and extrapolating to identify the Quota percentage that falls between the percentages indicated in the table (e.g., 77% attainment would be a 61.67% payout factor). The Commission earned for each fiscal quarter is calculated as follows:

$$\text{PAYOUT FACTOR} \times \text{TARGET COMMISSION} \times \text{BASE SALARY}.$$

The amount of Commission earned as set forth above will be paid to Participant, except as follows:

PCTEL, Inc.
2018 Sales Compensation Plan
This plan supersedes all previous compensation plans

EXHIBIT 10.11

- 1) Commissions paid in prior fiscal quarters of the fiscal year are deducted from the current commission calculation in such fiscal year.
- 2) There is a “cap” or upper limit at 200% of Quota attainment so that achieving greater Commissionable Revenue beyond 200% of Quota, which equates to a 250% Payout Factor, will not result in additional Commission.

Commission Table:

% Quota Attained	Payout Factor
0%	0%
10%	6%
20%	12%
30%	18%
40%	24%
50%	30%
60%	36%
70%	42%
75%	60%
80%	64%
90%	81%
100%	100%
110%	121%
120%	144%
130%	169%
140%	196%
150%	205%
160%	214%
170%	223%
180%	232%
190%	241%
≥ 200%	250%

VI. Modifications due to Product Discontinuation

PCTEL, Inc.
2018 Sales Compensation Plan
This plan supersedes all previous compensation plans

EXHIBIT 10.11

Discontinuance of Products during Plan Year – During the fiscal year, products may be discontinued and pulled from the sales cycle. As one example, this can occur when a business segment is sold off. When appropriate, the related Quota and objectives will be adjusted following management approval.

VII. Commission Payment Timing and Process

The Commission earned by Participant will be paid forty-five (45) days after the close of the first calendar quarter and forty-five (45) days after the end of each month thereafter

ATTACHMENT A**PCTEL, INC.**

PCTEL, Inc.
2018 Sales Compensation Plan
This plan supersedes all previous compensation plans

EXHIBIT 10.11

QUOTA ASSIGNMENT STATEMENT

NAME: Arnt Arvik

Quota: \$24,000,000

Sales Territory and/or Accounts: All RF Solutions Sales

Your Target Commission Is: 67% of Base Salary

I acknowledge that I have read, understand and agree to the terms and conditions of this specifically prepared PCTEL, INC. Sales Compensation Plan for FY 2018.

Arnt Arvik 2/11/2018
Employee/Participant Date

Jeff Miller 2/12/2018
Senior Vice President & General Manager- RFS Date

Les Sgnilek 2/8/2018
VP Corporate Resources & Chief Risk Officer Date

JW Schoen 2/8/2018
CFO Date

PCTEL, Inc.
2018 Sales Compensation Plan
This plan supersedes all previous compensation plans

FIRST AMENDMENT TO SALES COMPENSATION AGREEMENT

THIS FIRST AMENDMENT TO SALES COMPENSATION AGREEMENT (the “**Amendment**”) is entered into and effective as of September 20, 2018 by and between PCTEL, Inc., a Delaware corporation having a place of business at 471 Brighton Drive, Bloomingdale, IL 60108 (“**PCTEL**”), and Arnt Arvik, a PCTEL employee with a residence at 15701 Berkeley Drive, Haymarket, VA 20169 (“**Participant**”). Any capitalized terms used herein but not defined shall have the meanings given to such terms in the Agreement (as hereinafter defined).

WHEREAS, PCTEL and Participant are parties to that certain PCTEL, Inc. Sales Compensation Plan Prepared Specifically for Arnt Arvik FY 2018, executed by Participant on February 11, 2018 (the “**Agreement**”), and

WHEREAS, the Board of Directors of PCTEL (the “**Board**”) announced on August 28, 2018 that PCTEL is reorganized to operate and report as one segment (the “**Reorganization**”); and

WHEREAS, in connection with the Reorganization, the Board has elected the Participant as Chief Sales Officer responsible for all sales of the Company effective as of August 28, 2018;

WHEREAS, PCTEL and Participant wish to amend certain terms of the Agreement to reflect the changes resulting from the Reorganization;

NOW, THEREFORE, in consideration of the mutual covenants and promises hereinafter set forth, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Amendments to Agreement.

1.1 The following definitions in Section II of the Agreement are hereby amended as follows:

“**Commission** – Commission is the variable compensation payable to Participant for sales to customers. It is calculated in accordance with Section V below.”

“**RFS Total Quota** – The target Commissionable Revenue set by management to be generated from sales of RF Solutions products and services for the applicable period.”

1.2 The following definition is hereby included in Section II of the Agreement:

“**Total Quota** – The target Commissionable Revenue set by management to be generated from sales of PCTEL products and services for the period October 1, 2018 to December 31, 2018.”

1.3 The parties agree as follows:

(a) that the “Quota” set forth on Attachment A to the Agreement (which is also referenced as “Individual Quota” in the Agreement) is equal to the RFS Total Quota described in Section IV of the Agreement;

(b) that the Quota designated on Attachment A shall apply solely to the period January 1, 2018 to September 30, 2018 and shall be pro-rated for such period (resulting in a pro-rated Quota of \$18,000,000 for such period);

EXHIBIT 10.11.1

- (c) that Participant's Commission for such period shall be calculated in accordance with Section V of the Agreement based upon the attainment of the pro-rated Quota;
- (d) that for the period October 1, 2018 to December 31, 2018, Participant's Quota (which is set forth on Attachment A-2 attached to this Amendment) is equal to the Total Quota; and
- (e) that Participant's Commission for the period October 1, 2018 to December 31, 2018 shall be calculated in accordance with Section V of the Agreement based upon the attainment of the Total Quota.

2. General. This Amendment is governed by and construed in accordance with the laws of the State of Illinois and forms part of and is subject to the terms and conditions of the Agreement; however, the terms of this Amendment shall prevail to the extent of any conflict or inconsistency between the terms of this Amendment and the Agreement, and all references in the Agreement to the "Agreement," "herein," "hereof" or using similar terms shall be deemed to refer to the Agreement as amended by this Amendment. Except as specifically amended pursuant to the foregoing, the Agreement shall continue in full force and effect in accordance with the terms in existence as of the date of this Amendment. This Amendment, together with the Agreement and the agreements referred to therein and herein, contains the entire agreement of the parties with respect to the matters herein, and may not be amended or modified except by an instrument executed in writing by all parties hereto. The parties may execute this Amendment in one or more counterparts, each of which shall for all purposes be deemed to be an original but both of which together shall constitute one and the same Amendment.

IN WITNESS WHEREOF the parties have executed this Amendment by their duly authorized representatives effective as of the date set forth above:

PCTEL, Inc.

Arnt Arvik, as Participant

By: /s/ Jeffrey Miller
Name: Jeffrey Miller
Title: Senior Vice President and General Manager-
RF Solutions

/s/ Arnt Arvik
Signature

By: /s/ Les Sgnilek
Name: Les Sgnilek
Title: Vice President, Corporate Resources and
Chief Risk Officer

By: /s/ John W. Schoen
Name: John Schoen
Title: Senior Vice President and Chief Finance Officer

EXHIBIT 10.11.1

ATTACHMENT A-2

**PCTEL, INC.
QUOTA ASSIGNMENT STATEMENT**

Participant: Arnt Arvik

Quota for the period October 1, 2018 to December 31, 2018: \$26,159,000

Sales Territory and/or Accounts: Worldwide sales of PCTEL products by employees, independent contractors, representatives and distributors through any and all accounts and sales channels.

PCTEL, INC.

AMENDED AND RESTATED SALES COMPENSATION PLAN

Prepared specifically for:

Arnt Arvik

FY 2019

PCTEL, Inc.
2019 Sales Compensation Plan

EXHIBIT 10.12

I. Introduction

This PCTEL Sales Compensation Plan (the “**Plan**”) has been designed by the Company (as hereinafter defined) to:

- Align sales compensation with corporate profitability;
- Motivate, incent and reward sales behavior in order to achieve PCTEL’s corporate and financial objectives; and
- Provide a compensation plan that is equitable and consistent across regions and product lines.

This Plan supersedes all prior sales compensation plans and any discussions or verbal agreements to the contrary between Participant and the Company.

II. Definitions

Adjusted EBITDA – Adjusted EBITDA is GAAP operating profit excluding stock compensation expenses, amortization of intangible assets, depreciation, restructuring charges, impairment charges, gain/loss on sale of product lines, and expenses included in GAAP operating profit to the extent their recovery is recorded below operating profit.

Base Salary – Base Salary is the amount payable to Participant as non-variable compensation for services rendered to the Company. It is determined by Company management on an annual basis.

CEO – Chief Executive Officer

CFO – Chief Financial Officer

Commission – Commission is a portion of the variable compensation payable to Participant and is related to sales to customers. It is calculated in accordance with Section V below.

Commission Payout Factor – Commission Payout Factor has the meaning set forth in Section V(a).

Commissionable Revenue – Revenue earned by the Company (determined in accordance with GAAP) from sales of products, services, NRE, maintenance charges, royalties and training charges, excluding freight, loans, interest charges, and other similar charges.

Company – PCTEL, Inc. and its subsidiaries

EBITDA Goal – EBITDA Goal has the meaning set forth in Section V(b).

EBITDA Payout Factor – EBITDA Payout Factor has the meaning set forth in Section V(b).

GAAP – Generally Accepted Accounting Principles in the United States of America

Individual Quota – Company management assigns an Individual Quota that represents the total anticipated Commissionable Revenue that management expects Participant to generate based upon the accounts assigned to Participant. Your Individual Quota is set forth on Attachment A.

Participant – The sales professional for whom this Plan is prepared and whose name is found on the cover page of this Plan.

Plan – Plan has the meaning assigned in Section I.

EXHIBIT 10.12

Plan Administrators – The Plan Administrators are the CEO, CFO and Vice President-Corporate Resources.

Plan Year – The Plan Year is January 1, 2019 through December 31, 2019.

Quota Assignment Statement – The Quota Assignment Statement is the statement in the form of Attachment A signed by the Company and Participant defining the amount of the Individual Quota, Target Commission, Target Adjusted EBITDA and target total variable compensation.

Sales Team – The Sales Team refers to all sales personnel who report directly or indirectly to Participant.

Target Commission – The Target Commission, as identified in Attachment A, is the percentage of Base Salary that Participant is anticipated to earn as Commission if Participant achieves his Individual Quota.

III. General

(a) Plan Administration. The Plan Administrators will manage the Plan and have full discretion to construe and interpret the terms of the Plan, determine eligibility to participate in the Plan, and determine whether Commission is payable under the Plan. The determination of the Plan Administrators is final and binding.

(b) Adjustments. PCTEL reserves the right, without notice, to make any adjustments or revisions to the Plan; provided, however, in the event of any adjustment to the information on the Quota Assignment Statement after execution thereof, an amended Plan will be prepared and must be signed by all parties in order to become effective.

(c) Termination of Employment. The final amount of Commission due to Participant upon termination of employment is the Commission earned as provided in this Plan up to and including the termination date.

(d) Participation. Plan participants are not eligible for any other management bonus or similar plan offered by the Company.

IV. Quota

(a) Individual Quota. At the beginning of each fiscal year, the Plan Administrators will specify on a Quota Assignment Statement for each member of the Sales Team, including Participant, the applicable Individual Quota and Target Commission. The Plan Administrators have assigned Participant, as Chief Sales Officer, an Individual Quota equal to the total target revenue of the Company, as approved by the Board of Directors in the Company's 2019 financial plan.

(b) Modifications due to Product Discontinuation. During the fiscal year, Company may discontinue products previously sold by the Sales Team, which may impact Participant's ability to reach his Individual Quota. For example, this can occur when a product is discontinued as a result of insufficient sales, for lack of component parts, or as a result of the sale of business segment offering the product. If, based upon sales by the Sales Team of such discontinued product in the current and/or prior fiscal year, the discontinuation of the product could have a material effect on Participant's ability to meet the Individual Quota, the Plan Administrators will determine in good faith whether Participant's Individual Quota should be adjusted accordingly.

EXHIBIT 10.12

V. Variable Compensation; Commission

Variable Compensation: Participant's variable compensation for 2019 will be comprised of two components: (i) Commission, and (ii) 2019 Adjusted EBITDA.

(a) Commission Earned: Commission is calculated based upon the amount of Commissionable Revenue generated by the Sales Team during the 2019 fiscal year.

(1) Returns and Credits: In the event that a product for which the Sales Team received credit as Commissionable Revenue is returned (or the Company credited the customer's account as though the product was returned), the corresponding amount of Commissionable Revenue related to the returned or credited product shall be subtracted from the Commissionable Revenue otherwise credited to the Sales Team. The amount of Commissionable Revenue will be subtracted in the quarter the product return or product credit is processed. Further, if one or more assigned accounts are greater than 90 days past the due date established by the applicable payment terms, the corresponding amount of Commissionable Revenue previously credited to the Sales Team shall be subtracted and the next quarterly Commission payment shall be adjusted accordingly. Such Commissionable Revenue will be added back in the quarter in which the payment is received from the customer and will be included in the next succeeding Commission payment. No Commission will be payable for any amounts written down or written off in accordance with GAAP.

(2) Commission Calculation - The Company's Finance Department will calculate the year-to-date Commissionable Revenue from invoices issued to the Sales Team's customers and determine the percentage of Individual Quota attained. The "**Commission Payout Factor**" is determined by locating the percentage of Individual Quota attained year-to-date in the table below and identifying the corresponding Commission Payout Factor. If the Individual Quota attained falls between the listed percentages in the Commission Table, the Finance Department will extrapolate to identify the Commission Payout Factor (e.g., 77% Individual Quota attainment would be a 61.67% Commission Payout Factor). The Commission earned is calculated as follows:

$$\begin{aligned} & \text{COMMISSION PAYOUT FACTOR} \times \text{TARGET COMMISSION (on Attachment A)} \\ & \quad \times \text{BASE SALARY.} \end{aligned}$$

The amount of Commission payable to Participant will be calculated after the Company's books are closed for the first fiscal quarter and after each calendar month thereafter. Commissions paid in prior periods of the fiscal year are deducted from the Commission payable for the year-to-date.

There is a "cap" or upper limit at 200% of Individual Quota attainment so that achieving greater Commissionable Revenue beyond 200% of Individual Quota, which equates to a 250% Commission Payout Factor, will not result in additional Commission. In addition, regardless of actual results, if the percentage of EBITDA Goal attained (as hereinafter defined) is less than 100%, then the percentage of Individual Quota attained will also be deemed to be capped at 100%.

EXHIBIT 10.12

Commission Table:

% Individual Quota Attained	Commission Payout Factor
0%	0%
10%	6%
20%	12%
30%	18%
40%	24%
50%	30%
60%	36%
70%	42%
75%	60%
80%	64%
90%	81%
100%	100%
110%	121%
120%	144%
130%	169%
140%	196%
150%	205%
160%	214%
170%	223%
180%	232%
190%	241%
≥ 200%	250%

(b) *Adjusted EBITDA Calculation* – The Company’s Finance Department will calculate the year-to-date Adjusted EBITDA in accordance with its established non-GAAP procedures. The Company has assigned an Adjusted EBITDA goal equal to the Company’s total target Adjusted EBITDA, as approved by the Board of Directors in the Company’s 2019 financial plan (“**EBITDA Goal**”). The “**EBITDA Payout Factor**” is determined by locating the percentage of the EBITDA Goal attained in the table below and identifying the corresponding EBITDA Payout Factor. If the percentage of EBITDA Goal attained falls between the listed percentages in the Adjusted EBITDA Table, the Finance Department will extrapolate to identify the EBITDA Payout Factor (e.g., 77% attainment would be a 61.67% EBITDA Payout Factor). The Adjusted EBITDA component of Variable Compensation is calculated as follows:

$$\text{EBITDA PAYOUT FACTOR} \times \text{TARGET ADJUSTED EBITDA (on Attachment A)} \\ \times \text{BASE SALARY.}$$

The amount payable to Participant as a result of attaining the EBITDA Goal will be calculated after the Company’s books are closed for each fiscal quarter. There is a “cap” or upper limit of 250% as the EBITDA Payout Factor. In addition, regardless of actual results, if the percentage of Individual Quota attained is less than 100%, then the percentage of EBITDA Goal attained will also be deemed to be capped at 100%.

EXHIBIT 10.12**Adjusted EBITDA Table:**

% EBITDA Goal Attained	EBITDA Payout Factor
0%	0%
10%	6%
20%	12%
30%	18%
40%	24%
50%	30%
60%	36%
70%	42%
75%	60%
80%	64%
90%	81%
100%	100%
110%	121%
120%	144%
130%	169%
140%	196%
150%	205%
160%	214%
170%	223%
180%	232%
190%	241%
≥ 200%	250%

VI. Payment Timing

All payments of Variable Compensation to Participant will be paid forty-five (45) days after the close of the applicable period.

EXHIBIT 10.12

ATTACHMENT A

PCTEL, INC.

QUOTA ASSIGNMENT STATEMENT

Name: Arnt Arvik

Sales Accounts: All accounts of the Sales Team

Individual Quota assigned: as stated in Section IV(a)

Target Commission is: 47% of your Base Salary

Target Adjusted EBITDA is: 20% of your Base Salary

Total Target Variable Compensation is: 67% of Base Salary

I acknowledge, as of this 15th day of March, 2019, that I have read, understand and agree to the terms and conditions of this specifically prepared PCTEL, INC. Sales Compensation Plan for FY 2019.

/s/ Arnt Arvik

Employee/Participant

/s/ David Neumann

Chief Executive Officer

/s/ Les Sgnilek

Vice President-Corporate Resources & Chief Risk Officer

/s/ Kevin McGowan

Chief Financial Officer

PCTEL, INC.
LONG-TERM INCENTIVE AWARD AGREEMENT

This Long-Term Incentive Award Agreement (the “Agreement”), dated as of February ____, 2019 between PCTEL, Inc. (hereinafter called the “Company”) and _____ (hereinafter called the “Participant”), is intended to memorialize the authorization by the Company’s Board of Directors of an equity award to Participant under the Company’s 2019 long-term incentive plan (“LTIP”). Capitalized terms used herein and not defined shall have the meanings ascribed thereto in the PCTEL, Inc. Stock Plan, as amended from time to time (the “Stock Plan”).

1. **Award Grant.** The award under the LTIP (“LTIP Award”) is comprised of two components: 33% of the LTIP Award is a time-based service award and 67% of the LTIP Award is a performance incentive award. Subject to the terms and conditions set forth herein and in the Stock Plan, the Company has awarded to Participant under the LTIP as of February 6, 2019 (the “Date of Grant”) (i) _____ Shares of Restricted Stock as a time-based award (“Time-Based Shares”); and (ii) a commitment by the Company to issue a certain number of Shares to Participant provided the Company achieves certain financial performance levels described in paragraphs 1(d) through (h) and Participant satisfies the service vesting obligations described in paragraph 2 (“Performance Shares”). Unlike the Time-Based Shares, the Performance Shares do not represent immediate ownership of Shares. Participant’s target number of Shares under the Performance Shares is _____, but the actual amount of Shares to be issued may be higher or lower depending on Company performance. The Shares issued or issuable under this LTIP Award are collectively hereinafter referred to as “LTIP Shares”).

a. **Vesting of LTIP Shares.** Unless vested earlier under Section 2, (i) Time-Based Shares shall vest in three substantially equal annual increments commencing on the first anniversary of the Date of Grant, and (ii) any Performance Shares earned shall vest on the Determination Date (as defined in paragraph 1(e)).

b. **Voting of LTIP Shares.** From and after the Date of Grant of Time-Based Shares (including the period prior to the vesting thereof), Participant shall have all voting rights and privileges accorded to holders of the Company’s Shares. Participant will not have any voting rights or privileges of a holder of the Company’s Shares in respect of any Performance Shares unless and until Shares have been issued thereunder, recorded on the records of the Company or its transfer agents or registrars, and delivered to Participant.

c. **Dividends on LTIP Shares.** From and after the Date of Grant of Time-Based Shares (including the period prior to the vesting thereof), Participant shall have the right to receive with respect thereto all dividends granted on the Company’s Shares. No dividends will be earned or accrued with respect to Participant’s Performance Shares unless and until Shares have been issued thereunder, recorded on the records of the Company or its transfer agents or registrars, and delivered to Participant.

d. **Performance Shares.** The number of Performance Shares that Participant is entitled to receive depends upon the Company’s revenue growth over a period of three fiscal years commencing with fiscal year 2019 (the “Performance Period”). If the Company achieves 8% revenue growth over the Performance Period (“Target Growth”), Participant will receive the target number of Shares indicated above (“Target Performance Award”). If the Company achieves less than Target Growth over the Performance Period, Participant will receive fewer Shares than the Target Performance Award, determined on a straight-line basis as indicated on the chart below. If the Company achieves greater than the Target Growth over the Performance Period, Participant will receive more Shares than the Target Performance Award, determined on an accelerated basis in accordance with the chart below. The maximum number of Shares that may be issued to Participant under the LTIP for the

Performance Period is 175% of the Target Performance Award even if revenue growth over the Performance Period exceeds 12%.

Revenue Growth for Performance Period	% of Target Performance Award
1.00%	12.50%
2.00%	25.00%
3.00%	37.50%
4.00%	50.00%
5.00%	62.50%
6.00%	75.00%
7.00%	87.50%
8.00%	100.00%
9.00%	118.75%
10.00%	137.50%
11.00%	156.25%
12.00%	175.00%

e. **Determination of Revenue.** Revenue shall be determined by the Company in accordance with Generally Accepted Accounting Principles of the United States of America (“GAAP”). As soon as reasonably practicable after the date of acceptance by the Audit Committee of the Board of Directors of the annual financial statements for the third fiscal year of the Performance Period (*i.e.*, 2021), revenue growth for the entire Performance Period shall be determined by the Company (the “Determination Date”).

f. **Adjusted EBITDA Penalty.** The number of Shares earned in accordance with paragraph 1(d) will be reduced by 20% if the Company’s Adjusted EBITDA as a percentage of the Company’s revenue (“Adjusted EBITDA Percentage”) for the Performance Period is less than 8% (the “Adjusted EBITDA Penalty”). The term “Adjusted EBITDA” means GAAP operating profit excluding stock compensation expenses, amortization of intangible assets, depreciation, restructuring charges, impairment charges, gain/loss on sale of product lines, and expenses included in GAAP operating profit to the extent their recovery is recorded in other income. On the Determination Date, the Company will determine whether the Adjusted EBITDA Penalty applies.

g. **Notification of Performance Achieved.** Following the Determination Date, the Company will provide Participant with written notice of the number of Performance Shares awarded under this Agreement for the Performance Period and the calculation of the Adjusted EBITDA Penalty, if applicable.

h. **Revenue Contribution of Acquired Entities.** The treatment of revenue generated by entities acquired during the Performance Period will be determined by the Compensation Committee of the Board in its sole discretion.

2. **Obligation to Issue/Pay.** Each annual increment of Time-Based Shares will be released from restrictions promptly upon their vesting. The Performance Shares issued, if any, will be delivered promptly after the Determination Date. Participant must remain in service as a Service Provider (i) through the vesting date of each annual increment of Time-Based Shares in order to be eligible to receive the applicable annual increment, and (ii) through the Determination Date in order to be eligible to receive Performance Shares earned. Except as provided under paragraph 2(a), Participant will have no right to receive payment of a ratable portion of earned LTIP Shares if Participant does not remain a Service Provider on the dates specified

in the preceding sentence. Prior to their actual issuance, Performance Shares will represent an unsecured obligation of the Company.

a. **Termination of Employment, Death or Disability.** Notwithstanding the foregoing provisions of this Section 2, if Participant is subject to a written employment agreement or severance benefits agreement (“**Employment Agreement**”) with the Company or a Subsidiary, then in the event the Company (or the Subsidiary employing Participant) terminates Participant as an Employee without “Cause” or Participant resigns as a “Voluntary Termination for Good Reason,” or Participant ceases to be a Service Provider as the result of Participant’s death or “Disability” occurring before any Determination Date, the Performance Shares shall vest in accordance with the terms of Participant’s applicable Employment Agreement. The terms “Cause”, “Voluntary Termination for Good Reason” and “Disability” used in this Section 2(a) shall have the meanings given them in such Employment Agreement, as may be modified from time to time.

b. **Change in Control.** Notwithstanding the foregoing provisions of this Section 2, if Participant is subject to a Management Retention Agreement with the Company (the “**Management Retention Agreement**”), then in the event of a Change in Control that occurs during the Performance Period (or prior to the Determination Date for Performance Shares not yet vested and earned) while Participant is a Service Provider, the Shares will vest and be earned in accordance with the terms of Participant’s Management Retention Agreement. If Participant is not subject to a Management Retention Agreement, then in the event of a Change in Control that occurs during the Performance Period, Participant’s target number of Performance Shares shall convert into Time-Based Shares (“**Converted Shares**”). Each Converted Share shall vest as to one forty-eighth (1/48th) of the Converted Shares as of the first day of each calendar month beginning on and after the Date of Grant, provided that Participant remains in service as a Service Provider through each such date. Participant shall be given vesting credit from the Date of Grant as if each Converted Share had been subject to a time-based vesting schedule from the Date of Grant.

c. **Administrator Discretion.** The Compensation Committee of the Company’s Board (the “**Administrator**”), in its discretion, may accelerate the vesting of the balance, or some lesser portion of the balance, of the Time-Based Shares at any time, subject to the terms of the Stock Plan. If so accelerated, such Time-Based Shares will be considered as having vested as of the date specified by the Administrator.

d. **Forfeiture.** Subject to the foregoing acceleration provisions, in the event Participant ceases to be an Eligible Person for any reason before the applicable vesting date for each increment of Time-Based Shares or the Determination Date for Performance Shares, the corresponding Shares (or right to acquire such Shares, as applicable) will immediately terminate and be forfeited.

3. **Non-Transferability of LTIP Award.** The LTIP Award (other than fully vested and unrestricted LTIP Shares issued pursuant to the LTIP Award) may not be transferred in any manner otherwise than by will or by the laws of descent or distribution, except the Committee may permit the transfer of this LTIP Award to a family member if such transfer is for no value and in accordance with the rules of Form S-8.

4. **Effect on Employment.** Participant acknowledges and agrees that this Agreement, the transactions contemplated hereunder, and the earning and vesting provisions set forth herein do not constitute an express or implied promise of Participant’s continuing employment for any period, or at all, and will not interfere with Participant’s right or the right of the Company (or the Affiliate employing Participant) to terminate Participant as an Employee at any time, with or without cause.

5. **Tax Withholding.** Notwithstanding any contrary provision of this Agreement, no LTIP Shares will be issued to Participant unless and until satisfactory arrangements (as determined by the Administrator) will have been made by Participant with respect to the payment of income, employment and other taxes which the Company determines must be withheld with respect to such LTIP Shares so issuable. All income, employment and other taxes related to the LTIP Shares delivered in payment thereof are the sole responsibility of Participant. Participant hereby authorizes the Company, or its agents, to satisfy its obligations with regard to all taxes by withholding otherwise deliverable Shares having a Fair Market Value equal to the amount required to be withheld.

6. **Additional Conditions to Issuance of Stock.** If at any time the Company determines, in its discretion, that the listing, registration or qualification of the LTIP Shares upon any securities exchange or under any state or federal law, or the consent or approval of any governmental regulatory authority is necessary or desirable as a condition to the issuance of LTIP Shares to Participant (or his or her estate), such issuance will not occur unless and until such listing, registration, qualification, consent or approval will have been effected or obtained free of any conditions not acceptable to the Company. Where the Company determines that the delivery or payment of any of the LTIP Shares will violate federal securities laws or other applicable laws, the Company will defer delivery until the earliest date at which the Company reasonably anticipates that the delivery of LTIP Shares will no longer cause such violation. The Company will make all reasonable efforts to meet the requirements of any such state or federal law or securities exchange and to obtain any such consent or approval of any such governmental authority.

7. **Restrictions on Sale of Securities.** The LTIP Shares awarded under this Agreement will be registered under the federal securities laws and will be freely tradable upon receipt. However, Participant's subsequent sale of the Shares will be subject to any market blackout-period that may be imposed by the Company and must comply with the Company's insider trading policies, and any other applicable securities laws.

8. **Successors.** Subject to the limitation on the transferability of this award as contained herein, this Agreement will be binding upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

9. **Address for Notices.** Any notice to be given to the Company under the terms of this Agreement will be addressed to the Company, in care of its General Counsel at PCTEL, Inc., 471 Brighton Drive, Bloomingdale, Illinois 60108, or at such other address as the Company may hereafter designate in writing.

10. **Stock Plan Governs.** This Agreement is subject to all terms and provisions of the Stock Plan. In the event of a conflict between one or more provisions of this Agreement and one or more provisions of the Stock Plan, the provisions of the Stock Plan will govern, unless otherwise provided in Participant's Employment Agreement or Management Retention Agreement, if any.

11. **Administrator Authority.** The Administrator will have the power to interpret the Stock Plan and this Agreement and to adopt such rules for the administration, interpretation and application of the Stock Plan as are consistent therewith and to interpret or revoke any such rules (including, but not limited to, the determination of whether or not any LTIP Shares have been earned and vested). All actions taken and all interpretations and determinations made by the Administrator in good faith will be final and binding upon Participant, the Company and all other interested persons. No member of the Administrator will be personally liable for any action, determination or interpretation made in good faith with respect to the Plan or this Agreement.

12. **Electronic Delivery.** The Company may deliver any documents related to LTIP Shares awarded under the Stock Plan or LTIP Shares awarded under the Stock Plan by electronic means. Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Stock Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

13. **Captions.** Captions provided herein are for convenience only and are not to serve as a basis for interpretation or construction of this Agreement.

14. **Agreement Severable.** In the event that any provision in this Agreement is held invalid or unenforceable, such provision will be severable from, and such invalidity or unenforceability will not be construed to have any effect on, the remaining provisions of this Agreement.

15. **Entire Agreement.** This Agreement constitutes the entire understanding of the parties on the subject matter hereof. Participant expressly warrants that he or she is not executing this Agreement in reliance on any promises, representations, or inducements other than those contained herein.

16. **Modifications to the Agreement.** Generally, modifications to this Agreement can be made only in an express written amendment executed by Participant and a duly authorized officer of the Company. Notwithstanding anything to the contrary in this Agreement, the Company may amend this Agreement without Participant's consent to the extent permitted under the Stock Plan (including, without limiting the foregoing, to comply with law changes or to adhere to any clawback policy).

17. **Amendment, Suspension or Termination of the Plan.** By accepting this award of LTIP Shares, Participant expressly warrants that he or she has received a right to acquire stock under the Stock Plan, and has received, read and understood a description of the Stock Plan. Participant understands that the Stock Plan is discretionary in nature and may be modified, suspended or terminated by the Company at any time.

18. **Governing Law.** This Agreement shall be governed by the laws of the State of Delaware, without giving effect to the conflict of law principles thereof. For purposes of litigating any dispute that arises under this award of LTIP Shares or this Agreement, the parties hereby submit to and consent to the jurisdiction of the State of Illinois, and agree that such litigation shall be conducted in the courts of Cook County, Illinois, or the federal courts for the United States located in or around Cook County, Illinois, and no other courts, where this award of LTIP Shares is made and/or to be performed.

IN WITNESS WHEREOF, the parties have signed this Agreement effective as of the date and year indicated above.

PCTEL, INC.

By:
Printed

Title:

Name:

PARTICIPANT:

Signature:
Printed Name:

-6-

LEASE

BY AND BETWEEN

**FP GATEWAY 270, LLC
LANDLORD**

AND

**PC-TEL, INC.
TENANT**

22600 Gateway Center Drive
Clarksburg, Maryland

TABLE OF CONTENTS

Page

ARTICLE 1 Reference Data	1
1.1 Introduction and Subjects Referred To.	1
1.2 Exhibits.	3
ARTICLE 2 Premises and Term	3
2.1 Premises	3
2.2 Term	4
2.3 Early Access	4
2.4 Extension Option	4
2.5 Right of First Offer	6
2.6 Measurement of the Premises	7
ARTICLE 3 Commencement and Condition	7
3.1 Condition at Delivery	7
3.2 Preparation of Premises.	8
3.3 Construction Representatives	10
ARTICLE 4 Rent, Additional Rent, Insurance and Other Charges	10
4.1 The Annual Fixed Rent	10
4.2 Additional Rent	11
4.2.1 Real Estate Taxes	11
4.2.2 Operating Costs	12
4.3 Personal Property and Sales Taxes	18
4.4 Insurance.	18
4.4.1 Insurance Policies	18
4.4.2 Requirements	18
4.4.3 Waiver of Subrogation	19
4.5 Utilities	19
4.6 Late Payment of Rent	20
4.7 Security Deposit	20
ARTICLE 5 Landlord's Covenants	20
5.1 Affirmative Covenants	20
5.1.1 Heat and Air-Conditioning	20
5.1.2 Cleaning; Water	21
5.1.3 Lighting and Electricity	22
5.1.4 Repairs	22
5.2 Interruption	22
5.3 Outside Services	22
5.4 Access to Building	23
5.5 Parking	23
5.6 Landlord's Insurance	24
5.7 Indemnification	24
5.8 Legal Compliance	24
5.9 Landlord's Hazardous Waste Representation	24

TABLE OF CONTENTS
(CONTINUED)

Page

ARTICLE 6	Tenant's Additional Covenants	24
6.1	Affirmative Covenants.	24
6.1.1	Perform Obligations	24
6.1.2	Use	25
6.1.3	Repair and Maintenance.	25
6.1.4	Compliance with Law	25
6.1.5	Indemnification	26
6.1.6	Landlord's Right to Enter	26
6.1.7	Personal Property at Tenant's Risk	26
6.1.8	Payment of Landlord's Cost of Enforcement	27
6.1.9	Yield Up	27
6.1.10	Rules and Regulations	27
6.1.11	Estoppel Certificate	27
6.1.12	Landlord's Expenses For Consents	28
6.1.13	Financial Information	28
6.2	Negative Covenants.	28
6.2.1	Assignment and Subletting	28
6.2.2	Nuisance	32
6.2.3	Floor Load; Heavy Equipment	32
6.2.4	Electricity	33
6.2.5	Installation, Alterations or Additions	33
6.2.6	Intentionally Omitted.	34
6.2.7	Signs	34
6.2.8	Oil and Hazardous Materials	35
ARTICLE 7	Casualty or Taking	37
7.1	Termination	37
7.2	Restoration	38
7.3	Award	38
ARTICLE 8	Defaults	38
8.1	Default of Tenant	38
8.2	Remedies	39
8.3	Remedies Cumulative	41
8.4	Landlord's Right to Cure Defaults	41
8.5	Holding Over	42
8.6	Effect of Waivers of Default	42
8.7	No Waiver, etc	42
8.8	No Accord and Satisfaction	42
ARTICLE 9	Rights of Holders	42
9.1	Rights of Mortgagees or Ground Lessor	42
9.2	Modifications	43
9.3	Subordination, Non-Disturbance and Attornment	44

TABLE OF CONTENTS
(CONTINUED)

Page

ARTICLE 10 Miscellaneous Provisions	44	
10.1 Notices	44	
10.2 Quiet Enjoyment; Landlord's Right to Make Alterations, Etc		44
10.3 Lease not to be Recorded; Confidentiality of Lease Terms		45
10.4 Assignment of Rents and Transfer of Title; Limitation of Landlord's Liability		45
10.5 Landlord's Default	46	
10.6 Notice to Mortgagee and Ground Lessor		47
10.7 Brokerage	47	
10.8 Waiver of Jury Trial	47	
10.9 Applicable Law and Construction		47
10.10 Evidence of Authority	48	
10.11 UPS System	48	
10.12 Rooftop Antenna	49	
10.13 Force Majeure	51	

LEASE

22600 Gateway Center
Clarksburg, Maryland

ARTICLE 1

Reference Data

1.1 Introduction and Subjects Referred To.

This is a lease (this "Lease") entered into by and between FP Gateway 270, LLC, a New Jersey limited liability company ("Landlord"), and PC-Tel, Inc., a Delaware corporation ("Tenant").

Each reference in this Lease to any of the following terms or phrases shall be construed to incorporate the corresponding definition stated in this Section 1.1.

Date of this Lease: January __, 2019.

Building and Property:

That building in Clarksburg, Maryland, located at 22600 Gateway Center Drive (the "Building"). The Building and the land parcels on which it is located and the sidewalks adjacent thereto are hereinafter collectively referred to as the "Property". The Property is located in the office park known as Gateway 270 (the "Park").

Premises:

A portion of the Building known as Suite 100, substantially as shown on Exhibit A hereto.

Premises Rentable Area:

21,030 square feet, measured using a Building core factor of eight percent (8.06%).

Original Term:

Eleven (11) years and two (2) months, commencing on January 1, 2020 (the "Commencement Date") and expiring on February 28, 2031.

Annual Fixed Rent:

The following amounts:

<u>Dates</u>	<u>Annual Fixed Rent</u>	<u>Monthly Installments</u>
1/1/20 - 12/31/21	\$441,630.00	\$36,802.50
1/1/22 - 12/31/22	\$451,566.68	\$37,630.56
1/1/23 - 12/31/23	\$461,726.93	\$38,477.24
1/1/24 - 12/31/24	\$472,115.78	\$39,342.98
1/1/25 - 12/31/25	\$482,738.39	\$40,228.20
1/1/26 - 12/31/26	\$493,600.00	\$41,133.33
1/1/27 - 12/31/27	\$504,706.00	\$42,058.83

1/1/28 – 12/31/28	\$516,061.88	\$43,005.16
1/1/29 – 12/31/29	\$527,673.28	\$43,972.77
1/1/30 – 12/31/30	\$539,545.93	\$44,962.16
1/1/31 – 2/28/31	\$551,685.71	\$45,973.81

Notwithstanding the foregoing, Annual Fixed Rent as set forth in the schedule above and Additional Rent for Taxes and Operating Costs shall be abated for the months of January 2020 through February 2021, provided, however, should there be a Default of Tenant (i.e., after the applicable notice and/or cure period, if any, as provided in Section 8.1 of the Lease) at any time on or before February 28, 2021, then such abatement shall be forfeited and any previously abated Annual Fixed Rent and Additional Rent for Taxes and Operating Costs shall be immediately due and payable.

Base Taxes: The Taxes (as defined in Subsection 4.2.1) for the fiscal year ending June 30, 2020, as the same may be reduced by the amount of any abatement.

Base Operating Costs: The Operating Costs (as defined in Subsection 4.2.2) for the 2020 calendar year.

Tenant's Percentage: The percentage equivalent (calculated to the second decimal place) of the number obtained by dividing the Premises Rentable Area by the rentable area of the Building (deemed to be 26,274 square feet). Tenant's Percentage shall initially be eighty and four hundredths percent (80.04%).

Permitted Uses: Light manufacturing, including shipping and receiving of products and materials, and general office use, including engineering activities and the development, assembly and testing of antennas, radios and electronic equipment, subject to the provisions of Subsection 6.1.2.

Commercial General Liability Insurance Limits: \$5,000,000 (including umbrella liability coverage) per occurrence – may be effected by a combination of primary and excess liability insurance; Best rating of at least A-VIII.

Original Address of Landlord:
 FP Gateway 270, LLC
 c/o The RMR Group LLC
 540 Gaither Road
 Rockville, MD 20850
 Attention: Vice President, Mid-Atlantic Region

Landlord's Agent: The RMR Group LLC or such other entity as shall be designated by Landlord from time to time.

Original Address of Tenant: PC-TEL, Inc.
471 Brighton Drive
Bloomington, IL 60108
Attention: General Counsel

Account for Payment of Rent: Bank Name: PNC Bank, NA
ABA#: 031-207-607
Account Name: Government Properties Income Trust LLC
Account No.: 8026300155

1.2 Exhibits.

The Exhibits listed below in this section are incorporated in this Lease by reference and are to be construed as a part of this Lease.

- EXHIBIT A. Plan showing the Premises.
- EXHIBIT B. Rules and Regulations.
- EXHIBIT C. Alterations Requirements.
- EXHIBIT D. Contractor's Insurance Requirements.
- EXHIBIT E. Janitorial Specifications.
- EXHIBIT F. Declaration by Landlord and Tenant.
- EXHIBIT G. Location of UPS System.
- EXHIBIT G-1. UPS System Specifications.
- EXHIBIT H. Antenna Specifications.

ARTICLE 2

Premises and Term

2.1 Premises. Landlord hereby leases the Premises to Tenant and Tenant hereby leases the Premises from Landlord, subject to and with the benefit of the terms, covenants, conditions and provisions of this Lease, excluding exterior faces of exterior walls, the common lobbies, hallways, stairways, stairwells and other common areas, and the pipes, ducts, conduits, wires and appurtenant fixtures and other common facilities serving the common areas, the Premises and the premises of other tenants in the Building.

Tenant shall have, as appurtenant to the Premises, rights to use, in common with others, subject to reasonable rules of general applicability to tenants of the Building from time to time made by Landlord of which Tenant is given notice: (a) the common lobbies, hallways and stairways of the Building, (b) the common pipes, ducts, conduits, wires and appurtenant fixtures and other common facilities serving the Premises, (c) common walkways and driveways (if any) necessary for access to the Building, and (d) if the Premises include less than all of the rentable

area of any floor of the Building, the common toilets and other common facilities located on such floor.

2.2 Term. The term of this Lease shall be for a period beginning on the Commencement Date (as defined in Section 1.1) and continuing for the Original Term and any extension of the term hereof in accordance with the provisions of this Lease, unless sooner terminated as hereinafter provided. When the dates of the beginning and end of the Original Term have been determined such dates shall be evidenced by a confirmatory document executed by Landlord and Tenant in the form substantially as shown on Exhibit F hereto and delivered each to the other, but the failure of Landlord and Tenant to execute or deliver such document shall have no effect upon such dates. The Original Term and any extension of the term hereof in accordance with the provisions of this Lease is hereinafter referred to as the "term" of this Lease.

2.3 Early Access. From the date which is three (3) Business Days following the Date of this Lease to May 30, 2019 (and provided Landlord shall have received a copy of each of Tenant's certificates of insurance therefor pursuant to Subsection 4.4.2 hereof) (the "Early Access Period"), Tenant and its contractors shall have access to the Premises for the purposes of planning and designing Tenant's Work, provided that (i) Tenant shall not perform Tenant's Work or any other alterations, additions or improvements during such period of early access and (ii) Tenant shall coordinate any such access with Landlord in advance.

Commencing on June 1, 2019 (and provided Landlord shall have received a copy of each of Tenant's certificates of insurance therefor pursuant to Subsection 4.4.2 hereof), Tenant and its contractors shall have access to the Premises for the purposes of designing, and after Tenant's Plans (as defined in Section 3.2) have been approved by Landlord, performing Tenant's Work (as defined in Section 3.2), installing furniture, fixtures and telecommunications equipment and otherwise preparing the Premises for Tenant's occupancy, and commencing on June 1, 2019, all obligations of Tenant under this Lease shall apply as if the term of this Lease had commenced, except that Tenant shall have no obligation to pay Annual Fixed Rent or to pay Additional Rent for Taxes or Operating Costs until the Commencement Date. Notwithstanding that the term of this Lease shall not commence until the Commencement Date, during such period of early access Landlord's obligations under Sections 5.6 and 5.7 shall apply, and Landlord shall provide Tenant with access to the loading dock and other common areas and facilities of the Building and shall furnish electricity and water to the Premises as required by this Lease, as if the Commencement Date had occurred.

2.4 Extension Option. So long as this Lease is still in full force and effect, and subject to the Conditions (as hereinafter defined), which Landlord may waive, in its discretion, at any time, but only by notice to Tenant, Tenant shall have the right to extend the term of this Lease for one (1) additional period (the "Extended Term(s)") of five (5) years, commencing on March 1, 2031, and ending on February 29, 2036. All of the terms, covenants and provisions of this Lease applicable immediately prior to the expiration of the Original Term shall apply to the Extended Term except that (i) the Annual Fixed Rent for the Extended Term shall be the Market Rate (as hereinafter defined) for the Premises determined as of the commencement of such Extended Term, as designated by Landlord by notice to Tenant ("Landlord's Notice"), but subject to Tenant's right to dispute as hereinafter provided; and (ii) Tenant shall have no further right to extend the term of this Lease beyond the Extended Term hereinabove provided. If Tenant shall so request by notice to Landlord not earlier than November 30, 2029, Landlord shall

give Tenant its Landlord Notice within thirty (30) days of such request. If Tenant shall elect to exercise the aforesaid option, it shall do so by giving Landlord notice (an "Election Notice") of its election not later than February 28, 2030. If Tenant fails to give such Election Notice to Landlord or the Conditions are neither satisfied nor waived by Landlord, the term of this Lease shall automatically terminate no later than the end of the Original Term, and Tenant shall have no further option to extend the term of this Lease, it being agreed that time is of the essence with respect to the giving of such Election Notice. If Tenant shall extend the term hereof pursuant to the provisions of this Section 2.4, such extension shall (subject to satisfaction of the Conditions, unless waived by Landlord) be automatically effected without the execution of any additional documents, but Tenant shall, at Landlord's request, execute an agreement confirming the Annual Fixed Rent for the Extended Term. The "Conditions" are that, as of the date of the Election Notice there shall exist no Default of Tenant and the named Tenant as set forth in Section 1.1 (or any successor by Merger, or any Affiliate as defined in Subsection 6.2.1) shall actually occupy the entire Premises.

"Market Rate" shall mean the then fair market annual rent for the Premises for the Extended Term (determined as set forth below) with annual increases and concessions for rental abatement and tenant improvement allowances consistent with market renewals in the greater Clarksburg area for premises comparable to the Premises. If Tenant disagrees with Landlord's designation of the Market Rate, then Tenant shall give notice thereof to Landlord within twenty (20) days after Landlord's Notice (failure to provide such notice of disagreement within such 20-day period constituting acceptance by Tenant of Market Rate as set forth in Landlord's Notice); and if the parties cannot agree upon the Market Rate by the date that is thirty (30) days following Landlord's Notice, then the Market Rate shall be submitted to appraisal as follows: Within fifteen (15) days after the expiration of such thirty (30) day period, Landlord and Tenant shall each give notice to the other specifying the name and address of the appraiser each has chosen. The two appraisers so chosen shall meet within ten (10) days after the second appraiser is appointed and if, within twenty (20) days after the second appraiser is appointed, the two appraisers shall not agree upon a determination of the Market Rate in accordance with the following provisions of this Section 2.3 they shall together appoint a third appraiser. If only one party shall appoint an appraiser, as provided by this Section 2.4, who shall have the qualifications hereinafter set forth, that sole appraiser shall render the decision which would otherwise have been made as hereinabove provided.

If said two appraisers cannot agree upon the appointment of a third appraiser within ten (10) days after the expiration of such twenty (20) day period, then either party, on behalf of both and on notice to the other, may request such appointment by the then President of the Real Estate Board (or any similar or successor organization) for the greater Clarksburg area in accordance with its then prevailing rules. If said President shall fail to appoint said third appraiser within ten (10) days after such request is made, then either party, on behalf of both and on notice to the other, may request such appointment by the American Arbitration Association (or any successor organization) in accordance with its then prevailing rules. In the event that all three appraisers cannot agree upon such Market Rate within ten (10) days after the third appraiser shall have been selected, then each appraiser shall submit his or her designation of such Market Rate to the other two appraisers in writing; and Market Rate shall be determined by calculating the average of the two numerically closest (or, if the values are equidistant, all three) values so determined.

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Each of the appraisers selected as herein provided shall have at least ten (10) years experience as a commercial real estate broker in the greater Clarksburg area dealing with properties of the same type and quality as the Building. Each party shall pay the fees and expenses of the appraiser it has selected and the fees of its own counsel. Each party shall pay one half (1/2) of the fees and expenses of the third appraiser (or the sole appraiser, if applicable) and all other expenses of the appraisal. The decision and award of the appraiser(s) shall be in writing and shall be final and conclusive on all parties, and counterpart copies thereof shall be delivered to both Landlord and Tenant. Judgment upon the award of the appraiser(s) may be entered in any court of competent jurisdiction.

The appraiser(s) shall determine the Market Rate of the Premises for the Extended Term and render a decision and award as to their determination to both Landlord and Tenant (a) within twenty (20) days after the appointment of the second appraiser, (b) within twenty (20) days after the appointment of the third appraiser or (c) within fifteen (15) days after the appointment of the sole appraiser, as the case may be. In rendering such decision and award, the appraiser(s) shall assume (i) that neither Landlord nor the prospective tenant is under a compulsion to rent, and that Landlord and Tenant are typically motivated, well-informed and well-advised, and each is acting in what it considers its own best interest, (ii) the Premises are fit for immediate occupancy and use "as is", (iii) that in the event the Premises have been damaged by fire or other casualty prior to the commencement of the Extended Term, they have been fully restored. The appraisers shall also take into consideration the rents contained in leases for comparable space in the Building, or in comparable buildings in the greater Clarksburg area, for comparable periods of time.

If the dispute between the parties as to the Market Rate has not been resolved before the commencement of Tenant's obligation to pay the Annual Fixed Rent based upon determination of such Market Rate, then Tenant shall pay the Annual Fixed Rent under the Lease based upon the Market Rate designated by Landlord in Landlord's Notice until either the agreement of the parties as to the Market Rate, or the decision of the appraiser(s), as the case may be, at which time Tenant shall pay any underpayment of the Annual Fixed Rent to Landlord, or Landlord shall refund any overpayment of the Annual Fixed Rent to Tenant.

Landlord and Tenant hereby waive the right to an evidentiary hearing before the appraiser(s) and agree that the appraisal shall not be an arbitration nor be subject to state or federal law relating to arbitrations.

2.5 Right of First Offer. So long as (i) there then exists no Default of Tenant, (ii) the Tenant named in Section 1.1 of this Lease (or any successor by Merger and/or any Affiliate) shall occupy the entire Premises, and (iii) this Lease is still in full force and effect, then if any space in the Building shall become available for lease by Landlord following the expiration or sooner termination of the first lease of such space after the Date of this Lease, Landlord shall so notify Tenant, and shall identify the space available (the "Offered Space") together with the rental rate and other terms and conditions (collectively, the "Terms") under which in good faith Landlord intends to offer such space to third parties (which may include a term not co-terminus with that applicable to the Premises then demised to Tenant under the Lease) and the date on which such Offered Space is expected to be available, and Tenant may, by giving notice to Landlord within five (5) days after receipt of such notice, irrevocably elect to lease all, but not less than all, of the Offered Space on the Terms. If Tenant shall have so elected to lease the

Offered Space, it shall enter into an amendment to this Lease within ten (10) days after it shall have received the same from Landlord, confirming the lease of such Offered Space to Tenant on the Terms. If Tenant shall not elect to lease the Offered Space within the aforesaid five-day period, then Landlord shall thereafter be free to lease any or all of such Offered Space to a third party or parties from time to time on such terms and conditions as it may deem appropriate, it being agreed that time is of the essence with respect to the exercise of Tenant's rights hereunder.

The provisions hereof shall not apply to the initial lease of any space after the Date of this Lease (i.e. no space in the Building shall be subject to Tenant's rights hereunder until that space shall have been subject to a lease entered into after the Date of this Lease), nor shall the provisions hereof apply, and space shall not be deemed "available for lease" hereunder, if Landlord shall intend either (a) to enter into a lease of such space to any party pursuant to the terms of a lease in effect as of the Date of this Lease or to any entity controlling, controlled by or under common control with Landlord or (b) to renew or extend the lease with (or grant a new lease to) the entity (or any party affiliated with such entity) then occupying such space.

2.6 Measurement of the Premises. Landlord and Tenant agree that the Premises Rentable Area identified in Section 1.1 is recited for administrative purposes only and that, although the Annual Fixed Rent has been determined by reference to such square footage (regardless of the possibility that the actual measurement of the Premises may be more or less than the number identified, irrespective of measurement method used), Annual Fixed Rent and Tenant's Percentage shall not be changed except as expressly provided in this Lease.

ARTICLE 3

Commencement and Condition

3.1 Condition at Delivery. Landlord, at its sole cost and expense, shall complete all of the work required to cause the Premises to be separated from the balance of the space on the first floor of the Building so that the Premises are separately demised and independently functional in compliance with all applicable laws and codes and Landlord's Building standards. Such work (the "Demising Work") shall include, without limitation, the installation of necessary demising walls and doorways and modification of the HVAC ductwork, electrical service, plumbing service (if any) and fire/life-safety systems as necessary. Landlord shall deliver the Premises to Tenant with the Demising Work complete except for so-called punch list work which need not be complete for Tenant to commence Tenant's Work (as defined in Section 3.2) and which can be completed by Landlord after Tenant has begun Tenant's Work without interfering in any material respect with the completion of Tenant's Work. Landlord shall use commercially reasonable efforts to complete all punch list work not later than thirty (30) days after the Commencement Date and Tenant agrees to give Landlord reasonable access to the Premises for such purpose. In addition to the Demising Work, prior to the Commencement Date Landlord shall stripe those areas of the Parking Facility, as defined in Section 5.4 below, which are currently not striped but which Landlord determines may be used as additional parking, to indicate that such areas are parking spaces (the "Parking Facility Work"). Except as affected by the Demising Work and the Parking Facility Work, the Premises shall be delivered to Tenant in the condition in which they are in as of the Date of this Lease. Tenant acknowledges that no representations as to the condition or repair of the Premises or promises to alter, remodel or

improve either have been made by Landlord or any agents of Landlord except to the extent expressly set forth in this Lease.

3.2 Preparation of Premises.

(a) Tenant shall be responsible for making any alterations or improvements to the Premises required by Tenant, all of which shall be at Tenant's sole cost and expense except that Landlord shall provide Tenant with an allowance as hereinafter described as a contribution toward the costs incurred by Tenant to design and construct Tenant's initial alterations and improvements to the Premises. Tenant shall cause an architect licensed in the State of Maryland to prepare complete construction plans and specifications for said initial alterations and improvements ("Tenant's Plans") in accordance with the requirements of Exhibit C attached hereto. Tenant's Plans shall be subject to review and approval by Landlord as provided in Exhibit C. Landlord shall respond to Tenant's Plans (either by approval, request for additional information, request for revision or communication of a reason for failure to approve) within five (5) Business Days (as defined in the Rules and Regulations) after the date of Landlord's receipt of Tenant's Plans or any resubmission, plus such additional period of time, not to exceed an additional ten (10) Business Days, as may be necessary for review of Tenant's Plans by a third-party architect, engineer or other consultant if Landlord determines that any aspect of Tenant's Plans requires such third-party review. Until Landlord shall have unconditionally approved all of Tenant's Plans, Tenant, shall deliver to Landlord such additional information, documentation and/or revisions to Tenant's Plans as are necessary to obtain Landlord's approval of Tenant's Plans and this process shall continue until Tenant's Plans are approved by Landlord.

(b) Upon approval of Tenant's Plans by Landlord (and provided Landlord shall have delivered the Premises to Tenant), Tenant shall cause its contractor(s) (selected by Tenant, but subject to approval by Landlord, which approval shall not be unreasonably withheld, conditioned or delayed) to perform the work and improvements described on Tenant's Plans (collectively, "Tenant's Work") diligently and continuously until Tenant's Work is completed. Tenant's Work shall be performed in accordance with Tenant's Plans, using materials and/or installations meeting or exceeding Landlord's minimum standards for the Building and in accordance with the requirements of Exhibit C and all applicable provisions of Article 6. Tenant agrees (i) to cease promptly upon notice from Landlord any activity or work which has not been approved by Landlord (where such approval is required) or is not in compliance with the provisions of this Lease, and (ii) to comply and cause its contractors to comply promptly with all reasonable procedures and regulations prescribed by Landlord from time to time. Tenant's Work may include the purchase for the Premises and installation of any Supplemental HVAC Equipment and the UPS System, as such terms are defined below.

(c) Tenant's Work shall be considered substantially complete and the "Substantial Completion Date" shall occur on the first day as of which all of the following requirements have been met: (i) all work shown and described in Tenant's Plans has been completed, with only punchlist items (i.e., minor and insubstantial details of decoration or mechanical adjustment) excepted; (ii) Tenant's architect has issued a certificate of substantial completion on the standard AIA form or a reasonable equivalent, and a copy thereof together with record "as built" drawings in paper and electronic (CAD) format showing all alterations as actually constructed have been delivered to Landlord; (iii) all electrical, mechanical, plumbing and HVAC facilities installed by Tenant are functioning properly and if the alterations include

{B2323618; 13}

any HVAC work, Tenant has provided to Landlord a copy of an air balancing report signed by a professional engineer showing that the HVAC system is properly balanced for the season; (iv) the Premises are reasonably free of debris and construction materials, (v) all required governmental inspections have been successfully completed and a final certificate of occupancy has been issued and a copy thereof delivered Landlord; (vi) Tenant shall have certified to Landlord the names of all contractors, subcontractors and suppliers which were engaged in Tenant's Work and delivered to Landlord final lien waivers from all such parties; and (vii) Tenant shall have provided to Landlord copies of all warranties and guarantees received from the contractors, subcontractors and suppliers or manufacturers and copies of all maintenance manuals, instructions and similar information pertaining to the operation and maintenance of fixtures installed in the Premises as part of Tenant's Work.

(d) Provided this Lease is then in full force and effect, Landlord shall make an improvement allowance ("Landlord's Contribution") available to Tenant in accordance with this Section 3.2 in an amount equal to the lesser of (i) \$1,472,100.00, or (ii) the actual amount of the third-party cost of Tenant's Work. For purposes of this Section 3.2(d), the "cost" of Tenant's Work shall mean the actual third-party costs incurred by Tenant in connection with performing Tenant's Work including, without limitation, all architectural and engineering fees and expenses; all contractor charges for the cost of labor and materials, profit, general conditions and overhead and supervision; all filing fees and other permitting costs and fees paid to independent construction managers, if any, plus a supervisory and review fee, to be retained by Landlord (i.e., to be subtracted from Landlord's Contribution), equal to one percent (1%) of the hard costs of Tenant's Work, which hard costs shall mean, for purposes of this Section 3.2(d), all contractor charges for the cost of labor and materials, profit, general conditions and overhead and supervision incurred in connection with Tenant's Work.

Tenant may requisition Landlord for payment of Landlord's Contribution monthly (hereinafter "Progress Payments") provided that Landlord may withhold ten percent (10%) of the amount due on each requisition paid prior to the substantial completion of Tenant's Work until the Final Payment (as hereinafter defined). Each requisition for a Progress Payment shall include (i) a detailed breakdown of the costs of Tenant's Work included in the requisition, (ii) copies of invoices from Tenant's contractors, suppliers and others, as applicable, substantiating such costs, and (iii) executed waivers of mechanic's or material supplier's liens (in such form as Landlord shall reasonably require) on account of any labor and/or materials furnished by such party through the date of the requisition (provided that any such waiver may be conditioned upon receipt of the amount requested for such party in the requisition). Landlord shall make each Progress Payment (in an amount not to exceed the lesser of (x) the costs of Tenant's Work, as evidenced by the documentation submitted with the applicable requisition, or (y) the balance of Landlord's Contribution then remaining, less amounts retained by Landlord as hereinabove provided) to Tenant or, at Tenant's election, to Tenant's general contractor within thirty (30) days after Landlord's receipt of a Progress Payment requisition with all required supporting documentation.

After the Substantial Completion Date shall have occurred, Tenant may request in writing that Landlord make payment of the balance of Landlord's Contribution and all retained amounts other than Landlord's supervisory and review fee (the "Final Payment"). Tenant's requisition for the Final Payment shall include (i) a final, detailed breakdown of all of the costs of Tenant's Work, (ii) final mechanic's and material supplier's lien waivers therefor (provided that any such

{B2323618; 13}

waiver may be conditioned upon receipt of the amount requested for such party in the requisition) and (iii) all other documentation required for the Progress Payment pursuant to the preceding paragraph as to the portion of Tenant's Work covered by the Final Payment. Landlord shall make payment of the Final Payment in an amount equal to the lesser of (x) the unreimbursed cost of Tenant's Work, as evidenced by the documentation submitted with the requisition for the Final Payment or (y) the balance of Landlord's Contribution then remaining, if any (including any retained amounts other than Landlord's supervisory and review fee), to Tenant (or at Tenant's request, to its general contractor) within thirty (30) days after Landlord's receipt of a requisition for the Final Payment with all required supporting documentation.

If the cost of Tenant's Work shall total less than \$1,472,100.00, then the lesser of (x) the difference between the cost of Tenant's Work and \$1,472,100.00, or (y) \$294,420.00 (such lesser amount being the "Balance") may be used by Tenant as reimbursement for (i) the purchase of furniture, trade fixtures and equipment for the Premises, (ii) the purchase and installation of cabling for the Premises and (iii) signage and other move related expenses, as well as any other soft costs. Landlord shall reimburse Tenant for such costs (in an amount equal to the lesser of the invoices submitted by Tenant or the Balance) within thirty (30) days after Tenant submits to Landlord invoices for such costs.

Notwithstanding the foregoing, Landlord shall not be required to make payment of Landlord's Contribution (a) if (or to the extent) Tenant shall not have submitted paid invoices for Tenant's Work together with all required supporting documentation by **December 31, 2020**, time being of the essence, or (b) at a time when there exists any Default of Tenant and/or (c) if this Lease shall have terminated. Any balance of Landlord's Contribution which Landlord is not required to reimburse to Tenant pursuant to this Section 3.2 shall be the property of Landlord.

3.3 Construction Representatives. Both Landlord and Tenant shall appoint one individual as its "Construction Representative" who is authorized to act on its behalf in connection with any matters arising pursuant to this Article 3. The Construction Representative may be changed from time to time by notice hereunder from the then current Construction Representative to the other party's Construction Representative or by notice from Landlord or Tenant pursuant to Section 10.1. Notwithstanding Section 10.1, any notices or other communication under this Article 3 may be made by letter or other writing sent by U.S. mail, facsimile or email, provided the communication is made by one party's Construction Representative to the other party's Construction Representative.

ARTICLE 4

Rent, Additional Rent, Insurance and Other Charges

4.1 The Annual Fixed Rent. Tenant shall pay Annual Fixed Rent to Landlord, or as otherwise directed by Landlord, without offset, abatement (except as provided in Article 7), deduction or demand. Annual Fixed Rent shall be payable in equal monthly installments, in advance, on the first day of each and every calendar month during the term of this Lease, by electronic transfer of immediately available funds to the account set forth in Section 1.1, or in such other manner, or to such other account as Landlord shall from time to time designate by notice to Tenant.

Annual Fixed Rent for any partial month shall be prorated on a daily basis (based on a 360 day year), and if Annual Fixed Rent commences on a day other than the first day of a calendar month, the first payment which Tenant shall make to Landlord shall be payable on the date Annual Fixed Rent commences and shall be equal to such pro-rated amount plus the installment of Annual Fixed Rent for the succeeding calendar month.

4.2 Additional Rent. Tenant shall pay to Landlord, as Additional Rent, Tenant's Percentage of Taxes and Operating Costs as provided in Subsections 4.2.1 and 4.2.2, and all other charges and amounts payable by or due from Tenant to Landlord (all such amounts referred to in this sentence being "Additional Rent").

4.2.1 Real Estate Taxes. If Taxes (as hereinafter defined) assessed against the Property (or estimated to be due by governmental authority) for any fiscal tax period (a "Tax Year") during the term of this Lease shall exceed Base Taxes, whether due to increase in rate or reassessment of the Property, or both, Tenant shall reimburse Landlord therefor, as Additional Rent, in an amount equal to Tenant's Percentage of any such excess (the "Tax Excess"). Except as otherwise provided in the immediately following paragraph, Tenant shall pay the Tax Excess to Landlord at least ten (10) days prior to the date or dates within any year during the term hereof that the same, or any fractional share thereof, shall be due and payable to any governmental authority responsible for collection of same (as stated in a notice to Tenant given at least twenty (20) days prior to the date or dates any such payment shall be due, which notice shall set forth the manner of computation of any Tax Excess due from Tenant, except that such payment shall be made to Landlord not later than ten (10) days after such notice to Tenant if such notice is given subsequent to the date twenty (20) days prior to the date the same is due and payable as aforesaid).

At Landlord's election, Tenant shall pay to Landlord, as Additional Rent on the first day of each calendar month during the term but otherwise in the manner provided for the payment of Annual Fixed Rent, estimated payments on account of the Tax Excess, such monthly amounts to be sufficient to provide Landlord by the time Tax payments are due or are to be made by Landlord a sum equal to the Tax Excess, as reasonably estimated by Landlord from time to time on account of Taxes for the then current Tax Year. If the total of such monthly remittances for any Tax Year is greater than the Tax Excess for such Tax Year, Landlord shall credit such overpayment against Tenant's subsequent obligations on account of Additional Rent until the overpayment is fully credited (or promptly refund such overpayment if the term of this Lease has ended and Tenant has no further obligations to Landlord); if the total of such remittances is less than the Tax Excess for such Tax Year, Tenant shall pay the difference to Landlord within thirty (30) days after being so notified by Landlord.

If, after Tenant shall have made all payments due to Landlord pursuant to this Subsection 4.2.1, Landlord shall receive a refund of any portion of Taxes as a result of an abatement of such Taxes by legal proceedings, settlement or otherwise (without either party having any obligation to undertake any such proceedings), Landlord shall pay or credit to Tenant Tenant's Percentage of that percentage of the refund (after first deducting any expenses, including attorneys', consultants' and appraisers' fees, incurred in connection with obtaining any such refund) which equals the percentage of the applicable Tax Year included in the term hereof, provided however, in no event shall Tenant be entitled to receive more than the sum of payments actually made by

Tenant on account of Taxes with respect to such Tax Year or to receive any payment if Taxes for any Tax Year are less than Base Taxes.

In the event that the Commencement Date shall occur or the term of this Lease shall expire or be terminated during any Tax Year, or should the Tax Year or period of assessment of Taxes be changed or be more or less than one (1) year, or should Tenant's Percentage be modified during any Tax Year due to a change in the rentable area of the Building and/or the Premises or otherwise, as the case may be, then the amount of Tax Excess which may be otherwise payable by Tenant as provided in this Subsection 4.2.1 shall be pro-rated on a daily basis based on a 360 day Tax Year.

"Taxes" shall mean all taxes, assessments, excises and other charges and impositions which are general or special, ordinary or extraordinary, foreseen or unforeseen, of any kind or nature which are levied, assessed or imposed by any governmental authority upon or against or with respect to the Property. If, at any time, any tax or excise on rents or other taxes, however described, are levied or assessed against Landlord, either wholly or partially in substitution for, or in addition to, real estate taxes assessed or levied on the Property, such tax or excise on rents or other taxes shall be included in Taxes; however, Taxes shall not include franchise, estate, inheritance, income (except to the extent that a tax on income or revenue is levied solely on rental revenues and not on other types of income and then only from rental revenue generated by the Property) or capital levy taxes assessed on Landlord. Taxes also shall include all court costs, attorneys', consultants' and accountants' fees, and other expenses incurred by Landlord in analyzing and contesting Taxes through and including all appeals. Taxes shall include any estimated payment made by Landlord on account of a fiscal tax period for which the actual and final amount of taxes for such period has not been determined by the governmental authority as of the date of any such estimated payment.

4.2.2 Operating Costs. If, during the term hereof, Operating Costs (as hereinafter defined) paid or incurred by Landlord in any twelve-month period established by Landlord (an "Operating Year") shall exceed Base Operating Costs, Tenant shall reimburse Landlord for the Tenant's Percentage of any such excess (such amount being hereinafter referred to as the "Operating Cost Excess"). Except as otherwise provided in the immediately following paragraph Tenant shall pay the Operating Cost Excess to Landlord within twenty (20) days from the date Landlord shall furnish to Tenant an itemized statement thereof. Any year-end statement by Landlord relating to Operating Costs (other than an invoice for a monthly estimate) shall be final and binding upon Tenant unless it shall within sixty (60) days after receipt thereof, contest any items therein by giving notice to Landlord specifying each item contested and the reasons therefor.

At the election of Landlord, Tenant shall pay to Landlord, as Additional Rent on the first day of each calendar month during the term but otherwise in the manner provided for the payment of Annual Fixed Rent, estimated payments on account of Operating Cost Excess, such monthly amounts to be sufficient to provide to Landlord, by the end of each Operating Year, a sum equal to the Operating Cost Excess for such Operating Year, as estimated by Landlord from time to time during such Operating Year. If, at the expiration of each Operating Year in respect of which monthly installments of Operating Cost Excess shall have been made as aforesaid, the total of such monthly remittances is greater than the Operating Cost Excess for such Operating Year, Landlord shall credit such overpayment against Tenant's subsequent obligations on

account of Additional Rent until the overpayment is fully credited (or promptly refund such overpayment if the term of this Lease has ended and Tenant has no further obligation to Landlord); if the total of such remittances is less than the Operating Cost Excess for such Operating Year, Tenant shall pay the difference to Landlord within thirty (30) days after receipt of an invoice from Landlord. In no event shall Tenant be entitled to receive any reimbursement or credit if Operating Costs for any Operating Year are less than Base Operating Costs.

In the event that the Commencement Date shall occur or the term of this Lease shall expire or be terminated during any Operating Year or Tenant's Percentage shall be modified during any Operating Year due to a change in the rentable area of the Building and/or the Premises or otherwise, as the case may be, then the amount of Operating Cost Excess which may be payable by Tenant as provided in this Subsection 4.2.2 shall be pro-rated on a daily basis based on a 360 day Operating Year.

"Operating Costs" shall mean all costs and expenses paid or incurred for the operation, cleaning, management, maintenance, repair and upkeep of the Property, including, without limitation:

(a) all salaries, wages, fringe benefits, payroll taxes and workmen's compensation insurance premiums related thereto and all other costs paid or incurred with respect to employment of personnel engaged in operation, administration, cleaning, maintenance, repair, upkeep and security of the Property including, without limitation, supervisors, property managers, accountants, bookkeepers, janitors, carpenters, engineers, mechanics, electricians and plumbers;

(b) all utilities and other costs related to provision of heat (including oil, steam and/or gas), electricity, air conditioning, and water (including sewer charges) and other utilities to the Property (exclusive of reimbursement to Landlord for any of same received as a result of direct billing to any tenant of the Building);

(c) all costs, including supplies, material and equipment costs, for cleaning and janitorial services to the Property, the Building and, if applicable, adjacent walks and ways (including, without limitation, trash removal and interior and exterior window cleaning), and interior and exterior landscaping and pest control;

(d) the cost of replacements for tools and other similar equipment used in the repair, maintenance, cleaning and protection of the Property, provided that, in the case of any such equipment used jointly on other property of Landlord, such costs shall be suitably prorated among the Property and such other properties;

(e) all costs and premiums for fire, casualty, rental income, liability and such other insurance as may be maintained from time to time by Landlord relating to the Property and premiums for fidelity bonds covering persons having custody or control over funds or other property of Landlord relating to the Property;

(f) all costs of maintaining, repairing, decorating, operating, administering, inspecting and protecting the Property (including, without limitation, lighting, installation, maintenance, repair and alteration of signs, snow removal on the Property and adjacent walks

{B2323618; 13}

and ways, paving, patching and restriping of parking areas and operation, maintenance, replacement and repair of heating, ventilating and air conditioning equipment, fire protection and security systems, roofs, parking areas and any other common Building equipment, systems or facilities), and all costs of structural and other repairs and replacements (other than repairs for which Landlord has received full reimbursement from contractors, other tenants of the Building or from others) necessary to keep the Property in good working order, repair, appearance and condition;

(g) costs of compliance with any laws, rules, regulations, ordinances, agreements or standards applicable to the Building or the Property, which conformance is not the responsibility of any tenant of the Building, and which Landlord elects or is required to perform, and costs of removal or remediation of or testing and monitoring for any Hazardous Materials in the Building or Property, which is not the responsibility of any tenant of the Building, and which Landlord elects to perform;

(h) a management fee of up to three (3%) percent of gross rents payable by tenants of the Property; and

(i) actual, out-of-pocket attorney's fees and disbursements (exclusive of any such fees and disbursements incurred in tax abatement proceedings or in the preparation of leases) and auditing and other professional fees and expenses.

Notwithstanding the foregoing, for purposes of this Lease, Operating Costs shall not include the following:

(i) Taxes;

(ii) Costs, including marketing costs, legal fees, space planner's fees, and brokerage fees incurred in connection with the original construction and development of the Property or the original or future leasing of the Property, and costs, including permit, license and inspection costs and allowances and other costs incurred with respect to the installation of tenant improvements made for new tenants in the Property or incurred in renovating or otherwise improving, decorating, painting or redecorating vacant leasable space for tenants or other occupants (or prospective tenants or occupants) of the Property;

(iii) the cost of capital expenditures (including reserves for capital expenditures not yet incurred) except as expressly provided herein;

(iv) depreciation, amortization, interest and principal payments on mortgages, and other debt costs except for the interest factor included in the annual charge off of those capital expenditures that are included in Operating Costs as hereinafter provided;

(v) costs for which Landlord is separately reimbursed by any tenant or occupant of the Property (other than pursuant to an operating cost clause) or by insurance by its carrier or any tenant's carrier (or if Landlord fails to carry insurance required to be carried by Landlord under this Lease, costs which would have been covered by insurance had Landlord obtained the coverage required to be carried under this Lease) or by anyone else, and utility costs paid for by any tenant directly;

{B2323618; 13}

- (vi) any bad debt loss, rent loss, or reserves for bad debts or rent loss;
- (vii) any attorney's fees, settlement fees, and other expenses incurred in connection with disputes with tenants or other occupants of the building
- (viii) any amounts paid as ground rental for the Property by Landlord;
- (ix) all items and services for which Tenant or any other tenant in the Property separately reimburses Landlord or which Landlord provides selectively to one or more tenants (but not to Tenant) without reimbursement;
- (x) the costs of removing or remediating Hazardous Materials that were placed or released in, on or under the Property by Landlord, another tenant, or Landlord's or another tenant's agents, contractors or employees;
- (xi) costs arising from Landlord's charitable or political contributions;
- (xii) the amount of any payments by Landlord to its affiliates for goods or services for the Property in excess of a competitive rate charged at properties comparable to the Building, except as otherwise provided in this Lease; and
- (xiii) costs incurred in connection with the financing, refinancing, mortgaging, selling or change of ownership of the Property including, without limitation, brokerage commissions, fees of consultants, attorneys, and accountants, closing costs, title insurance premiums, transfer taxes, recording fees and interest charges.
- (xiv) all costs associated with the operation of the business of the entity which constitutes Landlord (e.g., placement fees for employees, corporate accounting and employee training costs) as distinguished from costs incurred in the operation of the Property;
- (xv) costs and liabilities (including, without limitation, costs and liabilities for indemnity) arising from Landlord's, or its agents' or contractors', negligence or intentional misconduct, or breach, violation, or nonperformance of any term, covenant or provision of this Lease, any other lease in the Building, or any law, ordinance or governmental requirement; and
- (xvi) costs incurred by Landlord to correct any condition of the Building or Property that is in violation of any Laws as of the Commencement Date.

If, during the term of this Lease, Landlord shall make any capital expenditure, the total cost thereof shall not be included in Operating Costs for the Operating Year in which it was made, but Landlord may include in Operating Costs for such Operating Year in which such expenditure was made and in Operating Costs for each succeeding Operating Year an annual charge-off of such capital expenditure, provided such expenditure is (i) made to comply with any law, rule, regulation, order or ordinance, or any amendment thereto or interpretation thereof, first enacted after the date the Building was constructed, or (ii) made to protect the health, safety of the occupants of the Property, or (iii) made to replace worn out or obsolete items or to keep the Property in first-class condition, or (iv) designed to reduce Operating Costs, and then such amounts may be included only to the extent of actual Operating Expense savings. Annual charge-offs shall be determined by dividing the original capital expenditure plus interest at the

Prime Rate plus two hundred basis points, by the number of years of useful life of the improvement, repair, alteration or replacement made with the capital expenditure; and the useful life shall be determined reasonably by Landlord in accordance with then prevailing customs and practices of the real estate industry, consistently applied. Notwithstanding the foregoing, any capital expenditures required as a result of (i) Tenant's Work except for expenditures required by the Americans with Disabilities Act, or (ii) any installations, alterations or additions to the Premises made by Tenant after the Commencement Date, or (iii) any particular use of the Premises by Tenant shall be borne by Tenant alone and shall be paid by Tenant to Landlord as Additional Rent (unless included within Landlord's Contribution) in the Operating Year in which such expenditures are incurred.

Notwithstanding any provision of this Subsection 4.2.2 to the contrary, for purposes of computing Tenant's Operating Cost Excess under this Lease, in no event shall the amount of Controllable Operating Costs, as hereinafter defined, included in Operating Costs for any Operating Year exceed the Controllable Cost Cap, as hereinafter defined, for such Operating Year. If, pursuant to the provisions of this paragraph, any portion of Controllable Operating Costs is excluded from Operating Costs in an Operating Year, such amount shall accrue and shall be included in Operating Costs (as Controllable Operating Costs) with respect to the next following Operating Year, subject to the Controllable Cost Cap for such Operating Year. Such accrual shall continue until such amount has been fully included in Operating Costs for an Operating Year and Tenant has paid Tenant's Operating Cost Excess on account thereof notwithstanding the effect of the Controllable Cost Cap; however Tenant shall have no obligation to pay any Controllable Operating Costs which remain accrued and have not been included in Operating Costs as of the end of the Operating Year during which the term of this Lease expires. For the purposes of this paragraph the following definitions shall apply:

(a) "Controllable Operating Costs" shall mean all Operating Costs, except for the following, which shall not be subject to the limitations on increases described above: (i) the utility costs described in subparagraph (b) of the preceding definition of Operating Costs; (ii) the insurance costs described in subparagraph (e) of the preceding definition of Operating Costs; (iii) the costs described in subparagraph (a) of the preceding definition of Operating Costs which are governed or established by collective bargaining agreements or federal or state minimum wage laws; (iv) the management fees described in subparagraph (h) of the preceding definition of Operating Costs, and (v) the costs of snow and ice treatment and removal.

(b) "Controllable Cost Cap" shall mean (i) for the 2020 Operating Year, one hundred percent (100%) of the Controllable Operating Costs (i.e. the amount thereof shall not be limited for such year), and (ii) for each succeeding Operating Year, one hundred five percent (105%) of the amount of the Controllable Cost Cap for the immediately preceding Operating Year.

In addition, if during any portion of any Operating Year for which Operating Costs are being computed (including any period used to compute Base Operating Costs), less than ninety-five percent (95%) of the rentable area of the Building was leased to tenants or if Landlord is supplying less than ninety-five percent (95%) of the rentable area of the Building with the services and utilities being supplied hereunder, Landlord may, at its option, reasonably project, on an item-by-item basis, the Operating Costs that would have been incurred if ninety-five percent (95%) of the Building were occupied for such Operating Year and such services and

utilities were being supplied to ninety-five percent (95%) of the rentable area of the Building, and such projected amount shall, for the purposes hereof, be deemed to be the Operating Costs for such Operating Year.

Provided Tenant shall have paid all amounts invoiced by Landlord on account of Operating Costs for the applicable Operating Year, Landlord shall permit Tenant, at Tenant's sole cost and expense except as hereinafter provided, to review any of Landlord's invoices and statements ("Records") relating to Operating Costs for such Operating Year at the place where such Records are customarily maintained by Landlord, provided such review is requested by Tenant by notice given to Landlord not later than one hundred and twenty (120) days after Tenant's receipt of Landlord's final statement of Operating Costs for the applicable Operating Year (the "Final Statement") and thereafter undertaken by Tenant or its accountants (provided such accountants are compensated at usual hourly rate and not on a contingency fee basis) with due diligence. Landlord shall make such Records available to Tenant within a reasonable time after receipt of Tenant's request. If any of Landlord's Records (or copies thereof) are not customarily maintained at Landlord's office in the Clarksburg area, then, at Landlord's expense, Landlord shall have copies of such Records made and sent to Landlord's Clarksburg area office so that Tenant may conduct its examination at such office. Landlord may provide the Records to Tenant electronically. If Tenant objects to Landlord's determination of Operating Costs for any Operating Year, Tenant shall give Landlord notice (a "Dispute Notice") that Tenant disputes the correctness of such determination, specifying each item contested and the reasons therefor, not later than the later of (a) one hundred and twenty (120) days after delivery of the Final Statement for such Operating Year, or (b) forty-five (45) days after Landlord makes available the Records relating to Operating Costs for such Operating Year if Tenant submitted a timely request to review such documentation. If Tenant fails to give the Dispute Notice within the time period specified in the preceding sentence, then Tenant shall be deemed to have waived any and all objections to such Final Statement. If such dispute has not been settled by agreement within two (2) months after the giving of the Dispute Notice, either party may submit the dispute to arbitration in accordance with the commercial arbitration rules of the American Arbitration Association. The decision of the arbitrators shall be final and binding on Landlord and Tenant and judgment thereon may be entered in any court of competent jurisdiction.

If it should be agreed or decided that Operating Costs were overstated by five percent (5%) or more, then Landlord shall promptly reimburse Tenant for the reasonable costs incurred by Tenant in reviewing the Records, Tenant's reasonable arbitration costs, not to exceed \$2,500.00, plus any excess amount paid by Tenant on account of overstated Operating Costs with interest at the Default Rate. If it should be agreed or decided that Operating Costs were not overstated at all, then Tenant shall, as Additional Rent, promptly reimburse Landlord for its costs incurred in the arbitration, and if it should be agreed or decided that Operating Costs shall have been understated or Tenant shall not have paid Tenant's Operating Cost Excess in full, Tenant shall, as Additional Rent, promptly pay any deficiency. In the event of an overstatement which is less than five percent (5%), Landlord shall reimburse Tenant for the excess amount paid by Tenant on account of overstated Operating Costs without interest and each party shall be responsible for its own costs incurred in connection with such dispute. Tenant shall keep confidential all agreements involving the rights provided in this section and the results of any audits or arbitration conducted hereunder. Notwithstanding the foregoing, Tenant shall be permitted to furnish the foregoing information to its attorneys and accountants to the extent necessary to perform their respective service for Tenant.

{B2323618; 13}

4.3 Personal Property and Sales Taxes. Tenant shall pay all taxes charged, assessed or imposed upon the personal property of Tenant and all taxes on the sales of services or inventory, merchandise and any other goods by Tenant in or upon the Premises.

4.4 Insurance.

4.4.1 Insurance Policies. Tenant shall, at its expense, take out and maintain, throughout the term of this Lease, the following insurance:

4.4.1.1 Commercial general liability insurance (on an occurrence basis, including without limitation, contractual liability no less broad than that which is provided by the ISO Commercial General Liability coverage form CG 00 01 04-13, bodily injury, property damage, fire legal liability, and products and completed operations coverage) under which Tenant is named as an insured and Landlord and Landlord's Agent (and the holder of any mortgage on the Premises or Property, as set out in a notice from time to time) are named as additional insureds as their interests may appear, in an amount which shall, during the Original Term, be at least equal to the Commercial General Liability Insurance Limits, and, which, from time to time thereafter, shall be for such higher limits, if any, as Landlord shall determine to be customarily carried in the area in which the Property is located for premises similar to the Premises which are used for similar purposes and which are located in properties comparable to the Building;

4.4.1.2 Worker's compensation insurance with statutory limits covering all of Tenant's employees working on the Premises;

4.4.1.3 Property insurance on a "replacement cost" basis covering all furniture, furnishings, fixtures and equipment and other personal property brought to the Premises by Tenant and anyone acting under Tenant and all improvements and betterments to the Premises performed at Tenant's expense;

4.4.1.4 Business income and extra expense insurance covering not less than six (6) months loss of income; and

4.4.1.5 Such other insurance, in such amounts, as Landlord shall determine are customarily carried in the area in which the Property is located for premises similar to the Premises which are used for similar purposes and which are located in properties comparable to the Building.

4.4.2 Requirements. All policies of insurance maintained by Tenant shall contain deductibles and self-insured retentions not in excess of that reasonably approved by Landlord (Landlord hereby approving a deductible and self-insured retention of \$50,000), shall contain a clause confirming that such policy and the coverage evidenced thereby shall be primary with respect to any insurance policies carried by Landlord and shall be obtained from insurers qualified to do business and in good standing in the State of Maryland having a rating by A.M. Best Company of at least A-VIII or otherwise be acceptable to Landlord. A certificate of the insurer evidencing the insurance required to be maintained by Tenant hereunder shall be delivered to Landlord prior to the Commencement Date. Not later than ten (10) days prior to the expiration date set forth in any certificate evidencing the insurance required hereunder, Tenant

{B2323618; 13}

shall deliver to Landlord evidence reasonably satisfactory to Landlord, which may be in the form of a letter from Tenant's insurance broker, that Tenant has taken all steps necessary to renew or replace such insurance as of the expiration thereof so that there is no lapse in coverage, and certificates of the insurer of policy renewal or replacement shall be delivered to Landlord during the term of this Lease not later than fifteen (15) days after the expiration date set forth in any previously issued certificate evidencing such insurance. Each such policy shall be non cancelable and not materially changed with respect to the interest of Landlord and such mortgagees of the Property without prior written notice as provided in the policy, and if the policy shall not require the insurance company to give notice directly to Landlord and/or such mortgagee, Tenant shall give such notice immediately upon having notice of any such cancellation or change. Any insurance required of Tenant under this Lease may be furnished by Tenant under a blanket policy carried by it provided that such blanket policy shall reference the Premises, and shall guarantee a minimum limit available for the Premises equal to the insurance amounts required in this Lease.

4.4.3 Waiver of Subrogation. Landlord and Tenant shall each endeavor to secure an appropriate clause in, or an endorsement upon, each property damage insurance policy obtained by it and covering the Building, the Premises or the personal property, fixtures and equipment located therein or thereon, pursuant to which the respective insurance companies waive subrogation and permit the insured, prior to any loss, to agree with a third party to waive any claim it might have against said third party. The waiver of subrogation or permission for waiver of any claim hereinbefore referred to shall extend to the agents of each party and its employees and, in the case of Tenant, shall also extend to all other persons and entities occupying or using the Premises by, through or under Tenant. If and to the extent that such waiver or permission can be obtained only upon payment of an additional charge then the party benefiting from the waiver or permission shall pay such charge upon demand, or shall be deemed to have agreed that the party obtaining the insurance coverage in question shall be free of any further obligations under the provisions hereof relating to such waiver or permission from such insurance companies.

Subject to the foregoing provisions of this Subsection 4.4.3, and insofar as may be permitted by the terms of the property insurance policies carried by it, each party hereby releases the other with respect to any claim which it might otherwise have against the other party for any loss or damage to its property to the extent such damage is actually covered or would have been covered by policies of property insurance required by this Lease to be carried by the respective parties hereunder. In addition, Tenant agrees to exhaust any and all claims against its insurer(s) prior to commencing an action against Landlord for any loss covered by insurance required to be carried by Tenant hereunder.

4.5 Utilities. Tenant shall during the term pay all charges for telephone and other utilities or services not supplied by Landlord pursuant to Subsections 5.1.1 and 5.1.2, whether designated as a charge, tax, assessment, fee or otherwise, all such charges to be paid as the same from time to time become due. Except as otherwise provided in this Section 4.5 or in Article 5, it is understood and agreed that Tenant shall make its own arrangements for the installation or provision of all utilities and services and that Landlord shall be under no obligation to furnish any utilities to the Premises.

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4.6 Late Payment of Rent. If any installment of Annual Fixed Rent or any Additional Rent is not paid on or before the date the same is due, it shall bear interest (as Additional Rent) from the date due until the date paid at the Default Rate (as defined in Section 8.4). In addition, if any installment of Annual Fixed Rent or Additional Rent is unpaid for more than five (5) days after the date due, Tenant shall pay to Landlord a late charge equal to the greater of One Hundred Dollars (\$100) or ten percent (10%) of the delinquent amount. Notwithstanding the foregoing, as to the first such late payment in any calendar year, Tenant shall not be required to pay such late charge unless Tenant fails to pay the amount due within five (5) days after Landlord gives Tenant notice of such late payment (once Landlord shall have given Tenant such a notice, no such notice shall be required as a condition to Tenant's obligation to pay the late charge with respect to any subsequent late payments in the same calendar year). The parties agree that the amount of such late charge represents a reasonable estimate of the cost and expense that would be incurred by Landlord in processing and administration of each delinquent payment by Tenant, but the payment of such late charges shall not excuse or cure any default by Tenant under this Lease. Absent specific provision to the contrary, all Additional Rent shall be due and payable in full fourteen (14) days after demand by Landlord.

4.7 Security Deposit. Tenant shall not be required to post a security deposit.

ARTICLE 5

Landlord's Covenants

5.1 Affirmative Covenants. Landlord shall, during the term of this Lease provide the following:

5.1.1 Heat and Air-Conditioning. Landlord shall provide and maintain heat, ventilation and air-conditioning ("HVAC") equipment sufficient to maintain the Premises at comfortable temperatures for general office use, subject to all federal, state and municipal regulations, during Normal Building Operating Hours (as defined in the Rules and Regulations) and subject to compliance by Tenant with the following and the provisions of Subsection 6.2.4. If Tenant shall require HVAC at times other than Normal Building Operating Hours, Landlord may furnish such service and Tenant shall pay therefor such charges as may from time to time be in effect to reimburse Landlord for the actual cost of providing HVAC outside of Normal Building Operating Hours. If the temperature otherwise maintained in any portion of the Premises by the HVAC system is affected as a result of (i) the type or quantity of any lights, machines or equipment used by Tenant in the Premises, (ii) the occupancy of any portion of the Premises by more than one person per two hundred (200) square feet of rentable area, (iii) an electrical load for lighting or power in excess of the limits specified in Subsection 6.2.4, or (iv) any partitioning or other improvements installed by Tenant, then at Tenant's sole cost, Landlord may install any equipment, or modify any existing equipment Landlord deems necessary to restore the temperature balance. Tenant agrees to keep closed, when necessary, blinds or other window treatments which, because of the sun's position, must be closed to provide for the efficient operation of the air conditioning system, and Tenant agrees to cooperate with Landlord and to abide by the reasonable regulations and requirements which Landlord may prescribe for the proper functioning and protection of the HVAC system. Landlord shall have no responsibility for providing any service from Supplemental HVAC Equipment or any Separate HVAC Equipment, as defined in Subsection 6.1.3.

5.1.2 Cleaning; Water. Landlord shall provide cleaning, pest control, maintenance and landscaping to the common areas of the Building and Property (including snow removal to the extent necessary to maintain reasonable access to the Building) in accordance with standards generally prevailing throughout the term hereof in comparable office buildings in the greater Clarksburg area; and furnish hot and cold running water for ordinary drinking, kitchen, lavatory and toilet facilities for use in connection with the Permitted Uses (as opposed to special laboratory or other uses in excess of the Permitted Uses) and shall cause the Premises to be cleaned in accordance with the standards set forth in Exhibit E attached hereto. Tenant shall pay to Landlord upon invoice the actual costs incurred by Landlord for (x) extra cleaning work in the Premises required because of carelessness, indifference, misuse or neglect on the part of Tenant or its subtenants or its or their employees or visitors, and (y) removal from the Premises and the Building of any refuse and rubbish of Tenant in excess of that ordinarily accumulated in connection with the Permitted Use including, without limitation, kitchen refuse, or at times other than Landlord's standard cleaning times. Notwithstanding the foregoing, Landlord shall not be required to clean any portions of the Premises used for preparation, serving or consumption of food or beverages or other special purposes if same require greater or more difficult cleaning work than office areas, and Tenant agrees, at Tenant's expense, to retain Landlord's cleaning contractor to perform such extra cleaning, provided that the charges of such cleaning contractor shall be commercially reasonable. Notwithstanding the foregoing, Tenant shall be entitled to engage contractors, with the advance written consent of Landlord, which shall not be unreasonably withheld, conditioned or delayed, to perform such cleaning tasks as Tenant determines including, without limitation, cleaning electrostatic discharge flooring and materials.

Landlord, its cleaning contractor and their respective employees shall have access to the Premises after 6:00 p.m. and before 8:00 a.m. and shall have the right to use, without charge therefor, all light, power and water in the Premises reasonably required to clean the Premises as required hereunder.

Notwithstanding the foregoing or any other provision of this Lease to the contrary, Tenant agrees that Landlord shall have no obligation to handle or dispose of any (a) radioactive, volatile, highly flammable, explosive or toxic materials, (b) any Hazardous Materials as defined in Subsection 6.2.8, (c) construction debris, or (d) any other waste which, because of its nature, requires special handling or disposal; any item identified in clauses "(a)" through "(d)", above, hereinafter referred to as "Excepted Waste". Tenant agrees that the handling and disposal of Excepted Waste, and the cleaning of any portion of the Premises contaminated by Excepted Waste, shall be the sole responsibility of Tenant and Tenant shall contract directly for the handling and disposal of Excepted Waste and the cleaning of any portion of the Premises contaminated by Excepted Waste, at Tenant's sole cost and expense. Tenant is prohibited from placing, disposing or discarding Excepted Waste with the ordinary trash of the Building. Title to and liability for any Excepted Waste shall, at all times, remain with Tenant, and Tenant agrees to indemnify and hold Landlord and Landlord's mortgagee(s) harmless from any and all liability relating to or arising from the handling or disposal of Excepted Waste.

If Tenant uses water for any purpose other than ordinary drinking, lavatory and toilet purposes, Landlord may assess a reasonable charge for the additional water so used or install a water meter and thereby measure Tenant's water consumption for all purposes. In the latter event, Tenant shall pay the cost of the meter and the cost of installation thereof and shall keep such meter and installation equipment in good working order and repair. Tenant agrees to pay

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for water consumed, as shown on such meter, together with the sewer charge based on such meter charges, as and when bills are rendered, and if Tenant shall fail to make such payment, Landlord may pay such charges and collect the same from Tenant as Additional Rent.

5.1.3 Lighting and Electricity. Landlord shall purchase and install all building standard lamps, tubes, bulbs, starters and ballasts for lighting fixtures in the Premises; provide lighting to public and common areas of the Property; and arrange for the supply of electrical power to the Premises to accommodate a load not exceeding the limitations contained in Subsection 6.2.4.

5.1.4 Repairs. Except as otherwise expressly provided herein, Landlord shall make such repairs and replacements to the roof, exterior walls, floor slabs and other structural components of the Building, and to the common areas and facilities of the Building (including any common plumbing, electrical and HVAC equipment and any other common equipment or systems in the Building) as may be necessary to keep them in good repair and condition (exclusive of equipment installed by Tenant and except for those repairs required to be made by Tenant pursuant to Subsection 6.1.3 hereof and repairs or replacements occasioned by any act or negligence of Tenant, its servants, agents, customers, contractors, employees, invitees, or licensees).

5.2 Interruption. Landlord shall have no responsibility or liability to Tenant for failure, interruption, inadequacy, defect or unavailability of any services, facilities, utilities, repairs or replacements or for any failure or inability to provide access or to perform any other obligation under this Lease caused by breakage, accident, fire, flood or other casualty, strikes or other labor trouble, order or regulation of or by any governmental authority, inclement weather, repairs, inability to obtain or shortages of utilities, supplies, labor or materials, war, civil commotion or other emergency, transportation difficulties or due to any act or neglect of Tenant or Tenant's servants, agents, employees or licensees or for any other cause beyond the reasonable control of Landlord, and in no event shall Landlord be liable to Tenant for any indirect or consequential damages suffered by Tenant due to any such failure, interruption, inadequacy, defect or unavailability; and such failure or inability on the part of Landlord to furnish any of same for any of the reasons set forth in this paragraph shall not be construed as an eviction of Tenant, actual or constructive, nor entitle Tenant to an abatement of rent, nor render the Landlord liable in damages, nor, except to the extent set forth in Section 10.13 below, release Tenant from prompt fulfillment of any of its covenants under this Lease.

Landlord reserves the right to deny access to the Building and to interrupt the services of the HVAC, plumbing, electrical or other mechanical systems or facilities in the Building when necessary from time to time by reason of accident or emergency, or for repairs, alterations, replacements or improvements which in the reasonable judgment of Landlord are desirable or necessary, until such repairs, alterations, replacements or improvements shall have been completed. Landlord shall use reasonable efforts to minimize the duration of any such interruption and to give to Tenant at least five (5) Business Days' notice if service is to be interrupted, except in cases of emergency.

5.3 Outside Services. In the event Tenant wishes to obtain services or to hire vendors relating to the Premises, Tenant shall first obtain the prior approval of Landlord, not to be unreasonably withheld, conditioned or delayed, for the installation and/or utilization of such

{B2323618; 13}

services or vendors. Such services shall include, but shall not be limited to, utility providers, security services, moving services, equipment installers and the like. Notwithstanding any Landlord approval of the installation and/or utilization of such services or vendors, such installation and utilization shall be at Tenant's sole cost, risk and expense.

5.4 Access to Building. Subject to the provisions of Section 5.2, Tenant shall have access to the Premises twenty-four (24) hours per day, seven (7) days per week. Tenant acknowledges that Tenant is responsible for providing security to the Premises following Tenant's entry onto the Premises for any reason and for its own personnel whenever located therein. Subject to the foregoing, Landlord shall, at all times, retain the right to control and prevent such access by all persons whose presence, in the sole discretion of Landlord, may jeopardize the safety, protection, character, reputation and interests of the Building and its tenants or occupants. Landlord shall in no case be liable for damages resulting from any error with regard to the admission or exclusion of any person from the Building.

With Landlord's approval, which approval shall not be unreasonably withheld, conditioned or delayed, Tenant shall be permitted to install an electronic access control system for the Premises. Tenant shall provide Landlord with the proper access codes or keys necessary for Landlord to obtain access to the Premises. Such access control system may be installed as part of Tenant's Work (and may be funded by Landlord's Contribution as provided in Section 3.2(d)), or if not included in Tenant's Work, installed at any time during the term in accordance with Subsection 6.2.5 and at Tenant's sole cost and expense.

5.5 Parking. During the term hereof, Landlord shall make available to Tenant, its employees and invitees, at no additional charge, sixty-five (65) unreserved parking spaces in the surface parking lot appurtenant to the Building (the "Parking Facility"), all of which shall be available on a first-come, first-served basis. Tenant, its employees and invitees shall use the Parking Facility for the parking of passenger vehicles and commercial cargo vans only and shall not allow any of its vehicles, or any vehicles on the Parking Facility through Tenant, to be left in the Parking Facility overnight, except for (i) vehicles belonging to employees or invitees of Tenant who are either present at the Premises or whose vehicles shall remain in the Parking Facility for periods of not more than five (5) consecutive days while such persons are traveling for Tenant and (ii) not more than three (3) vehicles owned or leased by Tenant and used in connection with the conduct of Tenant's business operations in the Premises. Landlord reserves the right to (a) implement and modify systems to regulate access to and use of the Parking Facility, (b) designate and redesignate reserved and unreserved parking areas within the Parking Facility (for some or all tenants), provided that Tenant continues to have access to the parking spaces provided for in this Section 5.5, (c) change entrances or exits and alter traffic flow within the Parking Facility, and (d) modify the Parking Facility to any extent, provided that such modifications or changes do not have a materially and commercially adverse impact on Tenant's ability to access the Parking Facility or the Building. Landlord further reserves the right to close the Parking Facility or portions thereof temporarily to the extent necessary for maintenance and repairs. Tenant acknowledges that Landlord is not required to provide any security or security services for any of the Parking Facility. Tenant shall, and shall use reasonable efforts to cause its employees to, comply with all reasonable rules and regulations pertaining to the Parking Facility, as the same may be established amended, revised or supplemented by Landlord.

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5.6 Landlord's Insurance. At all times during the term, Landlord, as part of the Operating Costs, shall keep in full force and effect (i) standard form so-called extended coverage property insurance on the Building, in an amount not less than the full replacement value thereof (subject to the deductibles and excluding footings and foundations and any leasehold improvements performed by tenants), and (ii) any combination of commercial general liability insurance policy (or an equivalent), excess liability policy and/or umbrella liability policy in the amount of Five Million Dollars (\$5,000,000) combined single limit for injury to, or death of, one or more persons in an occurrence, and for damage to tangible property (including loss of use) in an occurrence.

5.7 Indemnification. Subject to Section 10.4 and Section 10.5, and to the extent not subject to the provisions of Subsection 4.4.3, Landlord shall defend, indemnify and hold harmless Tenant and its directors, officers, agents and employees (i) against and from any and all demands, claims, causes of action, damages, liabilities, fines, penalties, judgments and expenses (including, without limitation, reasonable attorneys' fees) asserted by or on behalf of any third party on account of bodily injury or damage to the property of such third party (excluding damage to the property of any subtenant or assignee of Tenant) arising out of the negligence or other wrongful conduct of Landlord or its agents, contractors or employees during the term of this Lease or the Early Access Period and (ii) against and from any liability for fines or penalties arising out of Landlord's breach of this Lease or violation of applicable law. In case of any action or proceeding brought against Tenant or another indemnified party by reason of any such claim, Landlord, upon notice from Tenant or such other indemnified party, shall resist or defend, at Landlord's expense, such action or proceeding and employ counsel therefor reasonably satisfactory to Tenant.

5.8 Legal Compliance. Landlord shall keep the structure and the common areas and systems of the Property in material compliance with all laws, building codes and regulations applicable thereto (including the Americans With Disabilities Act) after giving effect to any so-called grandfathering provisions (provided Tenant shall have complied with its obligations under Subsections 6.1.3 and 6.1.4).

5.9 Landlord's Hazardous Waste Representation. Landlord represents that to the best of Landlord's actual knowledge, Landlord has not used, generated, manufactured, produced, stored, released, discharged or disposed of on, under, about the Premises (or off-site of the Premises that might affect the Premises) or transferred to or from the Premises, any Hazardous Materials (as defined in Subsection 6.2.8) or allowed any other person or entity to do so, except in material compliance with Environmental Laws (as defined in Subsection 6.2.8).

ARTICLE 6

Tenant's Additional Covenants

6.1 Affirmative Covenants.

6.1.1 Perform Obligations. Tenant shall perform promptly all of the obligations of Tenant set forth in this Lease; and pay when due the Annual Fixed Rent and Additional Rent and all other amounts which by the terms of this Lease are to be paid by Tenant.

6.1.2 Use. Tenant shall, during the term of this Lease, use the Premises only for the Permitted Uses and from time to time, procure and maintain all licenses and permits necessary therefor and for any other use or activity conducted at the Premises, at Tenant's sole expense.

6.1.3 Repair and Maintenance.

(a) Tenant shall, during the term of this Lease, maintain the Premises in neat and clean order and condition and perform all repairs to the Premises and all fixtures, systems, and equipment therein (including Tenant's equipment and other personal property and any HVAC Equipment serving all or any portion of the Premises to the exclusion of any other space in the Building ("Separate HVAC Equipment")) as are necessary to keep them in good and clean working order, appearance and condition, reasonable use and wear thereof and damage by unavoidable fire or other casualty only excepted and shall replace any damaged or broken glass in windows and doors of the Premises (except glass in the exterior walls of the Building) with glass of the same quality as that damaged or broken.

(b) Supplemental HVAC Equipment. Tenant, at its sole cost and expense and subject to the compliance with all applicable codes, laws and regulations and the provisions of this Subsection 6.1.3(b), may install in the Premises and operate during the term, subject to all applicable provisions of this Lease, additional HVAC equipment ("Supplemental HVAC Equipment") to provide additional or supplemental heating, cooling and/or ventilation to all of the Premises or any portions thereof or equipment of Tenant therein. The design and installation of such Supplemental HVAC Equipment shall be performed in accordance with Subsection 6.2.5 and Exhibit C and all other applicable provisions of this Lease. All such Supplemental HVAC Equipment shall be separately metered for utilities and Tenant shall pay such utility charges directly to the public utility. If separate metering is not possible, then Tenant shall pay as Additional Rent the cost of utilities consumed by Tenant's Supplemental HVAC Equipment as determined by Landlord by submetering or similar device and the cost of installing, operating, maintaining and repairing any meter or other device used to measure such utility consumption and any cost incurred by Landlord in keeping account of or determining the utility consumption of Tenant's Supplemental HVAC Equipment. Notwithstanding anything herein to the contrary, Landlord shall have no obligation to operate, maintain, repair or replace any Supplemental HVAC Equipment and Tenant shall operate, maintain, repair and replace, as necessary, all Supplemental HVAC Equipment at Tenant's sole cost and expense so that all such Supplemental HVAC Equipment is kept in good operating condition. In furtherance of the foregoing, Tenant, throughout the term, shall secure, pay for, keep in full force and effect and enforce, contracts with licensed and reputable service companies providing for regular preventive maintenance and repair, in a manner consistent with office space in buildings in the greater Clarksburg area that are comparable to the Building, of the Supplemental HVAC Equipment, and Tenant shall furnish Landlord with copies of such contracts upon request.

6.1.4 Compliance with Law. Tenant shall, during the term of this Lease, make all repairs, alterations, additions or replacements to the Premises required by any law or ordinance or any order or regulation of any public authority; keep the Premises safe and equipped with all safety appliances so required; and comply with, and perform all repairs, alterations, additions or replacements required by, the orders and regulations of all governmental authorities with respect to zoning, building, fire, health and other codes, regulations, ordinances

or laws applicable to the Premises or other portions of the Property being used by Tenant and arising out of any use being conducted in or on the Premises or arising out of any work performed by Tenant.

6.1.5 Indemnification. Tenant shall neither hold, nor attempt to hold, Landlord or its employees or Landlord's agents or their employees liable for, and Tenant shall defend, indemnify and hold harmless Landlord, its employees and Landlord's agents and their employees from and against, any and all demands, claims, causes of action, fines, penalties, damage, liabilities, judgments and expenses (including, without limitation, reasonable attorneys' fees) asserted by or on behalf of any third party arising out of: (i) the use or occupancy of the Premises by Tenant or any person claiming under Tenant; (ii) any matter occurring on the Premises during the term; (iii) any acts, omissions or negligence of Tenant or any person claiming under Tenant, or the contractors, agents, employees, invitees or visitors of Tenant or any such person; (iv) any breach, violation or nonperformance by Tenant or any person claiming under Tenant or the employees, agents, contractors, invitees or visitors of Tenant or any such person of any term, covenant or provision of this Lease or any law, ordinance or governmental requirement of any kind; (v) claims of brokers or other persons for commissions or other compensation arising out of any actual or proposed sublease of any portion of the Premises or assignment of Tenant's interest under this Lease, or Landlord's denial of consent thereto or exercise of any of Landlord's other rights under Subsection 6.2.1; and (vi) any injury or damage to the person, property or business of Tenant, its employees, agents, contractors, invitees, visitors or any other person entering upon the Property under the express or implied invitation of Tenant. If any action or proceeding is brought against Landlord or its employees or Landlord's agents or their employees by reason of any such claim, Tenant, upon notice from Landlord, shall defend the same, at Tenant's expense, with counsel reasonably satisfactory to Landlord. Notwithstanding the foregoing in no event shall this Subsection 6.1.5 require Tenant to indemnify or defend Landlord or its employees or Landlord's agents or their employees against any demand, cause of action, fine, penalty, judgment, loss, cost, damage, liability, claim, or expense to the extent arising out of the negligence or willful misconduct of Landlord or its employees or Landlord's agents or their employees.

6.1.6 Landlord's Right to Enter. Tenant shall, during the term of this Lease, permit Landlord and its agents and invitees to enter into and examine the Premises at reasonable times and to show the Premises to prospective lenders, partners and purchasers and others having a bonafide interest in the Premises, and to make such repairs, alterations and improvements and to perform such testing and investigation as Landlord shall reasonably determine to make or perform. In addition, Landlord may, at any time during the last eighteen (18) months of the term (or at any time during a Default of Tenant), show the Premises to prospective tenants. Except in instances posing an imminent threat to life or property, and except for any entry pursuant to the performance of Landlord's routine obligations under Article 5, Landlord shall give Tenant reasonable notice prior to making any entry onto the Premises, provided, however, notwithstanding Section 10.1 to the contrary, such notice may be made orally or by email.

6.1.7 Personal Property at Tenant's Risk. Tenant shall, during the term of this Lease keep, at the sole risk and hazard of Tenant, all of the furnishings, fixtures, equipment, effects and property of every kind, nature and description of Tenant and of all persons claiming by, through or under Tenant which may be on the Property, and if the whole or any part thereof shall be lost, destroyed or damaged by fire, water or otherwise, or by the leakage or bursting of

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water pipes, steam pipes, or other pipes, by theft or from any other cause, Landlord shall have no liability therefor including, without limitation, pursuant to Section 5.7.

6.1.8 Payment of Landlord's Cost of Enforcement. Tenant shall pay on demand Landlord's reasonable, actual, out-of-pocket expenses, including attorneys' fees, incurred in enforcing any obligation of Tenant under this Lease or in curing any Default of Tenant.

6.1.9 Yield Up. Tenant shall, at the expiration or earlier termination of the term of this Lease, or upon any earlier reentry or retaking of possession of the Premises by Landlord and/or termination of Tenant's right of possession and/or occupancy of the Premises, as applicable, surrender all keys to the Premises; remove all of its trade fixtures and personal property in the Premises; remove such installations (including wiring and cabling wherever located, unless Landlord requests that Tenant cap or seal its wiring and cabling at each end, properly label such wiring and cabling for future use, and surrender such wiring and cabling in a good and safe condition), alterations, signs, and improvements made (or if applicable, restore any items removed) by or on behalf of Tenant as Landlord may request wherever located and all of Tenant's signs; repair all damage caused by such removal; and vacate and yield up the Premises (including all installations, alterations, signs and improvements made by or on behalf of Tenant except as Landlord shall request Tenant to remove), broom clean and in the same good order and repair in which Tenant is obliged to keep and maintain the Premises by the provisions of this Lease. Any property not so removed shall be deemed abandoned and may be removed and disposed of by Landlord in such manner as Landlord shall determine and Tenant shall pay Landlord the entire cost and expense incurred by it in effecting such removal and disposition and in making any incidental repairs and replacements to the Premises and for use and occupancy during the period after the expiration or earlier termination of the term of this Lease and prior to the performance by Tenant of its obligations under this subsection 6.1.9. Tenant shall further indemnify Landlord against all loss, cost and damage resulting from Tenant's failure or delay in surrendering the Premises as above provided.

6.1.10 Rules and Regulations. Tenant shall, during the term of this Lease, observe and abide by the Rules and Regulations of the Building set forth as Exhibit B, as the same may from time to time be amended, revised or supplemented (the "Rules and Regulations"), provided that such amendments, revisions or supplements shall not materially change the obligations of Landlord or Tenant as set forth in this Lease as of the Date of this Lease. Tenant shall further be responsible for compliance with the Rules and Regulations by the employees, servants, agents and visitors of Tenant. The failure of Landlord to enforce any of the Rules and Regulations against Tenant, or against any other tenant or occupant of the Building, shall not be deemed to be a waiver of such Rules and Regulations. Tenant shall be liable for all injuries or damages sustained by Landlord or Landlord's agents or by other tenants, occupants or invitees of the Building arising by reason of any breach of the Rules or Regulations by Tenant or by Tenant's agents or employees.

6.1.11 Estoppel Certificate. Tenant shall, within ten (10) Business Days' following written request by Landlord, execute, acknowledge and deliver to Landlord a statement in form satisfactory to Landlord in writing certifying that this Lease is unmodified and in full force and effect and that Tenant has no defenses, offsets or counterclaims against its obligations to pay the Annual Fixed Rent and Additional Rent and any other charges and to perform its other covenants under this Lease (or, if there have been any modifications, that this

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Lease is in full force and effect as modified and stating the modifications and, if there are any defenses, offsets or counterclaims, setting them forth in reasonable detail), the dates to which the Annual Fixed Rent and Additional Rent and other charges have been paid, and any other matter pertaining to this Lease as Landlord may reasonably request. Any such statement delivered pursuant to this subsection 6.1.11 may be relied upon by any prospective purchaser or mortgagee of the Property, or any prospective assignee of such mortgage.

6.1.12 Landlord's Expenses For Consents. Tenant shall reimburse Landlord, as Additional Rent, promptly on demand for all reasonable, actual legal, engineering and other professional services expenses incurred by Landlord in connection with all requests by Tenant for consent or approval hereunder. If Tenant shall so requests at the time it requests Landlord approval or consent, Landlord shall give Tenant a good faith estimate of any such costs and Landlord shall have no obligation to consider Tenant's request for consent or approval, until Tenant shall have agreed in writing to pay such costs (regardless of whether they do or do not exceed such estimate).

6.1.13 Financial Information. Tenant shall, from and after the Date of this Lease and thereafter throughout the term of this Lease, provide Landlord with such information as to Tenant's financial condition and/or organizational structure as Landlord or the holder of any mortgage of the Property reasonably requires, within fifteen (15) days of request. Landlord acknowledges that any information provided by Tenants constitutes confidential information of Tenant ("Tenant Confidential Information"). Landlord shall use reasonable efforts to keep the Tenant Confidential Information confidential and not to disclose the same to third parties; provided, however, that such Confidential Information may be disclosed by Landlord to those of its officers, employees, attorneys, accountants, lenders and financial advisors (collectively, "Landlord's Representatives") who need to know such information in connection with Tenant's use and occupancy of the Premises and for financial reporting and credit related activities, or as may be required by law. Landlord furthermore agrees to inform Landlords Representatives of the confidential nature of Tenant Confidential Information and to use all reasonable efforts to cause each Representative to treat Tenant Confidential Information confidentially and in accordance with the terms of this paragraph. Tenant shall be deemed to have fully complied with its obligations under this Subsection 6.1.13, without the need to provide any financial or other information to Landlord, and without such information being deemed Tenant Confidential Information, so long as Tenant has securities registered under the Securities Exchange Act of 1934 (the "Exchange Act") and is current in the filings required to be made by Tenant with the Securities and Exchange Commission (the "SEC").

6.2 Negative Covenants.

6.2.1 Assignment and Subletting. Tenant shall not assign, mortgage, pledge, hypothecate, encumber or otherwise transfer this Lease or any interest herein or sublease (which term shall be deemed to include the granting of concessions and licenses and the like) all or any part of the Premises or suffer or permit this Lease or the leasehold estate hereby created or any other rights arising under this Lease to be assigned, transferred, mortgaged, pledged, hypothecated or encumbered, in whole or in part, whether voluntarily, involuntarily or by operation of law, or permit the use or occupancy of the Premises by anyone other than Tenant, or the Premises to be offered or advertised for assignment or subletting, except as hereinafter provided. Unless Tenant's stock shall be traded on a domestic national securities exchange, any

transfer of the stock or partnership or beneficial interests or other evidences of ownership of Tenant or the issuance of additional stock or partnership or beneficial interests or other indicia of ownership in Tenant or any transaction pursuant to which Tenant is merged or consolidated with another entity or pursuant to which all or substantially all of Tenant's assets or all or substantially all of Tenant's assets used in conducting the business conducted in the Premises are transferred to any other entity shall be deemed to be an assignment of this Lease.

Notwithstanding the foregoing, regardless of whether Tenant's stock shall be traded on a domestic national securities exchange, Tenant may, without the need for Landlord's consent, but only upon not less than ten (10) days prior notice to Landlord, assign its interest in this Lease (a "Permitted Assignment") to (i) any entity which shall be a successor to Tenant either by merger or consolidation (a "Merger") or to a purchaser of all or substantially all of Tenant's assets or all or substantially all of Tenant's assets used in conducting the business conducted in the Premises in either case provided the successor or purchaser shall have a tangible net worth, after giving effect to the transaction, of not less than the greater of the net worth of Tenant named in Section 1.1 as of the Date of this Lease or the net worth of Tenant named in Section 1.1 immediately prior to such Merger or sale (the "Required Net Worth") or (ii) any entity (an "Affiliate") which is a direct or indirect subsidiary or parent (or a direct or indirect subsidiary of a parent) of the named Tenant set forth in Section 1.1, in either case of (i) or (ii) only so long as (I) the principal purpose of such assignment is not the acquisition of Tenant's interest in this Lease (except if such assignment is made for a valid intracorporate business purpose to an Affiliate) and is not made to circumvent the provisions of this Subsection 6.2.1, (II) except if pursuant to a Merger permitted by clause (i) above, Tenant shall, contemporaneously with such assignment, provide Landlord with a fully executed counterpart of any such assignment, which assignment shall comply with the provisions of this Subsection 6.2.1 and shall include an agreement by the assignee in form reasonably satisfactory to Landlord, to assume all of Tenant's obligations under this Lease and be bound by all of the terms of this Lease, (III) in the case of an actual or deemed assignment pursuant to clause (i), Tenant shall provide Landlord, not less than ten (10) days in advance of any such assignment, evidence reasonably satisfactory to Landlord of the Required Net Worth of the successor or purchaser, and (IV) there shall not be a Default of Tenant at the effective date of such assignment. Tenant shall also be permitted, without the need for Landlord's consent, but only upon not less than ten (10) days prior notice to Landlord, to enter into any sublease (a "Permitted Sublease") with any Affiliate provided that such sublease shall expire upon any event pursuant to which the sublessee thereunder shall cease to be an Affiliate. Any assignment to an Affiliate shall provide that it may, at Landlord's election, be terminated and deemed void if during the term of this Lease such assignee or any successor to the interest of Tenant hereunder shall cease to be an Affiliate

In the event that Tenant shall intend to enter into any sublease or assignment (other than a Permitted Sublease or a Permitted Assignment), Tenant shall, not later than forty-five (45) days prior to the proposed commencement of such sublease or assignment, give Landlord notice of such intent, identifying the proposed subtenant or assignee, all of the terms and conditions of the proposed sublease or assignment and such information as Landlord may reasonably request regarding the financial condition and identity of the proposed subtenant or assignee. Landlord may elect (a) to terminate the term of this Lease if Tenant intends to assign this Lease, or to sublease (including expansion options) more than fifty percent (50%) of the Premises for a term (including extension options) of more than half of the remaining term hereof or (b) to exclude from the Premises, for the term of such proposed sublease, the portion thereof to be sublet (the

“Proposed Sublet Space”) by giving notice to Tenant of such election not later than thirty (30) days after receiving notice of such intent from Tenant. If Landlord shall give such notice within such thirty (30) day period, upon the later to occur of (A) the proposed date of commencement of such proposed sublease or assignment, or (B) the date which is thirty (30) days after Landlord’s notice, the term of this Lease shall terminate or the Premises shall be reduced to exclude the portion of the Premises intended for subletting, in which case Annual Fixed Rent and Tenant’s Percentage shall be correspondingly reduced; however, in such case of Proposed Sublet Space requires the installation of a new demising wall, the effective date shall be the latest of (A) or (B) or the date that Landlord shall install any demising wall necessary to separate the Proposed Sublet Space from the balance of the Premises. If Landlord shall not give such notice, but Tenant shall not enter into such sublease or assignment on the terms and conditions set forth in such notice from Tenant within one hundred twenty (120) days of the initially proposed sublease or assignment commencement date and shall still desire to enter into any sublease or assignment, the first sentence of this paragraph shall again become applicable.

If Landlord shall not elect to terminate the term of this Lease or to exclude Proposed Sublet Space from the Premises, then Landlord shall not unreasonably condition or withhold its consent to any sublease, provided that, in addition to any other grounds for withholding of consent, Landlord may withhold its consent if in Landlord’s good faith judgment: (i) the proposed assignee or subtenant does not have a financial condition reasonably acceptable to Landlord; (ii) the business and operations of the proposed assignee or subtenant are not of comparable quality to the business and operations being conducted by the majority of other tenants in the Park; (iii) the proposed assignee or subtenant is a business competitor of Landlord or is an affiliate of a business competitor of Landlord; (iv) the identity of the proposed assignee or subtenant is, or the intended use of any part of the Premises, would be, in Landlord’s determination, inconsistent with the types of other tenants or uses in the Park or Landlord’s commitments to other tenants in the Building or any covenants, conditions or restrictions binding on Landlord or applicable to the Property; (v) at the time of the proposed assignment or subleasing Landlord is able to meet the space requirements of Tenant’s proposed assignee or subtenant by leasing available space in the Building to such person or entity and the proposed assignee or subtenant is an entity, or is affiliated with any entity, which shall have entered into negotiation with Landlord for space in the Building within the preceding twelve (12) months; or (vi) any such sublease shall result in the Premises being occupied by more than two (2) parties (including Tenant) at any one time.

If this Lease is assigned or if the Premises or any part thereof are sublet (or occupied by any party other than Tenant and its employees) Landlord may collect the rents from such assignee, subtenant or occupant, as the case may be, and apply the net amount collected to the Annual Fixed Rent and Additional Rent herein reserved, but no such collection shall be deemed a waiver of the provisions set forth in the first paragraph of this Subsection 6.2.1, the acceptance by Landlord of such assignee, subtenant or occupant, as the case may be, as a tenant, or a release of Tenant from the future performance by Tenant of its covenants, agreements or obligations contained in this Lease.

Any sublease of all or any portion of the Premises shall provide that it is subject and subordinate to this Lease and to the matters to which this Lease is or shall be subject or subordinate, that other than the payment of Annual Fixed Rent and Additional Rent due pursuant to Sections 4.1, 4.2.1 and 4.2.2 or any obligation relating solely to those portions of the Premises

{B2323618; 13}

which are not part of the subleased premises, the subtenant shall comply with and be bound by all of the obligations of Tenant hereunder, that unless Landlord waives such prohibition, the subtenant may not enter into any sub-sublease, sublease assignment, license or any other agreement granting any right of occupancy of any portion of the subleased premises; and that Landlord shall be an express beneficiary of any such obligations, and that in the event of termination of this Lease or reentry or dispossession of Tenant by Landlord under this Lease, Landlord may, at its option, take over all of the right, title and interest of Tenant, as sublessor under such sublease, and such subtenant shall, at Landlord's option, attorn to Landlord pursuant to the then executory provisions of such sublease, except that neither Landlord nor any mortgagee of the Property, as holder of a mortgage or as Landlord under this Lease if such mortgagee succeeds to that position, shall (a) be liable for any act or omission of Tenant under such sublease, (b) be subject to any credit, counterclaim, offset or defense which theretofore accrued to such subtenant against Tenant, or (c) be bound by any previous modification of such sublease unless consented to by Landlord and such mortgagee or by any previous prepayment of more than one (1) month's rent, (d) be bound by any covenant of Tenant to undertake or complete any construction of the Premises or any portion thereof, (e) be required to account for any security deposit of the subtenant other than any security deposit actually received by Landlord, (f) be bound by any obligation to make any payment to such subtenant or grant any credits unless specifically agreed to by Landlord and such mortgagee, (g) be responsible for any monies owing by Tenant to the credit of subtenant or (h) be required to remove any person occupying the Premises or any part thereof; and such sublease shall provide that the subtenant thereunder shall, at the request of Landlord, execute a suitable instrument in confirmation of such agreement to attorn. To enable Landlord to confirm that any sublease which Tenant shall desire to enter into shall comply with the provisions of this Section 6.2.1 and/or otherwise be acceptable to Landlord, Tenant shall submit the final form of sublease to Landlord not less than ten (10) Business Days prior to its execution. The provisions of this paragraph shall not be deemed a waiver of the provisions set forth in the first paragraph of this Subsection 6.2.1.

Tenant shall not enter into, nor shall it permit any person having an interest in the possession, use, occupancy or utilization of any part of the Premises to enter into, any sublease, license, concession, assignment or other agreement for use, occupancy or utilization of the Premises (i) which provides for rental or other compensation based on the income or profits derived by any person or on any other formula such that any portion of such sublease rental, or other consideration for a license, concession, assignment or other occupancy agreement, would fail to qualify as "rents from real property" within the meaning of Section 856(d) of the Internal Revenue Code or any similar or successor provision thereto, or (ii) under which fifteen percent (15%) or more of the total rent or other compensation received by Tenant is attributable to personal property and any such purported lease, sublease, license, concession or other agreement shall be absolutely void and ineffectual as a conveyance of any right or interest in the possession, use, occupancy or utilization of such part of the Premises.

No subletting or assignment shall in any way impair the continuing primary liability of the Tenant named in Section 1.1, and any immediate or remote successor in interest, and no consent to any subletting or assignment in a particular instance shall be deemed to be a waiver of the obligation to obtain the Landlord's written approval in the case of any other subletting or assignment. The joint and several liability of Tenant named herein and any immediate and remote successor in interest (by assignment or otherwise) for the payment of Annual Fixed Rent and Additional Rent, and the timely performance of all non-monetary obligations on Tenant's

{B2323618; 13}

part to be performed or observed, shall not in any way be discharged, released or impaired by any (a) agreement which modifies any of the rights or obligations of the parties under this Lease, (b) stipulation which extends the time within which an obligation under this Lease is to be performed, (c) waiver of the performance of an obligation required under this Lease, or (d) failure to enforce any of the obligations set forth in this Lease. No assignment, subletting or occupancy shall affect the Permitted Uses. Any subletting, assignment or other transfer of Tenant's interest in this Lease in contravention of this Section 6.2.1 shall be voidable at Landlord's option. Tenant shall not occupy any space in the Building (by assignment, sublease or otherwise) other than the Premises.

If the rent and other sums (including, without limitation, all monetary payments plus the reasonable value of any services performed or any other thing of value given by any assignee or subtenant in consideration of such assignment or sublease) received by Tenant (other than in connection with a Permitted Assignment or Permitted Sublease) shall exceed the Annual Fixed Rent plus Additional Rent called for hereunder over the term of the assignment or sublease (or in the case of a sublease of a portion of the Premises, shall exceed the Annual Fixed Rent plus Additional Rent attributable to the space so sublet), Tenant shall pay fifty percent (50%) of such excess to Landlord, as Additional Rent, payable monthly in the months such excess amounts are received by Tenant, provided that in computing the amount of any such excess the amortized portion of the following "Transfer Expenses" paid by Tenant in connection with such assignment or sublease may first be deducted from the monthly amount of any such excess: (i) the cost of alterations or improvements made by Tenant to the Premises in order to consummate an assignment or to the portion of Premises that is subleased in order to consummate a sublease, (ii) out-of-pocket brokerage commissions or fees, and (iii) out-of-pocket attorneys fees. Any such Transfer Expenses shall be amortized in equal monthly installments over the term of the assignment or sublease and shall be verified by Tenant by written documentation reasonably satisfactory to Landlord within sixty (60) days after the date of delivery of possession to the assignee or sublessee. Nothing in this paragraph shall be deemed to abrogate the provisions of this Subsection 6.2.1 and Landlord's acceptance of any sums pursuant to this paragraph shall not be deemed a granting of consent to any assignment of the Lease or sublease of all or any portion of the Premises.

6.2.2 Nuisance. Tenant shall not injure, deface or otherwise harm the Premises; nor commit any nuisance; nor permit in the Premises any vending machine (except such as is used for the sale of merchandise to employees of Tenant) or inflammable fluids or chemicals (except such as are customarily used in connection with the Permitted Uses, and in all events in compliance with Environmental Laws, as defined in Subsection 6.2.8); nor permit any cooking to such extent as requires special exhaust venting; nor permit the emission of any objectionable noise or odor; nor make, allow or suffer any waste; nor make any use of the Premises which is improper, offensive or contrary to any law or ordinance or which will invalidate or increase the premiums for any of Landlord's insurance (Landlord acknowledging that the Permitted Use, in and of itself, will not invalidate or increase the premiums for any of Landlord's insurance) or which is liable to render necessary any alteration or addition to the Building; nor conduct any auction, fire, "going out of business" or bankruptcy sales.

6.2.3 Floor Load; Heavy Equipment. Tenant shall not place a load upon any floor of the Premises exceeding the lesser of the floor load capacity which such floor was designed to carry or which is allowed by law. Landlord reserves the right to prescribe the weight

{B2323618; 13}

and position of all heavy business machines and equipment, including safes, which shall be placed so as to distribute the weight. Business machines and mechanical equipment which cause vibration or noise shall be placed and maintained by Tenant at Tenant's expense in settings sufficient to absorb and prevent vibration, noise and annoyance. Tenant shall not move any safe, heavy machinery, heavy equipment, freight, construction materials or fixtures into or out of the Premises without Landlord's prior consent which consent may include a requirement to provide insurance naming Landlord, and the holder of any mortgage affecting the Property, as additional insureds, with such coverage and in such amount as Landlord reasonably requires. If any such safe, machinery, heavy equipment, freight, or fixtures requires special handling, Tenant agrees to employ only persons holding a master rigger's license to do said work, and that all work in connection therewith shall comply with applicable laws and regulations. Any such moving shall be at the sole risk and hazard of Tenant and Tenant hereby agrees to exonerate, indemnify and save Landlord harmless against and from any liability, loss, injury, claim or suit resulting directly or indirectly from such moving. Tenant shall schedule such moving at such times as Landlord shall reasonably designate.

6.2.4 Electricity. Tenant shall not connect to the electrical distribution system serving the Premises (i) a total load exceeding the lesser of the capacity of such system or the maximum load permitted from time to time under applicable governmental regulations or (ii) any apparatus or device in the Premises (1) using current in excess of 110 volts, or (2) which would cause Tenant's electrical demand load to exceed 1.0 watts per square foot of Premises Rentable Area for overhead lighting or 2.0 watts per square foot of Premises Rentable Area for convenience outlets. The capacity of the electrical distribution system serving the Premises shall be the lesser of (a) the capacity of the branch of the system serving the Premises exclusively or (b) Tenant's Percentage of the capacity of the system serving the entire Building.

Notwithstanding the foregoing, Tenant shall be permitted, at Tenant's expense and subject to the requirements of this Lease including, without limitation, Subsection 6.2.5 below, to install and use special electrical service in the Premises as follows:

For Test Chamber (qty. 1)

208/230V

1 PH, 60Hz

22 A Max Load

For Humidifiers (qty. 2-3)

440-480V

3 PH, 60Hz

15 A Max Load

6.2.5 Installation, Alterations or Additions. Tenant shall not make any installations, alterations, additions or improvements (collectively and individually referred to in this paragraph as "work") in, to or on the Premises nor permit the making of any holes in the walls or partitions (except for small holes required to hang signs, marker boards, shelving and customary office art), ceilings or floors without on each occasion obtaining the prior consent of Landlord, and then only pursuant to plans and specifications approved by Landlord in advance in each instance. Notwithstanding the foregoing, Tenant need not obtain Landlord's consent to perform Cosmetic Alterations, defined below, within the Premises so long as Tenant shall give

Landlord at least five (5) Business Days' prior notice thereof (which shall reasonably describe the work), the same are not visible from the exterior or common areas of the Building (other than through windows) and any such work shall be scheduled at a time reasonably acceptable to Landlord. "Cosmetic Alterations" shall mean changes to the finishes within the Premises (e.g. changes to the floor and wall coverings and paint) that do not affect the structure or systems of the Premises or Building, do not involve work above ceilings or within walls and do not require a building permit. All work to be performed to the Premises by Tenant shall (i) be performed in a good and workmanlike manner by contractors approved in advance by Landlord and in compliance with the provisions of Exhibit C and all applicable zoning, building, fire, health and other codes, regulations, ordinances and laws, (ii) be made at Tenant's sole cost and expense and at such times and in such a manner as Landlord may from time to time designate, and (iii) be free of liens and encumbrances and become part of the Premises and the property of Landlord without being deemed additional rent for tax purposes, Landlord and Tenant agreeing that Tenant shall be treated as the owner of the work for tax purposes until the expiration or earlier termination of the term hereof, subject to Landlord's rights pursuant to Section 6.1.9 to require Tenant to remove the same at or prior to the expiration or earlier termination of the term hereof and, to the extent Landlord shall make such election, title thereto shall remain vested in Tenant at all times. Tenant shall pay promptly when due the entire cost of any work to the Premises so that the Premises, Building and Property shall at all times be free of liens, and, at Landlord's request, Tenant shall furnish to Landlord a bond or other security acceptable to Landlord assuring that any such work will be completed in accordance with the plans and specifications theretofore approved by Landlord and assuring that the Premises will remain free of any mechanics' lien or other encumbrances that may arise out of such work. Prior to the commencement of any such work, and throughout and until completion thereof, Tenant shall maintain, or cause to be maintained, the insurance required by Exhibit D, all with coverage limits as stated therein. Whenever and as often as any mechanic's or materialmen's lien shall have been filed against the Property based upon any act of Tenant or of anyone claiming through Tenant, Tenant shall within three (3) days of notice from Landlord to Tenant take such action by bonding, deposit or payment as will remove or satisfy the lien. Tenant shall, upon request of Landlord, execute and deliver to Landlord a bill of sale covering any work Tenant shall be required to surrender hereunder.

Tenant shall not, at any time, directly or indirectly, employ or permit the employment of any contractor, mechanic or laborer in the Premises, if such employment will interfere or cause any conflict with other contractors, mechanics or laborers engaged in the construction, maintenance or operation of the Building by Landlord, Tenant or others. In the event of any such interference or conflict, Tenant, upon demand of Landlord, shall cause all contractors, mechanics or laborers causing such interference or conflict to leave the Building immediately.

6.2.6 Intentionally Omitted.

6.2.7 Signs. Except as otherwise provided in this Lease, Tenant shall not paint or place any signs or place any curtains, blinds, shades, awnings, arials, or the like, visible from outside the Premises. Landlord shall install a sign or lettering on or adjacent to the entry doors to the Premises conforming to building standards adopted by Landlord and shall maintain a tenant directory in the lobby of the Building in which will be placed Tenant's name and the location of the Premises in the Building. Tenant's initial entry-door sign and lobby directory listing shall be

{B2323618; 13}

at no cost to Tenant. Any changes thereto shall be made by Landlord at Tenant's sole cost and expense.

So long as (i) this Lease is still in full force and effect and (ii) Tenant occupies more rentable area in the Building than any other tenant or occupant of the Building (the "Sign Conditions"), Tenant shall have the non exclusive right, subject to applicable legal requirements and the terms of this Lease, at Tenant's sole cost and expense, to install and maintain a single building-mounted sign (hereinafter, "Tenant's Sign") on the exterior of the Building above the entrance to the Premises. The size, construction, location and design of Tenant's Sign shall be subject to Landlord's approval, not to be unreasonably withheld, conditioned or delayed, provided that Landlord shall allocate to Tenant a percentage of the signage space on the Building approximately equal to Tenant's Percentage. Without limiting the foregoing, Landlord may refuse to approve any sign that is not consistent with the architecture and general appearance of the Building and Property, will cause undue damage to the Building, or which is otherwise inconsistent with building signage in the Park. The content of Tenant's Sign shall be limited to Tenant's name or trade name or business logo. Tenant, at its expense, shall obtain all permits and approvals required for the installation of Tenant's Sign prior to the installation thereof (but shall not be permitted to seek any zoning or similar relief for Tenant's Sign without Landlord's consent, which may be withheld in Landlord's sole discretion), and shall keep all such permits and approvals in full force and effect throughout the term. Tenant acknowledges that Tenant's Sign shall be at Tenant's risk and Tenant shall maintain Tenant's Sign in good condition. Except as otherwise provided in this Subsection 6.2.5, the installation, repair, maintenance and removal of Tenant's Sign shall be subject to the provisions of Subsection 6.2.5 of this Lease and Landlord's other reasonable requirements. Landlord reserves the right, upon reasonable notice to Tenant, to require Tenant to remove Tenant's Sign, temporarily, at Landlord's sole cost and expense, if necessary in connection with any repairs, renovations, improvements or additions to the Building, provided that Landlord shall minimize, to the extent practical, the duration of any period during which Tenant's Sign shall need to be removed. Prior to the expiration or earlier termination of the term of this Lease, and if at any time any of the Sign Conditions shall no longer prevail, Tenant shall remove Tenant's Sign (and all associated hardware) from the Building and shall restore the affected area to the condition existing prior to the installation of Tenant's Sign, reasonable wear and tear excepted. Notwithstanding any other provision of this Lease, Tenant's right to install and maintain Tenant's Sign shall not be assignable to any subtenant or to any other party except to an assignee of this Lease pursuant to a Permitted Assignment.

6.2.8 Oil and Hazardous Materials. Tenant shall not introduce on or transfer to the Premises or Property, any Hazardous Materials (as hereinafter defined); nor dump, flush or otherwise dispose of any Hazardous Materials into the drainage, sewage or waste disposal systems serving the Premises or Property; nor generate, store, use, release, spill or dispose of any Hazardous Materials in or on the Premises or the Property, or to transfer any Hazardous Materials from the Premises to any other location; and Tenant shall not commit or suffer to be committed in or on the Premises or Property any act which would require any reporting or filing of any notice with any governmental agency pursuant to any statutes, laws, codes, ordinances, rules or regulations, present or future, applicable to the Property or to Hazardous Materials. This paragraph shall not prohibit Tenant from using minimal quantities of products or substances which may constitute or contain Hazardous Materials, but which are customarily present in or about premises devoted to the Permitted Use, provided (i) that such use, including storage and

{B2323618; 13}

disposal thereof, by Tenant is in strict compliance with all Environmental Laws and the manufacturer's instructions and recommendations for the safe use, storage and disposal of such products, and (ii) Tenant follows the highest recognized standard of care with respect to the use, storage and disposal of such products.

Tenant agrees that if it shall generate, store, release, spill, dispose of or transfer to the Premises or Property any Hazardous Materials, it shall forthwith remove the same, at its sole cost and expense, in the manner provided by all applicable Environmental Laws (as hereinafter defined), regardless of when such Hazardous Materials shall be discovered. Furthermore, Tenant shall pay any fines, penalties or other assessments imposed by any governmental agency with respect to any such Hazardous Materials and shall forthwith repair and restore any portion of the Premises or Property which it shall disturb in so removing any such Hazardous Materials to the condition which existed prior to Tenant's disturbance thereof.

Tenant agrees to deliver promptly to Landlord any notices, orders or similar documents received from any governmental agency or official concerning any violation of any Environmental Laws or with respect to any Hazardous Materials affecting the Premises or Property. In addition, Tenant shall, within ten (10) days of receipt, accurately complete any questionnaires from Landlord or other informational requests relating to Tenant's use of the Premises and, in particular, to Tenant's use, generation, storage and/or disposal of Hazardous Materials at, to, or from the Premises.

Tenant shall indemnify, defend (by counsel satisfactory to Landlord), protect, and hold Landlord free and harmless from and against any and all claims, or threatened claims, including without limitation, claims for death of or injury to any person or damage to any property, actions, administrative proceedings, whether formal or informal, judgments, damages, punitive damages, liabilities, penalties, fines, costs, taxes, assessments, forfeitures, losses, expenses, attorneys' fees and expenses, consultant fees, and expert fees that arise from or are caused in whole or in part, directly or indirectly, by (i) Tenant's use, analysis, storage, transportation, disposal, release, threatened release, discharge or generation of Hazardous Materials to, in, on, under, about or from the Premises, or (ii) Tenant's failure to comply with any Environmental Laws. Tenant's obligations hereunder shall include, without limitation, and whether foreseeable or unforeseeable, all costs (including, without limitation, capital, operating and maintenance costs) incurred in connection with any investigation or monitoring of site conditions, repair, cleanup, containment, remedial, removal or restoration work, or detoxification or decontamination of the Premises, and the preparation and implementation of any closure, remedial action or other required plans in connection therewith. For purposes of this Section 6.2.8, any acts or omissions of Tenant, or its subtenants or assignees or its or their employees, agents, or contractors (whether or not they are negligent, intentional, willful or unlawful) shall be attributable to Tenant.

The term "Hazardous Materials" shall mean and include any oils, petroleum products, asbestos, radioactive, biological, medical or infectious wastes or materials, and any other toxic or hazardous wastes, materials and substances which are defined, determined or identified as such in any Environmental Laws, or in any judicial or administrative interpretation of Environmental Laws.

The term "Environmental Laws" shall mean any and all federal, state and municipal statutes, laws, regulations, ordinances, rules, judgments, orders, decrees, codes, plans,

{B2323618; 13}

injunctions, permits, concessions, grants, franchises, licenses, agreements or other governmental restrictions relating to the environment or to emissions, discharges or releases of pollutants, contaminants, petroleum or petroleum products, medical, biological, infectious, toxic or hazardous substances or wastes into the environment including, without limitation, ambient air, surface water, ground water or land, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of pollutants, contaminants, petroleum or petroleum products, medical, biological, infectious, toxic or hazardous substances or wastes or the cleanup or other remediation thereof.

ARTICLE 7

Casualty or Taking

7.1 Termination. In the event that the Premises, the Building or the Property, or any material part thereof shall be destroyed or damaged by fire or casualty, shall be taken by any public authority or for any public use or shall be condemned by the action of any public authority, then the term of this Lease may be terminated at the election of Landlord. Such election, which may be made notwithstanding the fact that Landlord's entire interest may have been divested, shall be made by the giving of notice by Landlord to Tenant not later than one hundred twenty (120) days after the date of the taking or casualty.

In the event that any material portion of the Premises is made unusable for the conduct of Tenant's business due to a taking or condemnation by any public authority (other than temporarily for a period of less than one hundred eighty (180) days), then the term of this Lease may be terminated at the election of Tenant by the giving of notice by Tenant to Landlord within sixty (60) days after the date of the taking or condemnation. In the event any material part of the Premises shall be destroyed or damaged or shall be made inaccessible or untenable by fire or other casualty (and Landlord has not elected to terminate the term of this Lease pursuant to the preceding paragraph), then within one hundred twenty (120) days after the occurrence of such casualty damage, Landlord shall give Tenant a notice (the "Restoration Notice") advising Tenant whether or not Landlord intends to restore the Premises and access thereto to a condition substantially the same as existed immediately prior to such damage (subject to any modification required by then current laws, rules, regulations and ordinances and excluding any improvements to the Premises made by or on behalf of Tenant) and if Landlord intends to so restore, of the time required to substantially complete such work, as reasonably estimated by an architect or general contractor selected by Landlord. If the Restoration Notice indicates either that (a) Landlord shall not restore the Premises as provided above, or (b) the estimated time required for Landlord to substantially complete such restoration work shall exceed one hundred and eighty (180) days from the occurrence of such casualty damage or the number of days which as of the date of the casualty constitutes more than half of the then remainder of the term of this Lease, whichever period is shorter, Tenant may elect to terminate the term of this Lease by giving notice to Landlord not later than thirty (30) days after the date on which Landlord gives Tenant the Restoration Notice. Tenant may also elect to terminate the term of this Lease by notice to Landlord if Landlord shall not have caused the restoration work to have been substantially completed on or before the date thirty (30) days after the date identified therefor in the Restoration Notice, subject to extension for force majeure events not exceeding ninety (90) days, whereupon the term of this Lease shall terminate thirty (30) days following the date of such notice, unless Landlord substantially completes such restoration work with such thirty-day

period, in which case such notice of termination shall be a nullity. Notwithstanding the foregoing, Tenant shall have no right to terminate the term of this Lease due to a fire or other casualty if the cause thereof was due to the gross negligence or intentional misconduct of Tenant or any subtenant of Tenant or any agent or employee of Tenant or its subtenant(s).

7.2 Restoration. If neither party so elects to terminate, this Lease shall continue in force and (so long as the damage is not caused by the negligence or intentional misconduct of Tenant or its employees, agents, contractors or invitees) a just proportion of the Annual Fixed Rent and Additional Rent for Taxes and Operating Costs, according to the nature and extent of the damages sustained by the Premises, shall be suspended or abated commencing on the date of the casualty and continuing until the Premises (excluding any improvements to the Premises made at Tenant's expense), or what may remain thereof, shall be put by Landlord in proper condition for use, which Landlord covenants to do with reasonable diligence to the extent permitted by the net proceeds of insurance recovered or damages awarded for such destruction, taking, or condemnation and subject to zoning and building laws or ordinances then in existence. "Net proceeds of insurance recovered or damages awarded" refers to the gross amount of such insurance or damages actually made available to Landlord (and not retained by any Superior Lessor or Superior Mortgagee) less the reasonable expenses of Landlord incurred in connection with the collection of the same, including without limitation, fees and expenses for legal and appraisal services.

7.3 Award. Irrespective of the form in which recovery may be had by law, all rights to seek reimbursement for damages or compensation arising from fire or other casualty or any taking by eminent domain or condemnation shall belong to Landlord in all cases; provided, however, that Tenant shall be entitled to retain any insurance proceeds which are recovered from Tenant's insurer and are related to Tenant's personal property and/or business interruption coverages; provided further that the foregoing shall not excuse Tenant from any obligation it may have under this Lease for the payment of Annual Fixed Rent or any Additional Rent. Tenant hereby grants to Landlord all of Tenant's rights to such claims for damages and compensation and covenants to deliver such further assignments thereof as Landlord may from time to time request. Nothing contained herein shall be construed to prevent Tenant from prosecuting in any condemnation proceedings a claim for relocation expenses, provided that such action shall not affect the amount of compensation otherwise recoverable by Landlord from the taking authority.

ARTICLE 8

Defaults

8.1 Default of Tenant. (a) (I) If Tenant shall default in its obligations to pay the Annual Fixed Rent or Additional Rent or any other charges or amounts under this Lease when due or shall default in complying with its obligations under Sections 4.4 or 6.1.11 of this Lease and if any such default shall continue for seven (7) Business Days after notice from Landlord designating such default, or (II) if as promptly as possible but in any event within thirty (30) days after notice from Landlord to Tenant specifying any default or defaults other than those set forth in clause (I) Tenant has not cured the default or defaults so specified, or if such default is of such a nature that it cannot be cured within thirty (30) days using best efforts, if Tenant does not commence the curing of such default within such thirty-day period and thereafter diligently and

continuously prosecute such cure to completion within such additional time as may be necessary, but in no event to exceed forty-five (45) days from the date of Landlord's notice to Tenant specifying the default; or (b) if any assignment shall be made by Tenant for the benefit of creditors; or (c) if Tenant's leasehold interest shall be taken on execution; or (d) if a lien or other involuntary encumbrance shall be filed against Tenant's leasehold interest or Tenant's other property which includes said leasehold interest, and shall not be discharged within ten (10) days after Tenant has notice thereof; or (e) if a petition shall be filed by Tenant for liquidation, or for reorganization or an arrangement under any provision of any bankruptcy law or code as then in force and effect; or (f) if an involuntary petition under any of the provisions of any bankruptcy law or code shall be filed against Tenant and such involuntary petition shall not be dismissed within thirty (30) days thereafter; or (g) if a custodian or similar agent shall be authorized or appointed to take charge of all or substantially all of the assets of Tenant; or (h) if Tenant dissolves or shall be dissolved or shall liquidate or shall adopt any plan or commence any proceeding, the result of which is intended to include dissolution or liquidation; or (i) if any order shall be entered in any proceeding by or against Tenant decreeing or permitting the dissolution of Tenant or the winding up of its affairs; or (j) if Tenant shall fail to pay any installment of Annual Fixed Rent or Additional Rent when due, Tenant shall cure such default within the grace period provided in clause (a) (I) above (or with Landlord's approval after the expiration of such grace period) and Tenant shall, within the next year following the date such initial defaulted payment was first due, fail more than once to pay any installment of Annual Fixed Rent or Additional Rent when due, then, and in any of such cases indicated in clauses (a) through (j) hereof (collectively and individually, a "Default of Tenant"), Landlord may, in addition to and not in derogation of any remedies for any preceding breach of covenant, immediately or at any time thereafter (x) give notice to Tenant terminating this Lease and/or the term hereof, which notice shall specify the date of such termination, whereupon on the date so specified, the term of this Lease and all of Tenant's rights and privileges under this Lease shall expire and terminate or (y) without terminating this Lease terminate Tenant's right of possession and/or occupancy and reenter and take possession of the Premises or any part thereof, without notice and expel Tenant and any party claiming under Tenant and remove any of their effects, without being liable on account thereof, whether in trespass or breach or covenant or otherwise, (and no such reentry or taking possession shall be construed as an election by Landlord to terminate this Lease unless Landlord shall affirm such election by notice expressly to such effect), but in either case Tenant shall remain liable as hereinafter provided.

8.2 Remedies. In the event of any termination of this Lease or the term hereof pursuant to Section 8.1, Tenant shall pay the Annual Fixed Rent, Additional Rent and other charges payable hereunder up to the time of such termination. Thereafter, whether or not the Premises shall have been re let, Tenant shall be liable to Landlord for, and shall pay to Landlord the Annual Fixed Rent, Additional Rent and other charges which would be payable hereunder for the remainder of the term of this Lease had such termination not occurred, less the net proceeds, if any, of any reletting of the Premises, after deducting all expenses in connection with such reletting, including, without limitation, all repossession costs, brokerage commissions, attorneys' fees and expenses, advertising costs, administration expenses, alteration costs, the value of any tenant inducements (including but without limitation free rent, moving costs, and contributions toward leasehold improvements) and any other expenses incurred in preparation for such reletting. Tenant shall pay such damages to Landlord monthly on the days on which the Annual Fixed Rent, Additional Rent or other charges would have been payable hereunder if the term of this Lease had not been so terminated.

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In the event of any reentry or retaking of possession of the Premises and/or termination of Tenant's right of possession and/or occupancy of the Premises, as applicable, without termination of this Lease, pursuant to Section 8.1, Tenant shall pay the Annual Fixed Rent, Additional Rent and other charges payable hereunder up to the time of such reentry or retaking of possession and/or termination. Thereafter, whether or not the Premises shall have been re-let, Tenant shall be liable to Landlord for, and shall pay to Landlord the Annual Fixed Rent, Additional Rent and other charges which would be payable hereunder for the remainder of the term of this Lease notwithstanding any such reentry, retaking of possession or termination, less the net proceeds, if any, of any reletting of the Premises, after deducting all expenses in connection with such reletting, including, without limitation, all repossession costs, brokerage commissions, attorneys' fees and expenses, advertising costs, administration expenses, alteration costs, the value of any tenant inducements (including but without limitation free rent, moving costs, and contributions toward leasehold improvements) and any other expenses incurred in preparation for such reletting. Tenant shall pay such damages to Landlord monthly on the days on which the Annual Fixed Rent, Additional Rent or other charges are payable hereunder.

At any time after any such termination, reentry or retaking of possession, in lieu of recovering damages pursuant to the provisions of the immediately preceding paragraphs with respect to any period after the date of demand therefor, at Landlord's election, Tenant shall pay to Landlord immediately and in full the greater of (i) the amount, if any, by which (A) the Annual Fixed Rent, Additional Rent and other charges which would be payable hereunder from the date of such demand to the end of what would be the then unexpired term of this Lease had such termination not occurred (or in the case of reentry or retaking of possession of the Premises by Landlord or a termination of Tenant's right of possession and/or occupancy of the Premises, to the end of the term of this Lease), shall exceed (B) the then fair rental value of the Premises for the same period, reduced to amortize over such period all costs or expenses which Landlord would incur to obtain such fair market rent, or (ii) an amount equal to the lesser of (x) the Annual Fixed Rent, Additional Rent and other charges that would have been payable for the remainder of the term of this Lease had such termination not occurred (or in the case of reentry or retaking of possession of the Premises by Landlord or a termination of Tenant's right of possession and/or occupancy of the Premises, to the end of the term of this Lease) or (y) the aggregate of the Annual Fixed Rent, Additional Rent and other charges accrued in the twelve (12) months ended next prior to such termination, reentry or retaking of possession of the Premises by Landlord or termination of Tenant's right of possession and/or occupancy (without reduction for any free rent or other concession or abatement) except that in the event the term of this Lease or Tenant's right of possession and/or occupancy of the Premises is so terminated or Landlord shall reenter and/or retake possession of the Premises prior to the expiration of the first full year of the term of this Lease, the damages which Landlord may elect to recover pursuant to clause (ii) (y) of this paragraph shall be calculated as if any such termination, reentry or retaking of possession had occurred on the first anniversary of the Commencement Date and there had been no so-called free rent or other rental concession or any rental abatement.

Nothing contained in this Lease shall, however, limit or prejudice the right of Landlord to prove for and obtain in proceedings for bankruptcy or insolvency by reason of the termination of this Lease, an amount equal to the maximum allowed by any statute or rule of law in effect at the time when, and governing the proceedings in which, the damages are to be proved, whether or not the amount be greater than, equal to, or less than the amount of the loss or damages referred to above.

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In case of any Default of Tenant, re-entry, expiration and repossession by summary proceedings or otherwise, Landlord may (i) relet the Premises or any part or parts thereof for a term or terms which may at Landlord's option be equal to or less than or exceed the period the balance of the term of this Lease (or the balance of the term of this Lease if it shall not have been terminated) and may grant concessions or free rent to the extent that Landlord considers advisable and necessary to relet the same and (ii) may make such alterations, repairs and decorations in the Premises as Landlord in its sole judgment considers advisable and necessary for the purpose of reletting the Premises; and the making of such alterations, repairs and decorations shall not operate or be construed to release Tenant from liability hereunder as aforesaid. Landlord shall in no event be required to relet the Premises or otherwise mitigate damages or be liable in any way whatsoever for failure to relet the Premises, or, in the event that the Premises are relet, for failure to collect the rent under such reletting.

To the fullest extent permitted by law, Tenant hereby expressly waives any and all rights of redemption granted under any present or future laws in the event of Tenant being evicted or dispossessed, or in the event of Landlord obtaining possession of the Premises, by reason of the violation by Tenant of any of the covenants and conditions of this Lease.

8.3 Remedies Cumulative. Except as expressly provided otherwise in Section 8.2, any and all rights and remedies which Landlord may have under this Lease, and at law and equity (including without limitation actions at law for direct, indirect, special and consequential (foreseeable and unforeseeable) damages), for Tenant's failure to comply with its obligations under this Lease shall be cumulative and shall not be deemed inconsistent with each other, and any two or more of all such rights and remedies may be exercised at the same time insofar as permitted by law.

Notwithstanding the foregoing, in no event shall Tenant ever be liable to Landlord, and Landlord hereby waives any claim against Tenant, for any punitive damages or for any loss of business or any other indirect, special or consequential damages (whether foreseeable or unforeseeable) suffered by Landlord from whatever cause, except for claims of third parties for which Tenant is to indemnify Landlord pursuant to Subsection 6.1.5, arising from violation of any Environmental Laws as provided in Subsection 6.2.8 or arising under Section 8.5.

8.4 Landlord's Right to Cure Defaults. At any time with or without notice, Landlord shall have the right, but shall not be required, to pay such sums or do any act which requires the expenditure of monies which may be necessary or appropriate by reason of the failure or neglect of Tenant to comply with any of its obligations under this Lease (provided Landlord shall not exercise such right until there is a Default of Tenant unless earlier action by Landlord is necessary to prevent injury or damage to persons or property, as determined by Landlord in good faith), and in the event of the exercise of such right by Landlord, Tenant agrees to pay to Landlord forthwith upon demand, as Additional Rent, all such sums including reasonable attorneys fees, together with interest thereon at a rate (the "Default Rate") equal to the lesser of six hundred basis points above the Prime Rate or the maximum rate allowed by law. "Prime Rate" shall mean the annual floating rate of interest, determined daily and expressed as a percentage from time to time announced by Bank of America as its "prime" or "base" rate, so-called, or if at any time Bank of America ceases to announce such a rate, as announced by the largest national or state-chartered banking institution then having an office in the City of Boston and announcing such a rate. If at any time neither Bank of America nor the largest national or

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state-chartered banking institution having an office in the City of Boston is announcing such a floating rate, "Prime Rate" shall mean a rate of interest, determined daily, which is two hundred basis points above the yield of 90-day U.S. Treasury Bills.

8.5 Holding Over. Any failure by Tenant to comply timely with its obligations under Subsection 6.1.9, as to all or any portion of the Premises, shall constitute a holding over of the entire Premises and be treated as a daily tenancy at sufferance at a rental rate equal to one and one-half (1.5) times the sum of Annual Fixed Rent plus Additional Rent on account of Operating Costs and Taxes in effect immediately prior to the expiration or earlier termination of the term (prorated on a daily basis). Tenant shall also pay to Landlord all damages, direct and/or consequential (foreseeable and unforeseeable), sustained by reason of any such holding over. Otherwise, all of the covenants, agreements and obligations of Tenant applicable during the term of this Lease shall apply and be performed by Tenant during such period of holding over as if such period were part of the term of this Lease.

8.6 Effect of Waivers of Default. Any consent or permission by Landlord to any act or omission by Tenant shall not be deemed to be consent or permission by Landlord to any other similar or dissimilar act or omission and any such consent or permission in one instance shall not be deemed to be consent or permission in any other instance.

8.7 No Waiver, etc. The failure of Landlord or Tenant to seek redress for violation of, or to insist upon the strict performance of, any covenant or condition of this Lease shall not be deemed a waiver of such violation nor prevent a subsequent act, which would have originally constituted a violation, from having all the force and effect of an original violation. The receipt by Landlord of rent with knowledge of the breach of any covenant of this Lease shall not be deemed to have been a waiver of such breach by Landlord, or by Tenant, unless such waiver be in writing signed by the party to be charged. No consent or waiver, express or implied, by Landlord or Tenant to or of any breach of any agreement or duty shall be construed as a waiver or consent to or of any other breach of the same or any other agreement or duty.

8.8 No Accord and Satisfaction. No acceptance by Landlord of a lesser sum than the Annual Fixed Rent, Additional Rent or any other charge then due shall be deemed to be other than on account of the earliest installment of such rent or charge due, nor shall any endorsement or statement on any check or any letter accompanying any check or payment as rent or other charge be deemed an accord and satisfaction, and Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such installment or pursue any other remedy in this Lease provided.

ARTICLE 9

Rights of Holders

9.1 Rights of Mortgagees or Ground Lessor. This Lease, and all rights of Tenant hereunder, are and shall be subject and subordinate to any ground or master lease, and all renewals, extensions, modifications and replacements thereof, and to all mortgages, which may now or hereafter affect the Building or the Property and/or any such lease, whether or not such mortgages shall also cover other lands and/or buildings and/or leases, to each and every advance made or hereafter to be made under such mortgages, and to all renewals, modifications,

replacements and extensions of such leases and such mortgages and all consolidations of such mortgages. This Section shall be self-operative and no further instrument of subordination shall be required. In confirmation of such subordination, Tenant shall promptly execute, acknowledge and deliver any instrument that Landlord, the lessor under any such lease or the holder of any such mortgage or any of their respective successors in interest may reasonably request to evidence such subordination. Any lease to which this Lease is subject and subordinate is herein called "Superior Lease" and the lessor of a Superior Lease or its successor in interest, at the time referred to, is herein called "Superior Lessor"; and any mortgage to which this Lease is subject and subordinate, is herein called "Superior Mortgage" and the holder of a Superior Mortgage is herein called "Superior Mortgagee".

If any Superior Lessor or Superior Mortgagee or the nominee or designee of any Superior Lessor or Superior Mortgagee shall succeed to the rights of Landlord under this Lease, whether through possession or foreclosure action or delivery of a new lease or deed, or otherwise, then at the request of such party so succeeding to Landlord's rights (herein called "Successor Landlord") and upon such Successor Landlord's written agreement to accept Tenant's attornment, Tenant shall attorn to and recognize such Successor Landlord as Tenant's landlord under this Lease and shall promptly execute and deliver any instrument that such Successor Landlord may reasonably request to evidence such attornment. Upon such attornment, this Lease shall continue in full force and effect as a direct lease between the Successor Landlord and Tenant upon all of the terms, conditions and covenants as are set forth in this Lease, except that the Successor Landlord (unless formerly the landlord under this Lease) shall not be (a) liable in any way to Tenant for any act or omission, neglect or default on the part of Landlord under this Lease (but nothing herein shall relieve a Successor Landlord from the obligation to remedy defaults in the performance of Landlord's maintenance, repair or service obligations which continue after such Successor Landlord shall have succeeded to the rights of Landlord under this Lease), (b) responsible for any monies owing by or on deposit with Landlord to the credit of Tenant, (c) subject to any counterclaim or setoff which theretofore accrued to Tenant against Landlord, (d) bound by any modification of this Lease subsequent to such Superior Lease or Superior Mortgage, or by any previous prepayment of Annual Fixed Rent or Additional Rent for more than one (1) month, which was not approved in writing by the Successor Landlord, (e) liable to the Tenant beyond the Successor Landlord's interest in the Property, (f) responsible for the performance of any work to be done by Landlord under this Lease to render the Premises ready for occupancy by the Tenant, or (g) required to remove any person occupying the Premises or any part thereof, except if such person claims by, through or under the Successor Landlord. Tenant agrees at any time and from time to time to execute a suitable instrument in confirmation of Tenant's agreement to attorn, as aforesaid.

9.2 Modifications. If any Superior Lessor or Superior Mortgagee shall require any modification(s) of this Lease, Tenant shall, at Landlord's request, promptly execute and deliver to Landlord such instruments effecting such modification(s) as Landlord shall require, provided that such modification(s) do not adversely affect to more than a de minimus extent any of Tenant's rights under this Lease. In addition, and notwithstanding Section 9.1 to the contrary, any Superior Lessor or Superior Mortgagee may, at its option, subordinate the Superior Lease or Superior Mortgage of which it is the lessor or holder to this Lease by giving Tenant ten (10) days prior written notice of such election, whereupon this Lease shall, irrespective of dates of execution, delivery and recording, be superior to such Superior Lease or Superior Mortgage and no other documentation shall be necessary to effect such change.

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9.3 Subordination, Non-Disturbance and Attornment. Landlord represents that the Property is not subject to any Superior Lease or Superior Mortgage as of the Date of this Lease. Landlord shall request a so-called non-disturbance agreement (“SNDA”) from any future Superior Mortgagee in the form customarily used by such Superior Mortgagee, but Landlord shall have no obligation to incur any expense or liability in connection with such request (or to become involved in any request by Tenant for changes to the form of SNDA) and, if such Superior Mortgagee shall fail or refuse to provide or to execute such SNDA (or to consider or agree to any changes to the form of SNDA requested by Tenant), such failure or refusal shall not constitute a default or breach of this Lease by Landlord. If any future Superior Mortgagee shall agree to provide an SNDA, then at Landlord’s request, Tenant shall first execute and deliver such SNDA to Landlord.

ARTICLE 10

Miscellaneous Provisions

10.1 Notices. Except as may be expressly provided herein otherwise, all notices, requests, demands, consents, approval or other communications to or upon the respective parties hereto shall be in writing, shall be delivered by hand or mailed by certified or registered mail, return receipt requested, or by a nationally recognized courier service that provides a receipt for delivery such as Federal Express, United Parcel Service or U.S. Postal Service Express Mail and shall be addressed as follows: If intended for Landlord, to the Original Address of Landlord set forth in Section 1.1 of this Lease with a copy to The RMR Group LLC, Two Newton Place, 255 Washington Street, Suite 300, Newton, MA 02458, Attn: Jennifer B. Clark (or to such other address or addresses as may from time to time hereafter be designated by Landlord by notice to Tenant); and if intended for Tenant, addressed to Tenant at the Original Address of Tenant set forth in Section 1.1 of this Lease (or to such other address or addresses as may from time to time hereafter be designated by Tenant by notice to Landlord). Notices shall be effective on the date delivered to (or the first date such delivery is attempted and refused by) the party to which such notice is required or permitted to be given or made under this Lease. Notices from Landlord may be given by Landlord’s Agent, if any, or Landlord’s attorney; and any bills or invoices for Annual Fixed Rent or Additional Rent may be given by mail(which need not be registered or certified) and, if so given, shall be deemed given on the third Business Day following the date of posting.

10.2 Quiet Enjoyment; Landlord’s Right to Make Alterations, Etc. Landlord agrees that upon Tenant’s paying the rent and performing and observing the agreements, conditions and other provisions on its part to be performed and observed, Tenant shall and may peaceably and quietly have, hold and enjoy the Premises during the term hereof without any manner of hindrance or molestation from Landlord or anyone claiming under Landlord, subject, however, to the terms of this Lease; provided, however, Landlord reserves the right at any time and from time to time, without the same constituting breach of Landlord’s covenant of quiet enjoyment or an actual or constructive eviction, and without Landlord incurring any liability to Tenant or otherwise affecting Tenant’s obligations under this Lease, to make such changes, alterations, improvements, repairs or replacements in or to the interior and exterior or common areas of the Building (including the Premises) and the fixtures and equipment thereof, and in or to the Property, or properties adjacent thereto, as Landlord may deem necessary or desirable, and to change (provided that there be no unreasonable obstruction of the right of access to the Premises

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by Tenant and that Landlord use commercially reasonable efforts to minimize, to the extent practical, any interference with the conduct of business at the Premises) the arrangement and/or location of entrances or passageways, doors and doorways, corridors or other common areas of the Building and Property.

Without incurring any liability to Tenant, Landlord may permit access to the Premises and open the same, whether or not Tenant shall be present, upon any demand of any receiver, trustee, assignee for the benefit of creditors, sheriff, marshal or court officer Landlord reasonably believes is entitled to such access for the purpose of taking possession of, or removing, Tenant's property or for any other lawful purpose (but this provision and any action by Landlord hereunder shall not be deemed a recognition by Landlord that the person or official making such demand has any right or interest in or to this Lease, or in or to the Premises), or upon demand of any representative of the fire, police, building, sanitation or other department of the city, state or federal governments.

10.3 Lease not to be Recorded; Confidentiality of Lease Terms. Tenant agrees that it will not record this Lease. Both parties shall, upon the request of either (and at the expense of the requesting party), execute and deliver a notice or short form of this Lease in such form, if any, as may be acceptable for recording with the land records of the governmental entity responsible for keeping such records for Clarksburg. In no event shall such document set forth the rent or other charges payable by Tenant pursuant to this Lease; and any such document shall expressly state that it is executed pursuant to the provisions contained in this Lease and is not intended to vary the terms and conditions of this Lease. If Tenant so elects to record a notice or short form of this Lease as aforesaid, Tenant shall reimburse Landlord for its reasonable out-of-pocket third-party costs plus an administrative fee of \$500.00.

Tenant acknowledges that the terms under which the Landlord has leased the Premises to Tenant (including, without limitation, the rental rate(s), term and other financial and business terms), constitute confidential information of Landlord ("Confidential Information"). Tenant shall use reasonable efforts to keep the Confidential Information confidential and not to disclose the same to third parties; provided, however, that such Confidential Information may be disclosed by Tenant to those of its officers, employees, attorneys, accountants, lenders and financial advisors (collectively, "Representatives") who need to know such information in connection with Tenant's use and occupancy of the Premises and for financial reporting and credit related activities, or as may be required by law. Tenant shall not make or permit to be made any press release or other similar public statement regarding this Lease without the prior approval of Landlord, which approval shall not be unreasonably withheld. Tenant furthermore agrees to inform its Representatives of the confidential nature of such Confidential Information and to use all reasonable efforts to cause each Representative to treat such Confidential Information confidentially and in accordance with the terms of this paragraph. Notwithstanding the foregoing, so long as Tenant has securities registered under the Exchange Act, Tenant may, if required by the rules and regulations of the SEC or the exchange on which Tenant's securities are listed or by applicable law, file this Lease as an exhibit to, and disclose information regarding the terms of this Lease in, filings with the SEC or such exchange.

10.4 Assignment of Rents and Transfer of Title; Limitation of Landlord's Liability. Tenant agrees that the assignment by Landlord of Landlord's interest in this Lease, or the rents payable hereunder, whether absolute or conditional in nature or otherwise, which assignment is

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made to the holder of a mortgage on property which includes the Premises, shall never be treated as an assumption by such holder of any of the obligations of Landlord hereunder unless such holder shall, by notice sent to Tenant, specifically otherwise elect and that, except as aforesaid, such holder shall be treated as having assumed Landlord's obligations hereunder (subject to the limitations set forth in Section 9.1) only upon foreclosure of such holder's mortgage and the taking of possession of the Premises.

The term "Landlord", so far as covenants or obligations to be performed by Landlord are concerned, shall be limited to mean and include only the owner or owners at the time in question of Landlord's interest in the Property, and in the event of any transfer or transfers of such title to said property, Landlord (and in case of any subsequent transfers or conveyances, the then grantor) shall be concurrently freed and relieved from and after the date of such transfer or conveyance, without any further instrument or agreement, of all liability with respect to the performance of any covenants or obligations on the part of Landlord contained in this Lease thereafter to be performed, it being intended hereby that the covenants and obligations contained in this Lease on the part of Landlord, shall, subject as aforesaid, be binding on Landlord, its successors and assigns, only during and in respect of their respective period of ownership of such interest in the Property.

Notwithstanding the foregoing, in no event shall the acquisition of Landlord's interest in the Property by a purchaser which, simultaneously therewith, leases Landlord's entire interest in the Property back to Landlord or the seller thereof be treated as an assumption by operation of law or otherwise, of Landlord's obligations hereunder. Tenant shall look solely to such seller-lessee, and its successors from time to time in title, for performance of Landlord's obligations hereunder. The seller-lessee, and its successors in title, shall be the Landlord hereunder unless and until such purchaser expressly assumes in writing the Landlord's obligations hereunder.

Tenant shall not assert nor seek to enforce any claim for breach of this Lease against any of Landlord's assets other than Landlord's interest in the Property, and any interest in insurance, financing or sale proceeds from the Property, and Tenant agrees to look solely to such interest for the satisfaction of any liability or claim against Landlord under this Lease. Tenant furthermore agrees that no trustee, officer, director, general or limited partner, member, shareholder, beneficiary, employee or agent of Landlord (including any person or entity from time to time engaged to supervise and/or manage the operation of Landlord) shall be held to any liability, jointly or severally, for any debt, claim, demand, judgment, decree, liability or obligation of any kind (in tort, contract or otherwise) of, against or with respect to Landlord or arising out of any action taken or omitted for or on behalf of Landlord.

10.5 Landlord's Default. Landlord shall not be deemed to be in breach of, or in default in the performance of, any of its obligations under this Lease unless it shall fail to perform such obligation(s) and such failure shall continue for a period of thirty (30) days, or such additional time as is reasonably required to correct any such breach or default, after written notice has been given by Tenant to Landlord specifying the nature of Landlord's alleged breach or default. Tenant shall have no right to terminate this Lease for any breach or default by Landlord hereunder and no right, for any such breach or default, to offset or counterclaim against any rent due hereunder. In no event shall Landlord ever be liable to Tenant, and Tenant hereby waives any claim against Landlord, for any punitive damages or for any loss of business or any other

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indirect, special or consequential damages suffered by Tenant from whatever cause. Tenant further agrees that if Landlord shall have failed to cure any such breach or default within thirty (30) days of such notice to Landlord (or if such breach or default cannot be cured within said time, then within such additional time as may be necessary if within said thirty days Landlord has commenced and is diligently pursuing the remedies necessary to cure such breach or default), then the holder(s) of any mortgage(s) or the lessor under any ground lease entitled to notice pursuant to Section 10.6 shall have an additional thirty (30) days within which to cure such breach or default if such breach or default cannot be cured within that time, then such additional time as may be necessary, if within such thirty (30) days any such holder or lessor has commenced and is diligently pursuing the remedies necessary to cure such breach or default (including but not limited to commencement of foreclosure proceedings, if necessary to effect such cure).

Where provision is made in this Lease for Landlord's consent and Tenant shall request such consent and Landlord shall fail or refuse to give or shall delay in giving such consent, Tenant shall not be entitled to any damages and Tenant hereby waives any claim based on such failure, refusal or delay; provided however in any situation where Landlord is expressly required not to withhold its consent unreasonably Tenant shall (at its sole remedy) be entitled to bring an action for specific performance or injunction.

10.6 Notice to Mortgagee and Ground Lessor. After Tenant receives notice from Landlord that any party holds a mortgage which includes the Premises as part of the mortgaged premises, or that any party is the ground lessor under a lease with Landlord, as ground lessee, which includes the Premises as part of the demised premises, and until Tenant receives notice from Landlord or any such party that such mortgage or ground lease no longer encumbers the Premises, no notice from Tenant to Landlord shall be effective unless and until a copy of the same is given to such holder or ground lessor identified in the notice from Landlord, and the curing of any of Landlord's defaults by such holder or ground lessor shall be treated as performance by Landlord.

10.7 Brokerage. Tenant and Landlord warrant and represent that they have dealt with no broker in connection with the consummation of this Lease, other than Jones Lang LaSalle Brokerage, Inc. ("JLL"), and in the event of any brokerage claims or liens, other than by JLL, against Landlord, Tenant or the Property predicated upon or arising out of prior dealings with Tenant or Landlord, the party with whom the broker claims to have dealt agrees to defend the same and indemnify and hold the other party harmless against any such claim, and to discharge any such lien.

10.8 Waiver of Jury Trial. LANDLORD AND TENANT HEREBY WAIVE TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM BROUGHT BY EITHER OF THEM AGAINST THE OTHER IN CONNECTION WITH THIS LEASE.

10.9 Applicable Law and Construction. This Lease shall be governed by and construed in accordance with the laws of the State of Maryland and if any provisions of this Lease shall to any extent be invalid, the remainder of this Lease shall not be affected thereby. Tenant expressly acknowledges and agrees that Landlord has not made and is not making, and Tenant, in executing and delivering this Lease, is not relying upon, any warranties, representations, promises or statements, except to the extent that the same are expressly set forth

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in this Lease or in any other written agreement which may be made between the parties concurrently with the execution and delivery of this Lease and which shall expressly refer to this Lease. All understandings and agreements heretofore made between the parties are merged in this Lease and any other such written agreement(s) made concurrently herewith, which alone fully and completely express the agreement of the parties and which are entered into after full investigation, neither party relying upon any statement or representation not embodied in this Lease or any other such written agreement(s) made concurrently herewith. This Lease may be amended, and the provisions hereof may be waived or modified, only by instruments in writing executed by Landlord and Tenant. The titles of the several Articles and Sections contained herein are for convenience only and shall not be considered in construing this Lease. The submission of this document for examination and negotiation does not constitute an offer to lease, or a reservation of, or option for, the Premises, and Tenant shall have no right to the Premises hereunder until the execution and delivery hereof by both Landlord and Tenant. Except as herein otherwise provided, the terms hereof shall be binding upon and shall inure to the benefit of the successors and assigns, respectively, of Landlord and Tenant and, if Tenant shall be an individual, upon and to his heirs, executors, administrators, successors and assigns. Each term and each provision of this Lease to be performed by Tenant shall be construed to be both an independent covenant and a condition and time is of the essence with respect to the exercise of any of Tenant's rights, and the performance of any and all of Tenant's obligations, under this Lease. The reference contained to successors and assigns of Tenant is not intended to constitute a consent to assignment by Tenant. Except as otherwise set forth in this Lease, any obligations of Tenant (including, without limitation, rental and other monetary obligations, repair and maintenance obligations and obligations to indemnify Landlord), shall survive the expiration or earlier termination of this Lease, and Tenant shall immediately reimburse Landlord for any expense incurred by Landlord in curing Tenant's failure to satisfy any such obligation (notwithstanding the fact that such cure might be effected by Landlord following the expiration or earlier termination of this Lease).

10.10 Evidence of Authority. Concurrently with Tenant's execution and delivery of this Lease, Tenant shall deliver to Landlord documentation reasonably satisfactory to Landlord evidencing the authority of the person executing this Lease on behalf of Tenant to execute and deliver this Lease in the name and on behalf of Tenant and to execute and deliver all other documents, agreements and instruments, including, without limitation, notices of lease, to effect or secure the transactions contemplated herein.

10.11 UPS System. Landlord agrees that Tenant, at its sole cost and expense, and subject to compliance with the provisions of this Section 10.11, shall have the right to install and operate during the term an emergency electrical generator fueled by natural gas (which is separately metered to the Premises and paid for directly by Tenant to the gas supplier) on the Property in the location shown on Exhibit G attached hereto, and to run cables and lines from the generator to the Premises using the common shafts, chases, and conduits of the Building intended for such purpose to the extent that the same may be available after meeting Landlord's requirements for the Building, (the emergency generator and associated conduit, cables and lines (both interior and exterior) are hereinafter referred to collectively as the "UPS System"). The UPS System shall provide emergency back-up power to the Premises only, and no other party shall make use of the UPS System.

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Tenant shall prepare plans and specifications for the UPS System in accordance with the requirements of Exhibit C, which plans and specifications shall be subject to review and approval by Landlord as provided in Exhibit C; provided, however, that Landlord hereby approves the specifications attached hereto as Exhibit G-1; provided further however, that notwithstanding such specifications the UPS System shall be fueled by natural gas. Upon final approval by Landlord of Tenant's plans for the UPS System, Tenant may install the UPS System in accordance with the requirements of Exhibit C, any requirements of Landlord's insurance carrier(s), and all other applicable provisions of this Lease including, without limitation, those of Subsection 6.2.5. Landlord shall have no obligation or make any alterations, repairs or replacements to any portion of the Building or Property in order to accommodate the installation or operation of the UPS System.

During the term, Tenant, at its sole cost and expense, shall perform all repairs and maintenance required to keep the UPS System in good working order, appearance and condition, and Tenant shall promptly repair any damage to the Building or Property caused by the installation or operation of the UPS System. Tenant shall operate the UPS System in compliance with all applicable codes, laws, rules and regulations. Tenant may not relocate the UPS System and Tenant may not modify any portion of the UPS System without, in each instance, obtaining Landlord's prior written approval to such relocation or modification. All components of the UPS System shall be at the sole risk of Tenant and Landlord shall have no liability to Tenant in the event any portion of the UPS System is damaged for any reason.

Tenant shall, prior to the expiration or earlier termination of the term of this Lease, remove the entire UPS System (except that Landlord shall have the right to require Tenant to leave any cabling, wires or conduit installed within the Building), repair any damage caused by such removal, and restore the area outside the Building where the generator were located to a condition substantially the same as existed prior to the installation of the UPS System. Tenant agrees that its obligations hereunder shall be subject to the provisions of Subsection 6.1.9, including all of Landlord's rights and remedies.

Landlord reserves the right, upon reasonable notice to Tenant, to require Tenant to relocate the UPS System or any of its constitute components, at Tenant's sole cost and expense, if necessary in connection with any repairs, renovations, improvements or additions to the Building or Property. In addition, Landlord reserves the right to require Tenant to relocate the generator to another portion of the Property designated by Landlord for any other reason in Landlord's sole discretion, provided such other portion of the Property is adequate for Tenant's purposes and Landlord pays the reasonable costs of relocating the generator.

Tenant agrees that Landlord may require Tenant to paint the generator in a color selected by Landlord and/or install screening and/or landscaping in order to camouflage these exterior components of the UPS System.

10.12 Rooftop Antenna. Tenant, at its sole cost and expense and subject to compliance with the provisions of this Section 10.12, shall have the right to install and operate during the term not more than ten (10) antenna (the "Antennas"), as shown on Exhibit H attached hereto, in a location on the roof of the Building to be designated by Landlord (the "Antenna Area") and to run cables and lines from the Antennas to the Premises using the common shafts, chases, and conduits of the Building intended for such purpose to the extent that the same may be available

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after meeting Landlord's requirements for the Building (the Antennas and associated cables and lines are hereinafter referred to collectively as the "Antenna System"). Landlord makes no representation, express or implied, that the roof of the Building is suitable for the installation or operation of any Antenna or other communications device. Tenant shall pay all taxes assessed against Landlord and any sales or other taxes arising out of Tenant's installation and/or operation of the Antenna System.

Tenant shall prepare plans and specifications for the Antenna System for Landlord's approval in accordance with the requirements of Exhibit C, and upon Landlord's approval thereof and issuance of all necessary governmental permits and approvals, Tenant may install the Antenna System in accordance with such approved plans, the requirements of Subsection 6.2.5, Exhibit C and all other applicable provisions of this Lease. Landlord hereby approves of the specifications for the Antenna System set forth in Exhibit H attached hereto. Tenant may elect to submit further specifications for additional Antennas for Landlord's approval.

Tenant, at its expense, shall obtain all permits and approvals required for the installation and operation of the Antenna System prior to the installation thereof (but shall not be permitted to seek any zoning or similar relief for the Antenna System without Landlord's consent, which may be withheld in Landlord's sole discretion), and shall keep all required permits and approvals in full force and effect throughout the term.

Landlord shall have no obligation to provide any services to the Antenna Area or to make any alterations, repairs or replacements to any portion of the Building or Property in order to accommodate the installation or operation of the Antenna System. Tenant, at its sole cost and expense, shall perform any roof reinforcement reasonably required by Landlord to accommodate the weight of the Antennas on the Building roof. Under no circumstances shall Tenant make any roof penetrations other than as expressly approved by Landlord in writing in advance.

During the term, Tenant shall, at its sole cost and expense, perform all repairs and maintenance to the Antenna System as are necessary to keep it in good working order, appearance and condition, ordinary wear and tear thereof excepted, and Tenant shall promptly repair any damage to the Building or Property caused by the installation or operation of the Antenna System. Tenant shall operate the Antenna System in compliance with all applicable codes, laws, rules and regulations. Tenant may not relocate or modify any portion of the Antenna System without, in each instance, obtaining Landlord's prior written approval to such relocation or modification. The Antenna System shall be at the sole risk of Tenant and Landlord shall have no liability to Tenant in the event any portion of the Antenna System is damaged for any reason.

The Antenna System shall provide communications for Tenant only, and Tenant shall not permit any other person or firm to use the Antenna System.

Tenant shall, at the expiration or earlier termination of the term of this Lease, remove the entire Antenna System (except for any portions thereof that Landlord, acting in its sole discretion, permits to be left in place), repair any damage caused by such removal, and restore the Antenna Area to a condition substantially the same as existed prior to the installation of the Antenna System. Tenant's obligations hereunder shall be subject to the provisions of Subsection 6.1.9.

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Landlord reserves the right, upon reasonable notice to Tenant, to require Tenant to relocate the Antenna System or any of its constitute components, at Tenant's sole cost and expense, if necessary in connection with any repairs, renovations, improvements or additions to the Building or Property. In addition, Landlord reserves the right to require Tenant to relocate the Antenna to another portion of the roof designated by Landlord for any other reason in Landlord's sole discretion, provided such other portion of the roof is adequate for Tenant's purposes and Landlord pays the reasonable costs of relocating the Antenna.

Tenant shall be entitled to obtain access to the Antenna Area both during and outside of Normal Building Operating Hours (as defined in the Rules and Regulations), but only if (i) Tenant shall have given Landlord reasonable advance notice of the need therefor, and (ii) Tenant is accompanied by an authorized representative of Landlord during such access. In the event such access is provided outside of Normal Building Operating Hours, Landlord may require Tenant to pay, as Additional Rent, the reasonable costs incurred by Landlord to provide such access to Tenant.

Tenant shall not allow the Antenna System to interfere with any equipment installed or operating in or from the Building as of the date Tenant commences operation of, or shall subsequently modify, Tenant's Antenna System.

10.13 Force Majeure. Except as otherwise expressly provided in this Lease and except for the payment of Annual Fixed Rent, Additional Rent or other sums due under this Lease (as to which this Section 10.13 shall not apply), neither Landlord nor Tenant shall be liable or responsible for any failures, and there shall be excluded from the computation for any relevant period of time any delays, due to strikes, riots, Acts of God, scarcity of labor or materials (including energy), war, regulations or restrictions of governmental authorities or any other causes of any kind which are beyond the control of Landlord or Tenant, as the case may be.

[Remainder of page intentionally left blank.]

WITNESS the execution hereof under seal on the day and year first above written.

Landlord:

FP Gateway 270, LLC

By: The RMR Group LLC,
Its agent

By: _____
Jennifer F. Francis
Senior Vice President

Tenant:

PC-Tel, Inc.

By: _____
Name:
Title:

EXHIBIT A

PREMISES

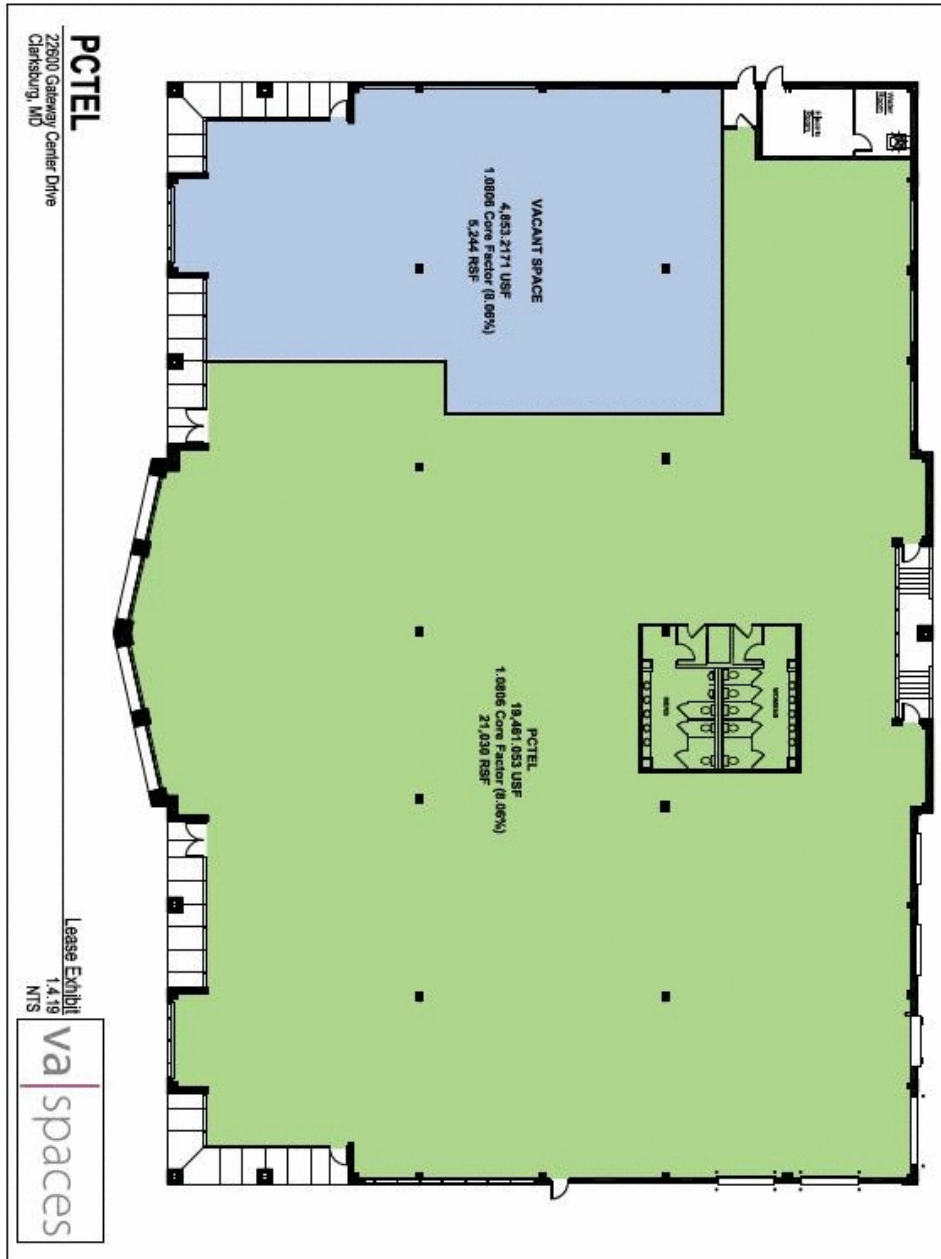


EXHIBIT B

RULES AND REGULATIONS

1. The sidewalks, entrances, passages, corridors, vestibules, halls, elevators or stairways in or about the Building shall not be obstructed by Tenant.
2. Tenant shall not place objects against glass partitions, doors or windows which would be unsightly from the Building corridor or from the exterior of the Building. No sign, advertisement, notice or other lettering shall be exhibited, inscribed, painted or fixed by Tenant on any window or part of the outside or inside of the Buildings without prior consent of Landlord.
3. Tenant shall not waste electricity or water in the Building and shall cooperate fully with Landlord to assure the most effective operation of the Building HVAC system. All regulating and adjusting of HVAC equipment shall be done by the Landlord's agents or employees.
4. No additional or different locks or bolts shall be affixed on doors by Tenant. Tenant shall return all keys to Landlord upon termination of Tenant's lease. Tenant shall not allow peddlers, solicitors or beggars in the Building and shall report such persons to the Landlord's agent.
5. Tenant shall not use the Premises so as to cause any increase above normal insurance premiums on the Building.
6. No bicycles, vehicles or animals of any kind, other than service animals, shall be brought into or kept in or about the Premises other than in the garage area located within the Premises.
7. Tenant shall not engage or pay any employees of the Building without approval from the Landlord. Tenant shall not employ any persons other than the janitor or employees of Landlord for the purpose of cleaning Premises without the prior written consent of Landlord.
8. All removals from the Building or the carrying in or out of the Building or the Premises of any freight, furniture or bulky matter of any description must take place at such time and in such manner as Landlord may determine from time to time.
9. Normal Building Operating Hours are 8:00 a.m. to 6:00 p.m. Mondays through Fridays and 9:00 a.m. to 1:00 p.m. on Saturdays excluding New Years Day, Martin Luther King's Birthday, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day (and the applicable weekday when any such day occurs on a weekend day) and all Sundays, except that Landlord reserves the option (at its sole election) to expand or alter Normal Building Operating Hours provided that on any Business Day there shall be no less than ten (10) consecutive Normal Building Operating Hours. Any day (other than a Saturday) on which Normal Building Operating Hours shall occur shall be a "Business Day".

10. Tenant shall cooperate with Landlord in minimizing loss and risk thereof from fire and associated perils.

11. Tenant shall, without charge, make electrical outlets in the Premises reasonably available to Landlord and/or its contractors, agents and employees during the making of repairs, alterations, additions or improvements in or to the demised premises.

12. The water and wash closets and other plumbing fixtures shall not be used for any purposes other than those for which they were designed and constructed and no sweepings, rubbish, rags, acid or like substance shall be deposited therein. All damages resulting from any misuse of the fixtures shall be borne by Tenant.

13. Tenant may request HVAC service outside of Normal Building Operating Hours by submitting a request in writing to the Building Manager's office by noon of the preceding workday.

14. Landlord reserves the right to establish, modify and enforce parking rules and regulations.

15. All refuse from the Premises shall be disposed of in accordance with the requirements established therefor by Landlord and no dumpster shall be overloaded by Tenant.

16. Landlord reserves the right at any time to rescind, alter or waive any rule or regulation at any time prescribed for the Building and to impose additional rules and regulations when in its judgment Landlord deems it necessary, desirable or proper for its best interest and for the best interest of tenants and other occupants and invitees thereof. No alteration or waiver of any rule or regulation in favor of one tenant shall operate as an alteration or waiver in favor of any other tenant. Landlord shall not be responsible to any tenant for the non-observance or violation by any other tenant however resulting of any rules or regulations at any time prescribed for the Building.

EXHIBIT C

ALTERATIONS REQUIREMENTS

A. General

1. All alterations, installations or improvements (“Alterations”) to be made by Tenant in, to or about the Premises, including any Alterations to be made prior to Tenant’s occupancy of the Premises for the Permitted Uses, shall be made in accordance with the requirements of this Exhibit and with any additional requirements stated in the Lease.

2. All submissions, inquiries approvals and other matters shall be processed through Landlord’s Building manager or regional property manager.

3. Additional and differing provisions in the Lease, if any, will be applicable and will take precedence over the terms of this Exhibit.

B. Plans

1. Before commencing construction of any Alterations, Tenant shall submit for Landlord’s written approval either a description of the Alterations or drawings and specifications for the Alterations, as follows:

- (i) Tenant shall submit drawings and written specifications (collectively, “Plans”) for all of Tenant’s Alterations, including mechanical, electrical and cabling, plumbing and architectural drawings. Drawings are to be complete, with full details and finish schedules, and shall be stamped by an AIA architect licensed in the state or district in which the Property is located certifying compliance with building codes.
- (ii) Tenant may submit a complete description of Tenant’s Alterations (including sketches or diagrams as necessary) in lieu of submitting Plans if the proposed Alterations meet all of the following criteria: (1) they are cosmetic in nature (e.g. painting, wallpapering, installation of floor coverings, etc.), (2) they do not require a building permit, (3) they do not require work to be performed inside walls or above the ceiling of the Premises, and (4) they will not affect the structure or the mechanical, plumbing, HVAC, electrical or life safety systems of the Building (collectively, the “Building Systems”). Notwithstanding that Tenant’s proposed Alterations satisfy all of the preceding criteria, upon review of Tenant’s submission, Landlord shall have the right to require Tenant to submit Plans for all or any portion of the proposed Alterations.

2. Landlord shall review the description or Plans submitted by Tenant (“Tenant’s Design Submission”) and notify Tenant of approval or disapproval. If Landlord disapproves Tenant’s Design Submission, Landlord shall specify the reasons for its disapproval. Tenant shall revise Tenant’s Design Submission with respect to Tenant’s Plans to meet Landlord’s objections, and shall resubmit the same to Landlord as so revised until Tenant’s Design Submission is approved by Landlord. For proposals that are not part of Tenant’s Plans, Tenant may, if it wishes Landlord to reconsider its disapproval, revise Tenant’s Design Submission to meet Landlord’s objections and resubmit the same to Landlord as so revised until Tenant’s Design Submission is approved by Landlord. No approval by Landlord of Tenant’s Design Submission shall constitute a waiver of

any of the requirements of this Exhibit or the Lease. Tenant shall not make any changes to Tenant's Design Submission after approval by Landlord, including changes required to obtain governmental permits, without obtaining Landlord's written approval in each instance.

3. All mechanical, electrical, structural and floor loading requirements shall be subject to approval of Landlord's engineers. Landlord also reserves the right to require Tenant to submit copies of shop drawings for Landlord's review and approval.

4. Before commencing construction of any Alterations, Tenant shall provide Landlord with two (2) complete copies of Tenant's Design Submission in final form as approved by Landlord.

C. Selection of Contractors and Subcontractors

Before commencing construction of any Alterations, Tenant shall submit to Landlord the names of Tenant's general contractor (the "General Contractor") and subcontractors for Landlord's approval. If Landlord shall reject the General Contractor or any subcontractor, Landlord shall advise Tenant of the reasons(s) in writing and Tenant shall (with respect to Tenant's Plans) or may (with respect to proposals that are not part of Tenant's Plans) submit another selection to Landlord for Landlord's approval; provided, however, in no event shall Tenant cause to be performed any Alterations other than by a General Contractor that has been approved by Landlord.

D. Insurance

Before commencing construction of any Alterations, Tenant will deliver to Landlord:

- (i) Four (4) executed copies of the Insurance Requirements agreement in the form set forth in Exhibit D from the general contractor and, if requested by Landlord, from the subcontractors (Landlord will return two fully executed copies to Tenant), and
- (ii) insurance certificates for the General Contractor and subcontractors as required by Exhibit D, which shall include evidence of coverage for the indemnity provided by the General Contractor or subcontractor executing such agreement.

E. Building Permit and Other Legal Requirements

1. Before commencing construction of any Alterations, Tenant shall furnish Landlord with a valid permit for the construction of the Alterations from the building department or other agency having jurisdiction in the municipality in which the Building is located (unless the Alterations are of a cosmetic nature not requiring a building permit). Tenant shall keep the original building permit posted on the Premises during the construction of the Alterations.

2. Tenant Design Submission, the Alterations, and the construction of the Alterations shall each be in strict compliance with (i) all applicable laws, codes, rules and regulations, including, without limitation, the Americans with Disabilities Act, state and local health department requirements, and occupational health and safety laws and regulations (and no approval of Tenant's Design Submission shall relieve Tenant of this obligation or invest

Landlord with any responsibility for ensuring such compliance), and (ii) all building permits, consents, licenses, variances, and approvals issued in connection with the Alterations. Tenant shall ensure that the General Contractor and all subcontractors have the requisite licenses to perform their work. Tenant shall procure all permits, governmental approvals, licenses, variances and consents required for the Alterations and shall provide Landlord with a complete copy thereof promptly upon receipt of same by Tenant.

F. Materials and Workmanship

1. All materials, equipment and installations must meet Landlord's minimum standards for the Building, as may be designated by Landlord from time to time, and all materials shall be new, commercial grade and of first-class quality. Any deviation from these requirements will be permitted only if clearly indicated or specified on Tenant's Design Submission and approved by Landlord.

2. Alterations shall be constructed in a professional, first-class and workmanlike manner, in accordance with Tenant's Design Submission.

3. The General Contractor shall guaranty all materials and workmanship against defects for a period of not less than one (1) year from installation. Notwithstanding any limitations contained in such guaranty or in any contract, purchase order or other agreement, during the entire term of the Lease, Tenant shall promptly repair or replace, at Tenant's cost, any defective aspect of the Alterations except for insubstantial defects that do not adversely effect the Building or the appearance or rental value of the Premises, as determined by Landlord in its sole discretion.

4. Alterations must be compatible with the existing Building Systems. In the event any Alterations shall interfere with the proper functioning of any Building System, Tenant, at Tenant's sole cost and expense, shall promptly cause such repairs, replacements or adjustments to be made to the Alterations as are necessary to eliminate any such interference.

G. Prosecution of the Work

1. All construction activities shall be conducted so as to avoid disturbance of other tenants. Landlord may require that all demolition and other categories of work that may inconvenience other tenants or disturb Building operations be scheduled and performed before or after Normal Building Operating Hours (at times determined by Landlord), and Tenant shall provide the Building manager with at least two Business Days' notice prior to proceeding with any such work.

2. Unless Landlord directs otherwise, Tenant's contractors shall have access to the Building during the Normal Building Operating Hours only. If Tenant's contractors desire access to the Building at any other time, Landlord shall use reasonable efforts to provide such access, provided, however, that Tenant shall pay Landlord any additional cost incurred by Landlord to provide such access, including, without limitation, additional costs for utilities, personnel, and security.

3. Prior arrangements for elevator use shall be made with the Building manager by Tenant or the General Contractor. Elevator cabs shall be properly padded and no material or

equipment shall be carried under or on top of elevators. If an operating engineer is required by any union rules, such engineer shall be paid for by Tenant.

4. Under no circumstances will any material related to Tenant's Alterations be allowed access through the Building's front entrance without advance written approval of the Building manager.

5. If shutdown of risers and mains for electrical, HVAC, sprinkler or plumbing work is required, such work shall be supervised by Landlord's representative at Tenant's expense. No work will be performed in Building mechanical equipment rooms except under Landlord's supervision.

6. Alterations shall be performed under the supervision of a superintendent or foreman of the General Contractor at all times.

7. All areas adjacent to the construction area shall be sealed with plastic so as to not be affected by dust and debris. All floors shall be protected from the construction process.

8. The General Contractor or HVAC subcontractor shall block off supply and return grilles, diffusers and ducts to keep dust from entering into the Building HVAC system and thoroughly clean all HVAC units in the work area at the completion of the Alterations.

9. Construction debris shall be removed from the construction area daily and the construction area shall be kept neat and reasonably clean at all times. All construction debris is to be discarded in waste containment provided by the General Contractor only. No material or debris shall be stored outside the Premises or Building without the prior written approval of the Landlord's representative.

10. Landlord shall have the right to instruct the General Contractor to deliver to Landlord any items to be removed from the Premises during the construction of the Alteration provided that Landlord provides notice to Tenant and pays the full cost of delivering such items to Landlord.

11. Tenant, either directly or through the General Contractor, will immediately notify Landlord, in writing, of any damage to the Building caused by the General Contractor or any subcontractors. Such damage shall be repaired within 72 hours unless otherwise directed by the Landlord in writing. Any damage that is not repaired may be repaired by Landlord at Tenant's expense.

12. Construction personnel shall use the restrooms located within the Premises only. If there are no restrooms within the Premises, then construction personnel shall use only those Building restrooms located on the floor where the work is being performed.

13. All wiring and cabling installed by Tenant shall be tagged with Tenant's name and its specific use and purpose.

14. The General Contractor and all subcontractors shall cause their employees to adhere to all applicable Rules and Regulations of the Building.

15. Landlord shall have the right to supervise and inspect the Alterations as the work progresses and to require Tenant to remove or correct any aspect of the Alterations that does not conform to Tenant's Design Submission approved by Landlord. Such supervision and inspection shall be at Tenant's sole expense and Tenant shall pay Landlord's reasonable charges for such supervision and inspection (which shall be limited to the one percent (1%) fee provided for in Section 3.2(d) of the Lease, and which shall not be due with respect to Alterations the cost of which (together with any related matter) is less than \$10,000.00; provided, however, that Section 3.2(d) shall control with respect to Tenant's Work).

H. Documents to Be Furnished to Landlord Upon Completion of Tenant's Work

1. Within fifteen (15) days after construction of the Alterations has been completed, except for so-called punch list items, Tenant shall furnish Landlord with the following documents:

- (i) record "as built" drawings in paper and electronic (CADD) format showing all of the Alterations as actually constructed for all portions of the Alterations for which drawings were submitted;
- (ii) if Plans for the Alterations were prepared by an architect, a written certification from the architect confirming that the Alterations were completed in accordance with the Plans and all applicable laws, codes, ordinances, and regulations;
- (iii) full and final lien waivers and releases executed by the General Contractor and all subcontractors and suppliers;
- (iv) if the Alterations include any HVAC work, a properly executed air balancing report signed by a professional engineer showing that the HVAC system is properly balanced for the season;
- (v) copies of all warranties and guarantees received from the General Contractor, subcontractors and materials suppliers or manufacturers;
- (vi) copies of all maintenance manuals, instructions and similar information pertaining to the operation and maintenance of equipment and fixtures installed in the Premises as part of the Alterations; and
- (vii) a copy of the final, permanent certificate of occupancy or amended certificate of occupancy for the Premises.

EXHIBIT D

CONTRACTOR'S INSURANCE REQUIREMENTS

Building: 22600 Gateway Center Drive, Clarksburg, Maryland

Tenant: PC-Tel, Inc.

Premises: Suite 100

The undersigned contractor or subcontractor ("Contractor") has been hired by the tenant or occupant (hereinafter called "Tenant") of the Building named above or by Tenant's contractor to perform certain work ("Work") for Tenant in the Premises identified above. Contractor and Tenant have requested the undersigned landlord ("Landlord") to grant Contractor access to the Building and its facilities in connection with the performance of the Work and Landlord agrees to grant such access to Contractor upon and subject to the following terms and conditions:

1. Contractor shall provide and maintain at its own expense, until completion of the Work, the following insurance:

(a) Workmen's Compensation and Employers Liability Insurance covering each and every workman employed in, about or upon the Work, as provided for in each and every statute applicable to Workmen's Compensation and Employers' Liability Insurance.

(b) Commercial General Liability Insurance including coverages for Protective and Contractual Liability, including umbrella liability coverage, for not less than the following limits:

Bodily Injury: \$5,000,000 per person
\$5,000,000 per occurrence

Property Damage: \$5,000,000 per occurrence
\$5,000,000 aggregate

(c) Commercial Automobile Liability Insurance (covering all owned, non owned and/or hired motor vehicles to be used in connection with the Work), including umbrella liability coverage, for not less than the following limits:

Bodily Injury: \$5,000,000 per person
\$5,000,000 per occurrence

Property Damage: \$5,000,000 per occurrence.

Contractor shall furnish a certificate from its insurance carrier or carriers to the Building office before commencing the Work, showing that it has complied with the above requirements regarding insurance and providing that the insurer will give Landlord ten (10) days' prior written notice of the cancellation of any of the foregoing policies.

The insurance provided in (b) and (c) above shall name Landlord as an additional insured.

2. Contractor shall require all of its subcontractors engaged in the Work to provide the following insurance:
- (a) Commercial General Liability Insurance including Protective and Contractual Liability coverages with limits of liability at least equal to the limits stated in paragraph 2(b).
 - (b) Commercial Automobile Liability Insurance (covering all owned, non-owned and/or hired motor vehicles to be used in connection with the Work) with limits of liability at least equal to the limits stated in paragraph 2(c).

Upon the request of Landlord, Contractor shall require all of its subcontractors engaged in the Work to execute an Insurance Requirements agreement in the same form as this Agreement.

Agreed to and executed this ___ day of _____, 20__.

Contractor:

By: _____

By: _____

{B2323618; 13}

EXHIBIT E

JANITORIAL SPECIFICATIONS

Office Areas

Nightly (Monday through Friday)

Empty and wipe outside wastebaskets, replacing liners if necessary. Remove to dumpster for disposal.

Dust with treated cloth the tops of all desks, credenzas, files, fixtures, windowsills, and all other horizontal surfaces (within reach).

Papers on desktops will not be moved.

Remove fingerprints, smudges, etc. from doors, doorframes, partition glass, sidelights, walls and around light switches.

Vacuum all rugs and carpet unobstructed by furniture, replacing chairs to their original positions. Spot clean minor stains as necessary.

Dust mop wood, resilient and composition floor areas with treated dust mops. Spot mop as necessary.

Dust all marble floors with untreated dust mop.

Spot mop all spills on hard surface floors as necessary.

Monthly

Dust all doorjamb.

Dust all areas above and below the janitor's normal reach.

Detail vacuum edges of carpet and all other carpeted areas not reached by the normal vacuum on a daily basis.

Vacuum or dust all return air vents.

Spray, buff and refinish all building standard resilient floors with a slip retardant floor finish.

Quarterly

Machine scrub and refinish all building standard resilient floors with a slip retardant floor finish.

Elevator Lobbies and Public Corridors

Nightly (Monday through Friday)

Dust mop wood, resilient and composition floor areas with treated dust mops. Spot mop as necessary.

Vacuum all carpeted areas. Spot minor stains.

Remove fingerprints from doors, walls, etc.

Weekly

Spot wash all lobby walls and doors.

Polish or clean all door kick plates and thresholds.

Dust all doorjamb.

Scrub and refinish all building standard resilient floors with a slip retardant floor finish.

Dust light diffusers.

Public Restrooms

Nightly (Monday through Friday)

Empty and sanitize all trash receptacles and sanitary napkin disposal units. Replace waste bags and liners.
Wash all basins, bowls, both sides of toilet seats and urinals (including tile walls near urinals). Damp wipe all partitions, clean flushometers, piping, toilet seat hinges and other metal surfaces. Clean undersides of rim on urinals and bowls.
Wash and polish all mirrors, powder shelves, bright work (including exposed piping below wash basins), towels dispensers, receptacles and any other metal surfaces.
Spot wash walls and doors.
Dust all ledges and tops of partitions.
Fill toilet tissue, soap, paper towels and sanitary dispensers.
Sweep all hard surface floors.

Damp mop hard surface floor areas with germicidal solution.

Monthly

Wash all partitions and tile walls.
Vacuum or wash as necessary all ventilation grills.
Dust all doors and doorjambes.
Machine scrub all building standard hard surface floors.

Lunch Room and Kitchen Areas

Nightly (Monday through Friday)

Remove trash and place for disposal. Change all liners nightly.
Wipe tables, chairs and countertops.
Wash and polish kitchen sink.
Sweep and spot mop floor.

Monthly

Spot wash doors and walls.
Scrub and refinish all building standard resilient floors with a slip retardant floor finish.
Wipe all vinyl chairs, chair rungs and table pedestals.

Loading Dock, Compactor Area and Service Entrance

Nightly (Monday through Friday)

Place all miscellaneous trash and debris, except construction and hazardous waste, into the trash compactor or designated garbage bins.
Sweep entire area, hose if necessary. Disinfect and deodorize as required.

Elevator Cabs

Nightly

Dust all walls, doors and ceilings.
Vacuum carpets and spot stains.
Spot clean all elevator saddles.
Clean all metal work.
Report burned out lights.

Monthly

Wash all elevator door fronts.
Steel wool and vacuum all elevator saddles.
Stairways
Dust air duct grilles.

Stairwells

Monthly

Sweep all stairways.
Dust all stairway lights within reach.
Dust all doors.
Dust all handrails.
Spot wash walls.

Quarterly

Damp mop all stairways.

EXHIBIT F

DECLARATION BY LANDLORD AND TENANT
AS TO DATE OF DELIVERY AND ACCEPTANCE
OF POSSESSION OF PREMISES

Attached to and made a part of the Lease dated _____, ____2018 (the "Lease"), entered into by and between FP Gateway 270, LLC, a New Jersey limited liability company, as Landlord, and PC-Tel, Inc., as Tenant, covering space comprising approximately 21,030 square feet as further described in the Lease (the "Premises") in the building located at 22600 Gateway Center Drive, Clarksburg, Maryland.

The undersigned Landlord and Tenant hereby declare that (i) possession of the Premises was delivered by Landlord to Tenant on _____, ____; (ii) the Lease is in full force and effect; (iii) the Commencement Date (as defined in the Lease) occurred on _____, ____, and the Original Term (as defined in the Lease) will expire on _____, ____; and (iv) as of the date hereof, there is no default of Landlord and Tenant claims no right to setoff against rents.

IN WITNESS WHEREOF, the parties have caused this Declaration to be executed as a sealed instrument as of this ____ day of _____, ____.

LANDLORD:

FP Gateway 270, LLC

By: The RMR Group LLC,
Its agent

By: _____
Jennifer F. Francis
Senior Vice President

TENANT:

PC-Tel, Inc.

By: _____
Name:
Title:

EXHIBIT G

LOCATION OF UPS SYSTEM



EXHIBIT G-1

UPS SYSTEM SPECIFICATIONS

(Attached.)

Standby Generators

GENERAC®

Standby Generators
Liquid-Cooled Gaseous Engine

Standby Generators

1 of 9

INCLUDES:

- Two Line LCD Tri-Lingual Digital Nexus™ Controller
- Isochronous Electronic Governor
- Sound Attenuated Enclosure
- Closed Coolant Recovery System
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- ±1% Voltage Regulation
- Natural Gas or LP Operation
- 2 Year Limited Warranty
- UL 2200 Listed

Standby Power Rating

Model QT070 (Aluminum - Bisque) - 70 kW 60 Hz
 Model QT080 (Aluminum - Bisque) - 80 kW 60 Hz
 Model QT100 (Aluminum - Bisque) - 100 kW 60 Hz
 Model QT130 (Aluminum - Bisque) - 130 kW 60 Hz
 Model QT150 (Aluminum - Bisque) - 150 kW 60 Hz



QUIET-TEST™

Meets EPA Emission Regulations

70, 100, 130 & 150 kW meet CA/MA emissions requirement with optional catalyst
 80 kW not for sale in CA/MA

FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
 - **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine. Digital voltage regulation at ±1%.
 - **SINGLE SOURCE SERVICE RESPONSE** from Generac's extensive dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component.
 - **GENERAC TRANSFER SWITCHES.** Long life and reliability are synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems and controls for total system compatibility.
- **TEST CRITERIA:**
- ✓ PROTOTYPE TESTED
 - ✓ NEMA MG1-22 EVALUATION
 - ✓ SYSTEM TORSIONAL TESTED
 - ✓ MOTOR STARTING ABILITY

GENERAC®



GENERATOR SPECIFICATIONS

Type	Synchronous
Rotor Insulation Class	H
Stator Insulation Class	H
Telephone Interference Factor (TIF)	<50
Alternator Output Leads 1-Phase	4 wire
Alternator Output Leads 3-Phase	6 wire (70, 80 & 150 kW) or 12 wire (100 & 130 kW)
Bearings	Sealed Ball
Coupling	Flexible Disc (70, 80 & 150 kW) or Gear Drive (100 & 130 kW)
Excitation System	Brushless

VOLTAGE REGULATION

Type	Electronic
Sensing	Single Phase
Regulation	± 1%

GOVERNOR SPECIFICATIONS

Type	Electronic
Frequency Regulation	Isynchronous
Steady State Regulation	± 0.25%

ELECTRICAL SYSTEM

Battery Charge Alternator	12 Volt/30 Amp
Static Battery Charger	2 Amp
Recommended Battery (battery not included)	Group 24F, 325 CCA (70, 80 & 150 kW) or Group 27F, 700 CCA (100 & 130 kW)
System Voltage	12 Volts

GENERATOR FEATURES

Revolving field heavy duty generator Directly connected to the engine Operating temperature rise 120 °C above a 40 °C ambient Class H insulation is NEMA rated All models fully prototyped tested

ENCLOSURE FEATURES

Aluminum weather protective enclosure	Ensures protection against moisture, rust, electrostatically applied textured epoxy paint for added durability.
Enclosed critical grade muffler	Quiet, critical grade muffler is mounted inside the unit to prevent injuries.
Small, compact, attractive	Makes for an easy, eye appealing installation.
SAE	Sound attenuated enclosure ensures quiet operation.

(All ratings in accordance with BS5514, ISO3046, ISO8528, SAE J1349 and DIN6271)

ENGINE SPECIFICATIONS: 80 kW

Make	Generac
Model	VType
Cylinders	8
Displacement (Liters)	5.4
Bore (in/mm)	3.55/90.2
Stroke (in/mm)	4.17/105.9
Compression Ratio	9:1
Intake Air System	Naturally Aspirated
Liter Type	Hydraulic

ENGINE SPECIFICATIONS: 70, 100, 130 & 150 kW

Make	Generac
Model	VType
Cylinders	10
Displacement (Liters)	6.8
Bore (in/mm)	3.55/90.2
Stroke (in/mm)	4.17/105.9
Compression Ratio	9:1
Intake Air System	Naturally Aspirated
Liter Type	Hydraulic

ENGINE LUBRICATION SYSTEM

Oil Pump Type	Gear
Oil Filter Type	Full flow spin-on cartridge
Crankcase Capacity (dfl)	5/4.7 (70, 100, 130 & 150 kW) or 6/5.7 (80 kW)

ENGINE COOLING SYSTEM

Type	Closed
Water Pump	Belt driven
Fan Speed (rpm)	2300 - 70 kW 2174 - 80 kW 1670 - 100 kW 1950 - 130 kW 2200 - 150 kW
Fan Diameter (in/mm)	22/558.8 (70 kW) or 26/660.4 (80, 100, 130 & 150 kW)
Fan Mode	Pusher (70 kW) or Puller (80, 100, 130 & 150 kW)

FUEL SYSTEM

Fuel Type	Natural gas, propane vapor
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure	11-1/4 water column/21-26 mm HG

70 • 80 • 100 • 130 • 150 kW

operating data

GENERATOR OUTPUT VOLTAGE/kW - 60 Hz

		kW LPG	Amp LPG	kW Nat. Gas	Amp Nat. Gas	CB Size (Both)
QT070	120/240 V, 1Ø, 1.0 pf	67	292	64	267	300
	120/208 V, 3Ø, 0.8 pf	70	243	67	232	300
	120/240 V, 3Ø, 0.8 pf	70	211	67	201	250
	277/480 V, 3Ø, 0.8 pf	70	105	67	101	125
QT080	120/240 V, 1Ø, 1.0 pf	77	333	77	333	400
	120/208 V, 3Ø, 0.8 pf	80	278	80	278	300
	120/240 V, 3Ø, 0.8 pf	80	241	80	240	300
	277/480 V, 3Ø, 0.8 pf	80	120	80	120	150
QT100	120/240 V, 1Ø, 1.0 pf	100	417	89	371	450
	120/208 V, 3Ø, 0.8 pf	100	347	94	326	400
	120/240 V, 3Ø, 0.8 pf	100	301	94	283	350
	277/480 V, 3Ø, 0.8 pf	100	150	94	141	175
QT130	120/240 V, 1Ø, 1.0 pf	130	542	117	488	600
	120/208 V, 3Ø, 0.8 pf	130	451	122	423	500
	120/240 V, 3Ø, 0.8 pf	130	391	122	367	450
	277/480 V, 3Ø, 0.8 pf	130	195	122	183	225
QT150	120/240 V, 1Ø, 1.0 pf	144	625	136	567	700
	120/208 V, 3Ø, 0.8 pf	150	520	142	493	600
	120/240 V, 3Ø, 0.8 pf	150	451	142	427	500
	277/480 V, 3Ø, 0.8 pf	150	225	142	214	250

SURGE CAPACITY IN AMPS

		Voltage Dip @ < .4 pf	
		15%	30%
QT070	120/240 V, 1Ø	129	356
	120/208 V, 3Ø	194	471
	120/240 V, 3Ø	168	408
	277/480 V, 3Ø	83	201
QT080	120/240 V, 1Ø	174	435
	120/208 V, 3Ø	186	466
	120/240 V, 3Ø	161	404
	277/480 V, 3Ø	70	175
QT100	120/240 V, 1Ø	150	413
	120/208 V, 3Ø	186	452
	120/240 V, 3Ø	161	392
	277/480 V, 3Ø	107	261
QT130	120/240 V, 1Ø	236	648
	120/208 V, 3Ø	364	885
	120/240 V, 3Ø	315	767
	277/480 V, 3Ø	161	390
QT150	120/240 V, 1Ø	486	1214
	120/208 V, 3Ø	534	1334
	120/240 V, 3Ø	463	1156
	277/480 V, 3Ø	250	624

Note: Fuel pipe must be sized for full load.

For Btu content, multiply gal/hr x 90950 (LPG) or ft³/hr x 1000 (NG).

For megajoule content, multiply l/hr x 25.35 (LPG) or m³/hr x 37.26 (NG).

Refer to "Emissions Data Sheets" for maximum fuel flow for EPA and SCAQMD permitting purposes.

STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice.

ENGINE FUEL CONSUMPTION

		Natural Gas		Propane		
		ft ³ /hr	m ³ /hr	gal/hr	l/hr	
		(ft ³ /hr)	(m ³ /hr)	(l/hr)	(ft ³ /hr)	
QT070	Exercise cycle	110	3.1	1.2	4.6	44
	25% of rated load	260	7.4	2.85	10.8	104
	50% of rated load	500	14.2	5.46	20.8	200
	75% of rated load	696	19.8	7.62	29.1	280
	100% of rated load	1020	29	11.17	42.6	411
QT080	Exercise cycle	95	2.7	1	3.9	53
	25% of rated load	549.5	15.6	6.99	1.85	126
	50% of rated load	784.4	22.2	10.16	2.68	241
	75% of rated load	1024.8	29.0	13.11	3.46	336
	100% of rated load	1252.2	35.5	15.71	4.15	465
QT100	Exercise cycle	130	3.7	1.4	5.4	52
	25% of rated load	371	10.5	4.1	15.5	149
	50% of rated load	713	20.3	7.9	29.8	287
	75% of rated load	991	28.2	11	41.5	400
	100% of rated load	1260	35.8	13.9	52.6	507
QT130	Exercise cycle	135	3.8	1.4	5.7	55
	25% of rated load	482	13.7	5.3	20	193
	50% of rated load	927	26.3	10.3	38.7	373
	75% of rated load	1292	36.7	14.3	54	520
	100% of rated load	1786	50.8	19.8	74.6	719
QT150	Exercise cycle	155	4.4	1.7	6.5	63
	25% of rated load	556	15.8	6.09	23.2	224
	50% of rated load	1070	30.4	11.72	44.7	431
	75% of rated load	1491	42.4	16.33	62.3	600
	100% of rated load	2061	58.6	22.57	86.1	830

70 • 80 • 100 • 130 • 150 kW**operating data****ENGINE COOLING**

	70 kW	80 kW	100 kW	130 kW	150 kW
Air flow (inlet air including alternator and combustion air in ft ³ /min)	5700/147.2	5300/150.1	5500/155.7	6450/182.6	7800/220.9
System coolant capacity (gal/liters)	4.5/17	4/15.1	4.5/17	4.5/17	4.5/17
Heat rejection to coolant (BTU/hr)	287,000/902.8	316,000/933.4	342,000/960.8	496,000/523.3	568,000/599.3
Maximum operation air temperature on radiator (°C/°F)	60/150				
Maximum ambient temperature (°C/°F)	50/140				

COMBUSTION REQUIREMENTS

Flow at rated power (dm ³ /min)	205/5.8	143/4	262/7.4	336/9.5	410/11.6
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SOUND EMISSIONS

Sound output in dB(A) at 23 ft (7 m) with generator in exercise mode*	64	65	68	69	66
Sound output in dB(A) at 23 ft (7 m) with generator operating at normal load*	72	74	72	75	79

*Sound levels are taken from the front of the generator. Sound levels taken from other sides of the generator may be higher depending on installation parameters.

EXHAUST

Exhaust flow at rated output (dm ³ /min)	557/15.8	720/20.4	888/25.1	1119/31.7	1535/43.5
Exhaust temperature at muffler outlet (°C/°F)	477/890	796/1465	516/960	521/970	593/1100

ENGINE PARAMETERS

Rated Synchronous rpm	1800	3600	2300	2970	3600
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POWER ADJUSTMENT FOR AMBIENT CONDITIONS

Temperature Deration	.3% for every 10 °C above 25 °C or 1.65% for every 10 °F above 77 °F
Altitude Deration (70, 100, 130 & 150)	.1% for every 100 m above 183 m or 3% for every 1000 ft above 600 ft
Altitude Deration (80 kW)	.1% for every 100 m above 915 m or 3% for every 1000 ft above 3000 ft

CONTROLLER FEATURES

2-Line Plain Text LCD Display	Simple user interface for ease of operation.
Mode Switch: Auto	Automatic Start on Utility failure, 7 day exerciser
Off	Stops unit, Power is removed. Control and charger still operate.
Manual	Start with starter control, unit stays on. If utility fails, transfer to load takes place.
Programmable start delay between 10-30 seconds	Standard
Engine Start Sequence	Cyclic cranking: 16 sec on, 7 rest (90 sec maximum duration)
Engine Warm-up	5 sec
Engine Cool-Down	1 min
Starter Lock-out	Starter cannot re-engage until 5 sec after engine has stopped.
Smart Battery Charger	Standard
Automatic Voltage Regulation with Over and Under Voltage Protection	Standard
Automatic Low Oil Pressure Shutdown	Standard
Overspeed Shutdown	Standard, 72 Hz
High Temperature Shutdown	Standard
Overcrank Protection	Standard
Safety Fused	Standard
Failure to Transfer Protection	Standard
Low Battery Protection	Standard
50 Event Run Log	Standard
Future Set Capable Exerciser	Standard
Incorrect Wiring Protection	Standard
Internal Fault Protection	Standard
Common External Fault Capability	Standard
Governor Failure Protection	Standard

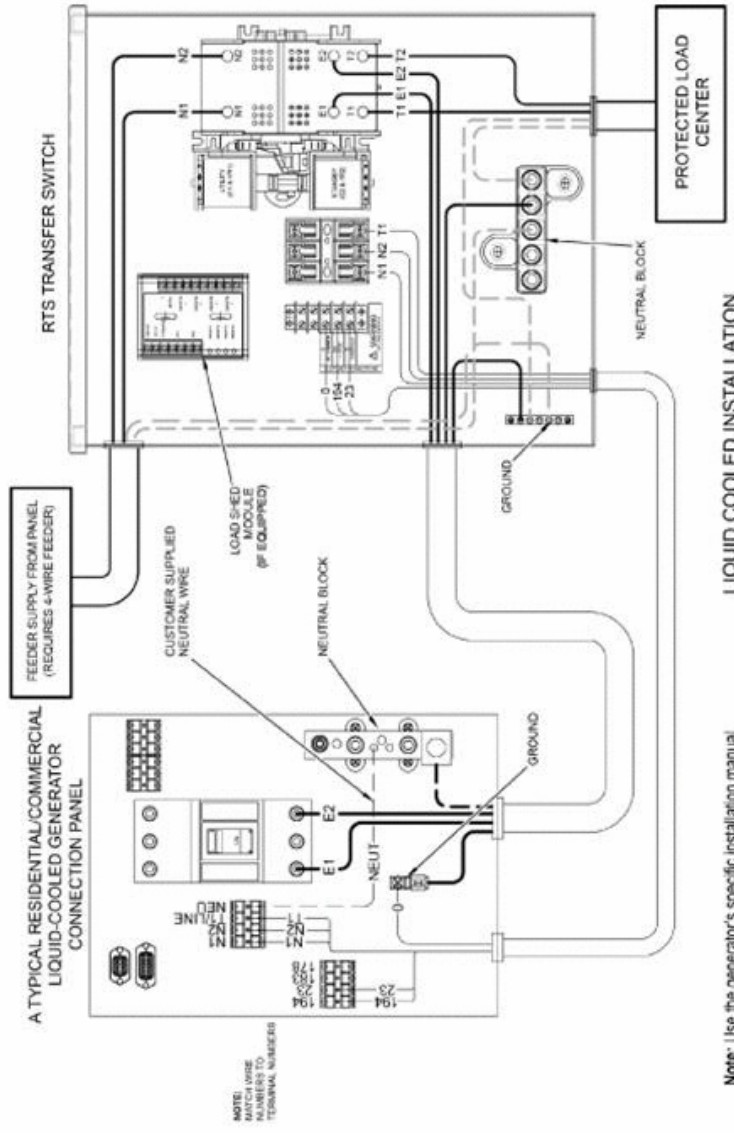
70 • 80 • 100 • 130 • 150 kW

available accessories

Model #	Product	Description
G006463-4	Mobile Link™	Generac's Mobile Link allows you to check the status of your generator from anywhere that you have access to an internet connection from a PC or with any smart device. You will even be notified when a change in the generator's status occurs via e-mail or text message. Note: Harness Adapter Kit required. Available in the U.S. only.
G006478-0	Harness Adapter Kit	The Harness Adapter Kit is required to make liquid-cooled units compatible with Mobile Link™.
G005632-1 - 70, 80 & 150 kW G005633-0 - 100 & 130 kW	Cold Weather Kit	If the temperature regularly falls below 32 °F (0 °C), install a cold weather kit to maintain optimal battery temperature. Kit consists of battery warmer with thermostat built into the wrap.
G005620-0 - 70, 100 & 130 kW G006204-0 - 80 kW G005667-0 - 150 kW	Extreme Cold Weather Kit	Recommended where the temperature regularly falls below 32 °F (0 °C) for extended periods of time. For liquid cooled units only.
G005651-0	Base Plug Kit	Add base plugs to the base of the generator to keep out debris.
G005703-0	Paint Kit	If the generator enclosure is scratched or damaged, it is important to touch-up the paint to protect from future corrosion. The paint kit includes the necessary paint to properly maintain or touch-up a generator enclosure.
G005660-0 - 70, 100, 130, and 150 kW G006915-0 - 80 kW	Scheduled Maintenance Kit	The Liquid-Cooled Scheduled Maintenance Kits offer all the hardware necessary to perform complete maintenance on Generac liquid-cooled generators.
G006664-0	Local Wireless Monitor	Completely wireless and battery powered, Generac's wireless remote monitor provides you with instant status information without ever leaving the house.
G006665-0	Wireless Remote Extension Harness	Recommended for use with the Wireless Remote on units up to 60 kW, required for use on units 70 kW or greater.
G006873-0	Smart Management Module (50 Amps)	Smart Management Modules are used in conjunction with the Automatic Transfer Switch to increase its power management capabilities. It provides additional power management flexibility not found in any other power management system.
G007005-0	Wi-Fi LP Fuel Level Monitor	The Wi-Fi enabled LP fuel level monitor provides constant monitoring of the connected LP fuel tank. Monitoring the LP tank's fuel level is an important step in making sure your generator is ready to run during an unexpected power failure. Status alerts are available through a free application to notify when your LP tank is in need of a refill.
G008510-0	E-Stop	E-stop allows for immediate fuel shutoff and generator shutdown in the event of an emergency.

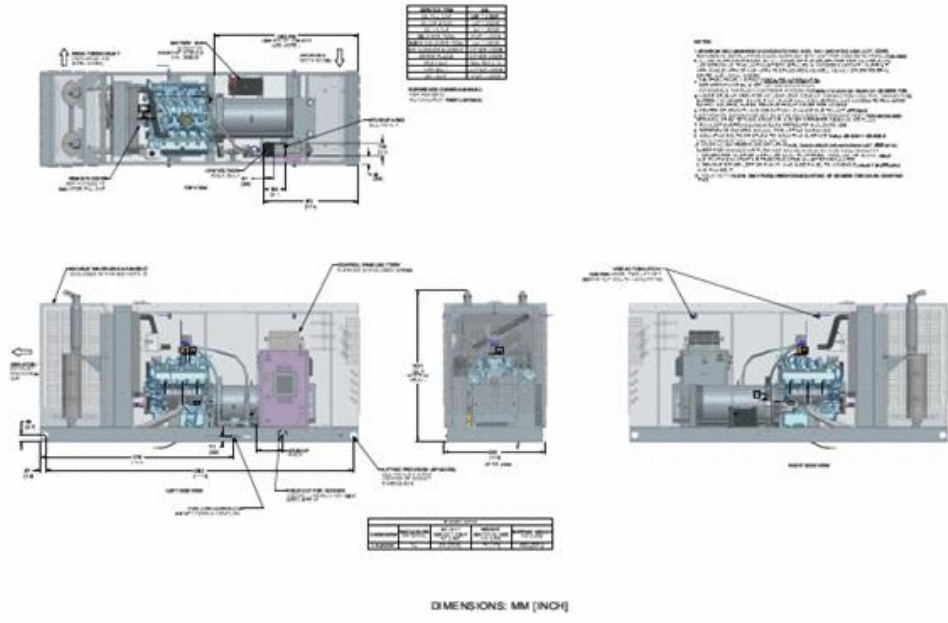
70 • 80 • 100 • 130 • 150 kW

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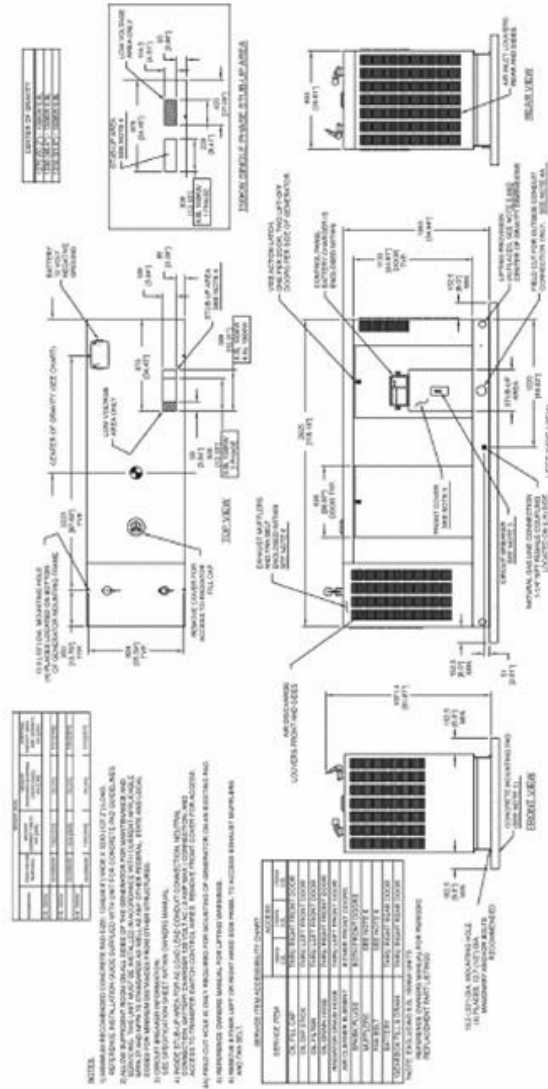


LIQUID-COOLED INSTALLATION

Note: Use the generator's specific installation manual and wiring diagrams to verify generator wiring connections, as they may differ slightly from illustration.



NOTES:
1. GENERATOR SHALL BE INSTALLED ON A CONCRETE FOUNDATION.
2. GENERATOR SHALL BE INSTALLED IN A WELL-VENTILATED AREA.
3. GENERATOR SHALL BE INSTALLED IN A DRY AREA.
4. GENERATOR SHALL BE INSTALLED IN A PROTECTED AREA.
5. GENERATOR SHALL BE INSTALLED IN A SECURED AREA.
6. GENERATOR SHALL BE INSTALLED IN A CLEAN AREA.
7. GENERATOR SHALL BE INSTALLED IN A QUIET AREA.
8. GENERATOR SHALL BE INSTALLED IN A SAFE AREA.
9. GENERATOR SHALL BE INSTALLED IN A WELL-MAINTAINED AREA.
10. GENERATOR SHALL BE INSTALLED IN A WELL-INSULATED AREA.



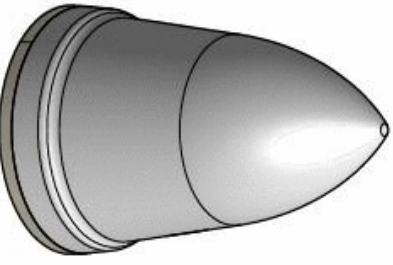
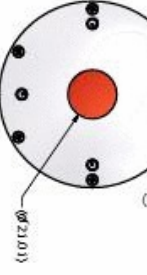
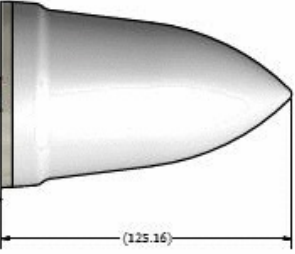
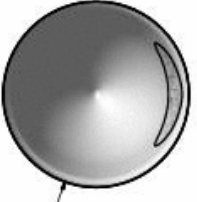
DIMENSIONS: MM [INCH]

EXHIBIT H

ANTENNA SYSTEM SPECIFICATIONS

{B2323618; 13}

REVISION HISTORY		DATE	APPROVED
REV	DESCRIPTION		
1	GPS TRACK ANTENNA	09/01/2016	CE



NOTES: UNLESS OTHERWISE SPECIFIED
 1. ALL DIMENSIONS ARE FOR REFERENCE PURPOSES
 UNLESS TOLERANCES ARE INDICATED

SPECIFICATIONS		MATERIALS		FINISH	
1. TYPICAL OPERATING FREQUENCY	1.57542 GHz	1. ANTENNA BODY	ALUMINUM	1. SURFACE FINISH	ANODIZED
2. TYPICAL OPERATING POWER	100mW	2. MOUNTING BRACKET	ALUMINUM	2. SURFACE FINISH	ANODIZED
3. TYPICAL OPERATING TEMPERATURE	-40°C to +85°C	3. FASTENERS	ALUMINUM	3. SURFACE FINISH	ANODIZED
4. TYPICAL OPERATING HUMIDITY	5% to 95%	4. WELDING	ALUMINUM	4. SURFACE FINISH	ANODIZED
5. TYPICAL OPERATING VIBRATION	0.1g to 0.5g	5. PAINT	ALUMINUM	5. SURFACE FINISH	ANODIZED
6. TYPICAL OPERATING SHOCK	10g to 20g	6. COATING	ALUMINUM	6. SURFACE FINISH	ANODIZED
7. TYPICAL OPERATING STORAGE TEMPERATURE	-55°C to +125°C	7. OTHER	ALUMINUM	7. SURFACE FINISH	ANODIZED
8. TYPICAL OPERATING STORAGE HUMIDITY	5% to 95%	8. OTHER	ALUMINUM	8. SURFACE FINISH	ANODIZED
9. TYPICAL OPERATING STORAGE VIBRATION	0.1g to 0.5g	9. OTHER	ALUMINUM	9. SURFACE FINISH	ANODIZED
10. TYPICAL OPERATING STORAGE SHOCK	10g to 20g	10. OTHER	ALUMINUM	10. SURFACE FINISH	ANODIZED

PCTEL
 ANTENNA, GPS L1 TRACK SOURCE
 PCTEL INC.
 4700 BROADWAY
 BROOMFIELD, CO 80020
 TEL: 303.437.4000
 FAX: 303.437.4001
 WWW.PCTEL.COM

QPS TRACK ANTENNA
 PART 1 OF 1



{B2323618; 13}

Subsidiary

**State or Other Jurisdiction of
Incorporation or Organization**

PCTEL (Tianjin) Electronics Company Ltd.

China

PCTEL Limited (United Kingdom)

United Kingdom

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our reports dated March 18, 2019, with respect to the consolidated financial statements and internal control over financial reporting included in the Annual Report of PCTEL, Inc. on Form 10-K for the year ended December 31, 2018. We consent to the incorporation by reference of said reports in the Registration Statements of PCTEL, Inc. on Forms S-8 (File No. 333-205754; File No. 333-198134; File No. 333-168222; File No. 333-135586; File No. 333-131020; File No. 333-122117; File No. 333-112621; File No. 333-106891; File No. 333-103233; File No. 333-82120; File No. 333-75204; File No. 333-70886; File No. 333-61926; and File No. 333-34910).

/s/ Grant Thornton LLP

Chicago, Illinois
March 18, 2019

Exhibit 24

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints David A. Neumann and Kevin McGowan, and each of them, his true and lawful attorneys-in-fact and agents, each with full power of substitution and re-substitution, to sign any and all amendments (including post-effective amendments) to this Annual Report on Form 10-K and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, or any of them, shall do or cause to be done by virtue hereof. This Power of Attorney shall remain in effect until revoked in writing by the undersigned.

Date: March 18, 2019

/s/ CINDY K. ANDREOTTI
(Cindy K. Andreotti)

/s/ GINA HASPILAIRE
(Gina Haspilaire)

/s/ CYNTHIA KEITH
(Cynthia Keith)

/s/ STEVEN D. LEVY
(Steven D. Levy)

/s/ GIACOMO MARINI
(Giacomo Marini)

/s/ M. JAY SINDER
(M. Jay Sinder)

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO EXCHANGE ACT RULES 13a-14(a) and 15(d)-14(a), AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, David A. Neumann, certify that:

1. I have reviewed this annual report on Form 10-K of PCTEL, Inc.:

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

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

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

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

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

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

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

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

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

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

Date: March 18, 2019

/s/ DAVID A. NEUMANN

David A. Neumann

Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO EXCHANGE ACT RULES 13a-14(a) and 15(d)-14(a), AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Kevin McGowan, certify that:

1. I have reviewed this annual report on Form 10-K of PCTEL, Inc.:

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

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

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

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

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

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

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

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

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

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

Date: March 18, 2019

/s/ KEVIN MCGOWAN

Kevin McGowan
Chief Financial Officer

CERTIFICATIONS OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL
OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED
PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, David A. Neumann, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report on Form 10-K of PCTEL, Inc. for the fiscal year ended December 31, 2018 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of PCTEL, Inc. A signed original of this written statement required by Section 906 has been provided to PCTEL, Inc. and will be retained by PCTEL, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

DATE: March 18, 2019 By: /s/ David A Neumann
NAME: DAVID A. NEUMANN
Title: Chief Executive Officer

I, Kevin McGowan, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report on Form 10-K of PCTEL, Inc. for the fiscal year ended December 31, 2018 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of PCTEL, Inc. A signed original of this written statement required by Section 906 has been provided to PCTEL, Inc. and will be retained by PCTEL, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

DATE: March 18, 2019 By: /s/ Kevin McGowan
NAME: KEVIN MCGOWAN
Title: Chief Financial Officer